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STATE OF NEW JERSEY

DEPARTMENT OF AGRICULTURE

W. H. ALLEN, *Secretary*

# Thirty-seventh Annual Report

OF THE

# New Jersey State Department of Agriculture

July 1, 1951—June 30, 1952

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Trenton, N. J., June 30, 1952

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# NEW JERSEY

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DR. R. A. HENDERSHOTT, *Director, Division of Animal Industry*

FRED W. JACKSON, *Director, Division of Information*

WARREN W. OLEY, *Director, Division of Markets*

DR. HARRY B. WEISS, *Director, Division of Plant Industry*

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Messrs. Tice and Olsen will retire from the board on June 30, 1952. The new members will be Henry Rapp, Jr., of Farmingdale and Lloyd B. Wescott of Clinton.

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STATE OF NEW JERSEY

DEPARTMENT OF AGRICULTURE

W. H. ALLEN, *Secretary*

TRENTON

June 30, 1952

*To His Excellency, the Governor, and Members of the Senate and General Assembly of the State of New Jersey:*

I have the honor to transmit, on behalf of the State Board of Agriculture, the Thirty-seventh Annual Report of the New Jersey Department of Agriculture, for the fiscal year ended June 30, 1952.

Respectfully yours,

W. H. Allen

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# THIRTY-SEVENTH ANNUAL REPORT OF THE NEW JERSEY STATE DEPARTMENT OF AGRICULTURE

## *The Year in Review*

Unsettled world conditions have continued to exert strong pressures on the national economy, particularly in the production and marketing of agricultural products. The application of measures intended to stabilize price structures and marketing programs has created problems of surplus in some areas of agricultural production. The farm labor situation, while difficult especially in meeting year-round needs, has not been as acute as in the war years; nevertheless, the attraction of high wages in industry and the call of military service have kept the farm labor reservoir at a low level. Added to these situations has been the burden of meeting increased costs of production all along the line, so that in spite of substantially increased gross revenues, agriculture has not kept pace, net-wise, with the rest of the economy.

### Farm Value of Agricultural Products

During the calendar year 1951, the farm value of New Jersey agricultural products rose to $395,700,000, a gain of about 27 per cent over that of the previous year. While most lines of endeavor shared in this increase, downward changes were noted for white potatoes, tree fruits, and such products as honey, seeds and lumber, which are classed as miscellaneous. There was a 26 per cent drop in the value of the white potato crop, due to a combination of lower yields per acre and a substantial cut of 10,000 acres from the swollen war acreage supported by Federal price support programs.

Outstanding in substantial gains in farm value of products were eggs, the largest single agricultural industry in New Jersey, with an increase of 55 per cent, and poultry, which rose 42 per cent. Others included meat animals, whose total value appreciated 34 per cent, and vegetables, an increased acreage of which resulted in a gain of about 20 per cent in farm value, although unit prices in general were about the same as the year before.

The value of production for the year 1951 by agricultural commodities was: Eggs, $119,400,000; milk, $69,200,000; vegetables, $60,400,000; poultry, $34,400,000; grains, $26,100,000; nursery and greenhouse products, $25,000,000; meat animals, $21,700,000; hay, $15,200,000; tree fruits,

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$9,300,000; white potatoes, $8,000,000; berries, $6,000,000; and miscellaneous products, $1,000,000.

## THE WORK OF THE DEPARTMENT

In a general way, the activities of the State Department of Agriculture may be divided into two main classes—regulatory and promotional. The regulatory work is comprised of enforcement of laws enacted by the Legislature and directed to the Department to be carried out. The promotional services concern mainly programs developed in cooperation with farmers and farm organizations for the benefit of agriculture which directly and indirectly benefit both farmers and consumers. The control and eradication of livestock diseases, mainly in the more than 10,000 dairy herds in the State, has long been an important project of the Department.

In the tuberculosis eradication program the percentage of reaction was reduced in the fiscal year to a ratio of only one infected animal in every 1,000 tested. This is far below the requirement set by the Federal government for accreditation. The work is carried out on the basis of the test and slaughter program, indemnifying dairymen for reactors that are removed from the herd. The State's share of indemnities amounted to less than $15,000 during the year and represents a low cost with which to protect the several million dollars in State money which have been expended in the last several decades to achieve this goal of near perfection.

Similarly, considerable effort has been devoted to the development of testing programs to reduce and eliminate another serious disease in dairy cattle, brucellosis. One of the most promising methods is the calf vaccination program which establishes resistance to the disease in young stock. This was started a few years ago and during the initial year of operation about 13,000 calves were so treated. The number has increased each year and during the current fiscal year more than 21,000 calves were vaccinated. These efforts are being directed against the time, a few years hence, when regulations will be promulgated requiring that all milk marketed in New Jersey must come from brucellosis-free herds.

On the last day or two of the fiscal year an outbreak of a disease new to New Jersey occured in swine establishments where raw garbage from metropolitan areas is fed. This disease, known as vesicular exanthema, poses a serious problem, and it appears that legislation to require the cooking of garbage that is fed to hogs, and perhaps other measures, may be necessary to control or eradicate this highly contagious disease.

Marketing continues to be of prime importance in the State's agricul-

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tural enterprises because on methods of marketing depends the success or failure of the year's production efforts. A number of activities in this field are directed toward improvement of marketing methods. These include services to producers in the form of market information and prices; the use of official grades in the marketing of fruit and vegetable crops for processing and the fresh market; cooperation with produce, egg and poultry, and livestock auction markets; the shipping points; and the promotion of other programs designed to improve grading, packaging and rapid handling of perishable commodities. Under official grades nearly 50 million pounds of asparagus were delivered to processing plants in the spring of 1952 for freezing or canning, and almost 216,000 tons of tomatoes for canning during the summer and fall of 1951. This was a record year in quality of tomatoes delivered to processing plants with a season average of 70 per cent No. 1's. The quality of asparagus was likewise at a high peak. The system of contracting on the basis of official State grades has over a period of years given a stability to the vegetable industry, particularly in the southern half of the State where the processing plants are located.

Auction selling continued to be an advantageous method of marketing a large volume of produce, eggs and poultry, and livestock. Produce sales for the 1951 season topped $8 million, which was a little less than that of the previous year by reason of a smaller volume. Egg and poultry markets did a business in excess of $20 million during the fiscal year, while livestock markets had a gross operation of more than $13 million.

Two new plant pests have appeared on the New Jersey scene, one being the alfalfa weevil which attacks that important forage crop, and the other the golden nematode which could be a threat to the potato industry if not controlled. The nematode has established itself in the Long Island potato growing area during the past several years with considerable economic losses as a result. Close attention is being given to both of these new pests to prevent any serious inroads in New Jersey.

The foundation of good agriculture, as far as crops are concerned, is the use of high quality seed. The Department's seed certification work has been increasing annually and in a five-year period the amount of seed so certified has doubled, now amounting to more than 56,000 bushels of various grains. In spite of this, the demand for this high quality seed still exceeds the supply, for growers realize that by using it they have a product which is high in germination, free from disease, and true to type. In addition to the certification of grain seed, which includes corn, barley, wheat, oats and soy beans, a similar program for tomato seed has proved of great value. During the current fiscal year approximately 122,000 pounds of tomato seed, mostly

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of the Rutgers variety, were certified; some of this seed went to a number of foreign countries, including South America and Africa.

These are a few of the highlights of Department activities and accomplishments for the year. Attention is directed to the remainder of the report where details may be found under their respective headings.

## ACKNOWLEDGMENT

All these phases of departmental work, and others described in this report were dependent upon the diligence and attention of staff members to carry them to successful conclusions. The results have benefited the State as a whole, and not agricultural interests alone. It is fitting that an expression of appreciation to all those workers should be made here as a part of the record.

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## LICENSING AND BONDING

The State Department of Agriculture is entrusted with the enforcement of Article 1, Chapter 12, Title 4 of the Revised Statutes (1937), commonly known as the Milk Dealers Licensing and Bonding Act; Article 2, Chapter 11, Title 4, the Produce Dealers Licensing and Bonding Act; and Article 1, Chapter 11, Title 4, the Cattle Dealers Licensing Act.

### MILK DEALERS LICENSING AND BONDING ACT

During the 1951-52 fiscal year, licenses were issued to 210 dealers who had filed bonds amounting to $4,276,000 with the Department. These figures represent a slight increase in the amount of bonds and a decrease in the number of dealers, continuing a trend begun in 1946.

The milk price situation in New Jersey remained somewhat unsettled during the year. There was considerable agitation to have the Office of Milk Industry raise the farm price of Class I (fluid) milk, which had prevailed at a level of $5.87 per hundredweight since October 15, 1950. The price remained at that level throughout the year.

MILK DEALERS LICENSED AND BONDED

July 1, 1951 to June 30, 1952

| County | | Licenses Issued | Bonds Filed | Amount of Bonds |
|---|---|---|---|---|
| Atlantic | | 4 | 4 | $95,000 |
| Bergen | | 7 | 7 | 136,000 |
| Burlington | | 13 | 13 | 251,000 |
| Camden | | 9 | 9 | 121,000 |
| Cape May | | 3 | 3 | 5,000 |
| Cumberland | | 12 | 12 | 139,000 |
| Essex | | 11 | 11 | 384,000 |
| Gloucester | | 9 | 9 | 61,000 |
| Hunterdon | | 9 | 9 | 417,000 |
| Mercer | | 19 | 19 | 313,000 |
| Middlesex | | 11 | 11 | 215,000 |
| Monmouth | | 22 | 22 | 230,000 |
| Morris | | 24 | 24 | 287,000 |
| Ocean | | 3 | 3 | 68,000 |
| Passaic | | 12 | 12 | 386,000 |
| Salem | | 6 | 6 | 52,000 |
| Somerset | | 13 | 13 | 235,000 |
| Sussex | | 1 | 1 | 90,000 |
| Union | | 7 | 7 | 143,000 |
| Warren | | 5 | 5 | 45,000 |
| Out-of-State | | 10 | 10 | 603,000 |
| Totals | 1951-52 | 210 | 210 | $4,276,000 |
| | 1950-51 | 214 | 214 | 4,136,000 |
| | 1949-50 | 214 | 214 | 4,066,200 |
| | 1948-49 | 235 | 235 | 4,071,000 |
| | 1947-48 | 247 | 246 | 3,578,000 |

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## PRODUCE DEALERS LICENSING AND BONDING ACT

At the close of the 1951-52 licensing year, there were 13 fewer licensed dealers than during the previous year. Licenses were issued to 383 dealers who filed bonds totaling $1,149,000. This continues the downward trend in both licenses and bonds which has been taking place since the end of the war. This year, almost one-third of the licenses were issued to out-of-state dealers.

The decrease in number of licensees was partly caused by fewer new buyers entering the produce business. Many of those who entered the business when conditions were exceptionally good withdrew during the year.

Claims and complaints during the fiscal year totaled $10,133.35. The largest of these was five claims amounting to $7,964.05 on file at the end of the licensing year against Frank Parave and Son, Inc. of Malaga.

Another dealer, Anthony Munafo of Anthony Munafo and Son, Glassboro, filed a petition in bankruptcy on January 29, 1952. Two claims amounting to $887.70 were filed against this dealer.

PRODUCE DEALERS LICENSED AND BONDED
May 1, 1951 to April 30, 1952

| County | | Licenses Issued | Bonds Filed | Amount of Bonds |
|---|---|---|---|---|
| Atlantic | | 49 | 49 | $147,000 |
| Burlington | | 4 | 4 | 12,000 |
| Camden | | 7 | 7 | 21,000 |
| Cumberland | | 56 | 56 | 168,000 |
| Essex | | 33 | 38 | 114,000 |
| Gloucester | | 35 | 35 | 105,000 |
| Hunterdon | | 1 | 1 | 3,000 |
| Mercer | | 17 | 17 | 51,000 |
| Middlesex | | 9 | 9 | 27,000 |
| Monmouth | | 25 | 25 | 75,000 |
| Passaic | | 7 | 7 | 21,000 |
| Salem | | 9 | 9 | 27,000 |
| Somerset | | 2 | 2 | 6,000 |
| Union | | 3 | 3 | 9,000 |
| Warren | | 7 | 7 | 21,000 |
| Out-of-State | | 114 | 114 | 342,000 |
| Totals | 1951-52 | 383 | 383 | $1,149,000 |
| | 1950-51 | 396 | 396 | 1,191,000 |
| | 1949-50 | 401 | 401 | 1,202,000 |
| | 1948-49 | 418 | 418 | 1,261,000 |
| | 1947-48 | 423 | 423 | 1,269,000 |

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## CATTLE DEALERS LICENSING ACT

During the 1951-52 fiscal year, licenses were issued by the Department to 224 dealers, five less than the previous year. This year's total was larger than in 1949-50 and 1948-49, however, when 218 and 219 dealers, respectively, were licensed.

Several licensees are shipping dairy animals into southeastern states which have been active in building up their dairy herds during the past several years. A few dealers now have permanent places of business in the South.

During the year, representatives of the Department visited 26 of the larger auction markets located in the dairying sections of New York, Pennsylvania, Virginia, Maryland and Delaware to determine whether dairy cattle were being brought into New Jersey illegally.

In the survey only one licensee was met purchasing cattle in New York for importation into New Jersey. This dealer had health charts for the 10 animals he bought, which were to be sold on Long Island. Also encountered were three North Jersey dairymen who purchased 10 head of cattle in Greene, N. Y., for transportation by a commercial trucker to their farms in New Jersey.

Further investigations will be made in areas not yet observed before any conclusion is reached as to the number of dairy animals illegally imported.

CATTLE DEALERS LICENSED

July 1, 1951 to June 30, 1952

| County | Licenses Issued |
|---|---|
| Bergen | 1 |
| Burlington | 21 |
| Camden | 5 |
| Cape May | 1 |
| Cumberland | 14 |
| Essex | 5 |
| Gloucester | 5 |
| Hunterdon | 20 |
| Mercer | 10 |
| Middlesex | 3 |
| Monmouth | 15 |
| Morris | 16 |
| Ocean | 6 |
| Passaic | 7 |
| Salem | 21 |
| Somerset | 15 |
| Sussex | 26 |
| Union | 7 |
| Warren | 20 |
| Out-of-State | 6 |
| Total: 1951-52 | 224 |

| | | | |
|---|---|---|---|
| 1947-48 | 232 | 1949-50 | 218 |
| 1948-49 | 219 | 1950-51 | 229 |

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## THE NEW JERSEY JUNIOR BREEDERS' FUND

The outstanding event of the New Jersey Junior Breeders' Fund for the fiscal year 1951-52 was the transfer of funds from the U. S. Department of Agriculture which made available an additional $25,000 to be loaned under the rules and regulations of the Fund. This makes a total of $55,000 available for loans to New Jersey farm boys and girls. The money was provided for this purpose under the terms of an agreement between the U. S. Secretary of Agriculture and the New Jersey Secretary of Agriculture, under the provisions of Public Laws 499 (81st Congress, Chapter 152) second session, and of Chapter 321, New Jersey Laws of 1951. These acts provided for the transfer to New Jersey by the U. S. Department of Agriculture of the former assets of the New Jersey Rural Rehabilitation Corporation.

Borrowers from the Fund will further benefit under an arrangement whereby a larger part of the total assets of this former corporation will be loaned through the Farmers Home Administration to young people with farm training and experience to operate farms of their own, with preference given to former Junior Breeder borrowers. The transfer of funds was made in May 1952 and plans for its use by the Fund had not been completed at the close of the fiscal year.

During the year, the usual procedures were followed with respect to loans. A slight downward trend has occurred since the peak year of 1948-49. As usual, by far the greatest number of loans were for purebred dairy animals. The total outstanding at the close of the year was $23,561.32, of which approximately $21,000 represented purchases of dairy animals. Charges totaling $915 were made against the Calf Emergency Fund because of loss by death or non-breeding of animals.

Subscriptions to the breed journals representing the type of livestock purchased were given to each borrower. In addition, though the generosity of William A. Haffert, subscriptions to *New Jersey Farm and Garden* were given to each borrower.

Awards totaling $660 were made at the Flemington Fair, the Sussex County Farm and Horse Show and in connection with production records presented during Farmers Week.

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## TOTAL AMOUNT LOANED, BY COUNTIES

| County | Loaned 1951-52 | Total Loans Since 1921 |
|---|---|---|
| Atlantic | $ 825.00 | $ 2,924.87 |
| Bergen | ------ | 75.00 |
| Burlington | ------ | 16,748.91 |
| Camden | 125.00 | 676.15 |
| Cape May | 600.00 | 3,027.43 |
| Cumberland | ------ | 8,521.63 |
| Essex | 200.00 | 805.30 |
| Gloucester | 450.00 | 6,399.30 |
| Hudson | ------ | ------ |
| Hunterdon | 1,425.00 | 20,263.21 |
| Mercer | 195.00 | 28,780.95 |
| Middlesex | 2,023.75 | 33,203.59 |
| Monmouth | 495.00 | 21,288.65 |
| Morris | 530.00 | 6,774.00 |
| Ocean | ------ | 2,956.00 |
| Passaic | ------ | 716.25 |
| Salem | 525.00 | 28,930.44 |
| Somerset | 1,265.00 | 16,094.20 |
| Sussex | 5,668.40 | 39,895.07 |
| Union | ------ | ------ |
| Warren | 2,335.00 | 22,634.58 |
| Totals | $16,662.15 | $260,715.53 |

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## LIVESTOCK LOANS MADE ANNUALLY SINCE THE ESTABLISHMENT OF THE JUNIOR BREEDERS FUND

| Fiscal Year | Dairy Loans No. | Dairy Loans Amount | Beef Cattle No. | Beef Cattle Amount | Pig Loans No. | Pig Loans Amount | Poultry Loans No. | Poultry Loans Amount | Lamb Loans No. | Lamb Loans Amount | Total Livestock Loans No. | Total Livestock Loans Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1920-21 | 30 | $ 2,815.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 30 | $ 2,815.00 |
| 1921-22 | 92 | 7,985.00 | ..... | ..... | 16 | $ 1,074.98 | 16 | $ 824.25 | ..... | ..... | 124 | 9,884.23 |
| 1922-23 | 81 | 6,365.00 | ..... | ..... | 21 | 1,267.25 | 13 | 636.25 | ..... | ..... | 115 | 8,268.50 |
| 1923-24 | 96 | 8,670.00 | ..... | ..... | 10 | 409.50 | 14 | 932.00 | ..... | ..... | 120 | 10,011.50 |
| 1924-25 | 81 | 7,065.00 | ..... | ..... | 26 | 1,320.00 | 17 | 1,183.50 | ..... | ..... | 124 | 9,568.50 |
| 1925-26 | 71 | 6,639.50 | ..... | ..... | 25 | 1,684.30 | 32 | 1,563.10 | ..... | ..... | 128 | 9,886.90 |
| 1926-27 | 83 | 7,444.00 | ..... | ..... | 19 | 1,240.00 | 28 | 1,112.50 | ..... | ..... | 130 | 9,796.50 |
| 1927-28 | 54 | 4,644.00 | ..... | ..... | 10 | 620.00 | 31 | 890.70 | ..... | ..... | 95 | 6,154.70 |
| 1928-29 | 55 | 4,960.00 | ..... | ..... | 13 | 805.00 | 15 | 680.65 | ..... | ..... | 83 | 6,445.65 |
| 1929-30 | 37 | 3,317.50 | ..... | ..... | 15 | 876.00 | 17 | 692.20 | ..... | ..... | 69 | 4,885.70 |
| 1930-31 | 38 | 3,467.50 | ..... | ..... | 12 | 769.00 | 7 | 308.00 | ..... | ..... | 57 | 4,544.50 |
| 1931-32 | 38 | 2,875.00 | ..... | ..... | 8 | 415.00 | 9 | 394.00 | ..... | ..... | 55 | 3,684.00 |
| 1932-33 | 24 | 1,820.00 | ..... | ..... | 10 | 426.75 | 8 | 323.00 | ..... | ..... | 42 | 2,569.75 |
| 1933-34 | 30 | 2,310.00 | ..... | ..... | 9 | 295.00 | 24 | 940.43 | ..... | ..... | 63 | 3,545.43 |
| 1934-35 | 46 | 4,169.00 | ..... | ..... | 3 | 110.00 | 23 | 1,174.49 | ..... | ..... | 72 | 5,453.49 |
| 1935-36 | 26 | 2,050.00 | ..... | ..... | 5 | 297.00 | 18 | 797.85 | ..... | ..... | 49 | 3,144.85 |
| 1936-37 | 32 | 2,905.00 | ..... | ..... | 14 | 941.00 | 21 | 894.40 | ..... | ..... | 67 | 4,740.40 |
| 1937-38 | 43 | 4,366.00 | ..... | ..... | 8 | 492.50 | 31 | 1,644.82 | ..... | ..... | 82 | 6,503.32 |
| 1938-39 | 45 | 3,740.00 | 21 | $ 1,050.00 | 28 | 1,377.00 | 32 | 1,399.24 | ..... | ..... | 126 | 7,566.24 |
| 1939-40 | 36 | 3,680.00 | 35 | 2,012.20 | 9 | 303.00 | 49 | 2,213.92 | ..... | ..... | 129 | 8,209.12 |
| 1940-41 | 34 | 2,503.50 | 40 | 2,309.10 | 3 | 110.00 | 34 | 1,321.10 | ..... | ..... | 111 | 6,243.70 |
| 1941-42 | 40 | 3,127.00 | 43 | 2,754.48 | 10 | 295.50 | 24 | 888.88 | ..... | ..... | 117 | 7,065.86 |
| 1942-43 | 24 | 2,095.00 | 39 | 2,654.85 | 1 | 50.00 | 7 | 377.20 | ..... | ..... | 71 | 5,177.05 |
| 1943-44 | 21 | 2,055.00 | 32 | 2,348.77 | 2 | 95.00 | 1 | 36.25 | ..... | ..... | 56 | 4,535.02 |
| 1944-45 | 13 | 1,305.00 | 35 | 2,384.68 | ..... | ..... | ..... | ..... | ..... | ..... | 48 | 3,689.68 |
| 1945-46 | 13 | 1,160.00 | 17 | 1,675.19 | ..... | ..... | ..... | ..... | 14 | $375.28 | 44 | 3,210.47 |
| 1946-47 | 36 | 3,930.00 | 30 | 3,040.20 | ..... | ..... | ..... | ..... | ..... | ..... | 66 | 6,970.20 |
| 1947-48 | 79 | 9,755.00 | 28 | 3,846.40 | 1 | 45.00 | ..... | ..... | ..... | ..... | 108 | 13,646.40 |
| 1948-49 | 151 | 19,570.00 | 33 | 3,746.10 | 1 | 50.00 | 1 | 13.00 | ..... | ..... | 186 | 23,379.10 |
| 1949-50 | 112 | 14,092.50 | 56 | 5,929.15 | 5 | 225.00 | 2 | 180.00 | ..... | ..... | 175 | 20,426.65 |
| 1950-51 | 97 | 11,539.00 | 55 | 6,004.97 | ..... | ..... | 4 | 166.00 | ..... | ..... | 156 | 17,709.97 |
| 1951-52 | 95 | 12,595.00 | 33 | 3,325.00 | ..... | ..... | 3 | 293.75 | 1 | 25.00 | 132 | 16,238.75 |
| Totals | 1,753 | $175,014.50 | 497 | $43,081.09 | 284 | $15,593.78 | 481 | $21,881.48 | 15 | $400.28 | 3,030 | $255,971.13 |

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## AGRICULTURAL LOANS MADE ANNUALLY SINCE THE ESTABLISHMENT OF THE JUNIOR BREEDERS FUND *

| Fiscal Year | Feed Loans | | Crossbred Poultry | | Agricultural Prod. Loans | | Fat Barrow Loans | | Miscellaneous | | Total Agricultural Loans | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Amount | No. | Amount | No. | Amount | No. | Amount | No. | Amount | No. | Amount |
| 1934-35 | 3 | $ 38.38 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 3 | $ 38.38 |
| 1935-36 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1936-37 | 6 | 63.70 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 6 | 63.70 |
| 1937-38 | 14 | 276.24 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 14 | 276.24 |
| 1938-39 | 27 | 451.04 | ----- | ----- | 9 | $128.43 | ----- | ----- | ----- | ----- | 36 | 579.47 |
| 1939-40 | 43 | 728.45 | ----- | ----- | 7 | 199.03 | ----- | ----- | 1 | $8.02 | 51 | 935.55 |
| 1940-41 | 29 | 506.63 | ----- | ----- | 6 | 240.26 | ----- | ----- | ----- | ----- | 35 | 746.89 |
| 1941-42 | 2 | 160.70 | ----- | ----- | 3 | 104.85 | ----- | ----- | ----- | ----- | 5 | 265.55 |
| 1942-43 | ----- | ----- | 2 | $ 72.50 | ----- | ----- | ----- | ----- | ----- | ----- | 2 | 72.50 |
| 1943-44 | ----- | ----- | 1 | 100.00 | ----- | ----- | ----- | ----- | ----- | ----- | 1 | 100.00 |
| 1944-45 | 1 | 21.45 | 1 | 48.00 | ----- | ----- | ----- | ----- | ----- | ----- | 2 | 69.45 |
| 1945-46 | 1 | 27.65 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 | 27.65 |
| 1946-47 | ----- | ----- | ----- | ----- | ----- | ----- | 3 | $134.00 | ----- | ----- | 3 | 134.00 |
| 1947-48 | ----- | ----- | 1 | 25.00 | ----- | ----- | 10 | 388.00 | ----- | ----- | 11 | 413.00 |
| 1948-49 | 3 | 75.00 | ----- | ----- | ----- | ----- | 1 | 75.00 | ----- | ----- | 4 | 150.00 |
| 1949-50 | 8 | 309.63 | ----- | ----- | 1 | 9.89 | 1 | 18.00 | ----- | ----- | 10 | 337.52 |
| 1950-51 | 3 | 68.00 | ----- | ----- | 1 | 43.10 | ----- | ----- | ----- | ----- | 4 | 111.10 |
| 1951-52 | 4 | 296.40 | 2 | 127.00 | ----- | ----- | ----- | ----- | ----- | ----- | 6 | 423.40 |
| Totals | 144 | $3,023.27 | 7 | $372.50 | 27 | $725.61 | 15 | $615.00 | 1 | $8.02 | 194 | $1,744.40 |

* The number of agricultural loans shown represents actual loans made, rather than number of borrowers. In most cases more than one loan was made to a single borrower.

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# *Report of Division of Information*

FRED W. JACKSON, *Director*

During the past fiscal year, activities of the Division of Information have been directed principally toward (1) bringing to the attention of farmers and farm agencies the services and regulatory functions of the State Department of Agriculture; (2) cultivating and maintaining contacts with distributor, trade and consumer groups concerned with the sale and distribution of New Jersey farm products; (3) general public relations aimed at developing and maintaining among New Jersey's urban and suburban population an appreciation and favorable recognition for agriculture; (4) advance, current and follow-up publicity and arrangements concerned with the annual Farmers Week; and (5) editorial services concerned with Department publications.

In carrying out the foregoing objectives, the Division of Information has placed all of its facilities at the service of the press, radio, editors of magazines and house organs, speakers and others in order to secure recognition for New Jersey and New Jersey agriculture. Such activities include almost daily contacts with individuals or organizations throughout the year. The response to these efforts is best measured in the increasing number of requests received by the Division of Information each year for data and statistics on a local or county basis, regulations, biographies, photographs and reports.

Another noticeable trend during the past year was the increased attention which a number of daily and weekly publications devoted to agriculture, largely in the form of regular farm pages or special farm editions. These, no doubt, reflect a recognition of the importance of agriculture and the allied interests which service the farmers. This trend has been especially apparent in areas where the poultry industry has expanded rapidly in recent years. The newspapers and radio stations covering those areas are giving an increasing amount of space and attention to agricultural news, personalities and subject matter.

Acknowledgment should be made of the excellent cooperation which has been extended by the editors and staff members of the New Jersey dailies and weeklies. Without their sustained interest, the Division would be able to reach only a small fraction of the farmers and leaders in allied industries as well as the general public. Likewise, the radio stations through their news and special farm broadcasts have extended their cooperation. Such

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relationships are of real value to the Department as well as to those engaged in agriculture. However, to maintain those relationships requires constant effort to render every possible service.

## EDITORIAL ACTIVITIES

### *News Releases*

During the past fiscal year, 239 news releases were prepared and issued by the Division of Information to approximately 200 newspapers, radio stations and correspondents serving the New York City-Philadelphia-New Jersey area. These releases, with only a few exceptions, are prepared and mailed four or five days in advance. Although no clipping service is available, a regular inspection of 10 to 12 weeklies and four or five dailies indicates that the releases are being used consistently, particularly in the agricultural counties.

As usual, an affort is made to recognize and publicize the important phases of the functions and regulations of the Department of Agriculture. However, it is obvious from the following listing that announcements and releases concerning the Division of Markets and Farmers Week account for the greatest number, due largely to the subject matter and the current interest in food by the public. Classified according to subject matter and the divisions concerned, the releases issued last year included:

| | | |
|---|---|---|
| Administration | | 13 |
| Division of Animal Industry | | 22 |
| Division of Information, | | |
| Farmers Week | | |
| Advance | 11 | |
| Current | 57 | |
| Other | 32 | 100 |
| Division of Markets, | | |
| Truck Crop News | 24 | |
| Other | 23 | 47 |
| Division of Plant Industry | | 13 |
| Office of Milk Industry | | 20 |
| Miscellaneous | | 24 |
| Total | | 239 |

The following table shows a comparison of the number of releases issued during the past three fiscal years:

| | 1951-52 | 1950-51 | 1949-50 |
|---|---|---|---|
| Administration | 13 | 13 | 12 |
| Division of Animal Industry | 22 | 12 | 17 |
| Division of Information | 100 | 102 | 90 |
| Division of Markets | 47 | 48 | 54 |
| Division of Plant Industry | 13 | 21 | 35 |
| Office of Milk Industry | 20 | 21 | 25 |
| Miscellaneous | 24 | 32 | 34 |
| Totals | 239 | 249 | 267 |

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### *Special Reports*

One of the most difficult problems facing this office during the past year was that of getting into circulation authentic data on the controversial milk price situation. New Jersey producers for years have enjoyed a higher percentage of Class I milk returns than prevail in neighboring states. These figures have been compiled by the Office of Milk Industry on the basis of State-wide averages and have been released to the press through this office.

Representatives of one of the producer organizations insisted that the figures were not correct and intimated that they should not be published. Obviously, any withholding of such reports or official information would bring about protests, a lack of confidence and loss of good will on the part of the press and others who look to the Division of Information for such data.

Unfortunately, it was necessary to take a stand on the issue contrary to the wishes of the producer group. The reporting and information service was continued and a special series of more complete reports was made available to the editors in all of the dairy areas. Most of them appreciated receiving the more complete data and commended the service. The reports are being continued and used regularly in most of the weeklies as well as a number of dailies.

### *Photographs*

Each year there is an increase in demand for photographs as editors devote more space to pictorial copy. The lack of sufficient funds has made the servicing of all these requests impossible, particularly those seeking subjects for illustrations in color for both newspapers and magazines. During the past year about 300 glossy prints and eight sets of mats were distributed.

### *Farm Magazines*

Special acknowledgment should be made of the continued cooperation of the editors and staff of *New Jersey Farm and Garden* throughout the entire year and, in particular, for the special issue published each January to promote the annual Farmers Week meetings. The editorial page in each issue of *New Jersey Farm and Garden* is made available to the Secretary of Agriculture, providing an excellent means for reaching the 25,000 readers, an almost complete cross section of New Jersey agriculture. A review of 1,500 to 2,000 words on current farm topics also is prepared each month by the Division of Information for the same publication. Excellent cooperation also has been extended by the *Pennsylvania Farmer*, *American Agriculturist*, and *Rural New Yorker*, as well as the editors of news letters and house organs issued by farm commodity groups.

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## DEPARTMENT PUBLICATIONS AND CIRCULARS

All publications and circulars prepared by members of the Department staff are edited, prepared for printing and proofread in this Division. Last year most of the publications were routine reports. They included:

Booklet— Official Grades for Raw and Pasteurized Milk and Cream.
Leaflet— Brucellosis Control Program.
Report— Thirty-fifth Annual Report of the New Jersey State Department of Agriculture—July 1, 1949-June 30, 1950.
Circular No. 379—Manual for Milk Testers in New Jersey. (Multilithed in the Department.)
Circular No. 382—Marketing Green Asparagus for Processing by Grades in New Jersey.
Circular No. 333—Marketing Fresh Eggs in New Jersey. (2nd revision)
Circular No. 383—Licensed Dealers Under the Milk Dealers' Licensing and Bonding Act, Produce Dealers' Licensing and Bonding Act and Cattle Dealers Licensing Act.
Circular No. 384—Rosy Canker of London Plane Associated with Illuminating-Gas Injury.
Circular No. 385—Facts and Figures—Annual Potato Summary—Crop of 1951.
Circular No. 387—The Treatment of American Foul Brood.
Binding— 12 issues of *New Jersey Farm and Garden*, for calendar year 1951.
*Farm Service News*— Six issues—July, September, November 1951; January, March, May 1952.

As of June 30, 1952, the following have been edited but delivery has not been completed by the printers:

Circular No. 386—Laws, Rules and Regulations Governing the Shipment of Nursery Stock Out of New Jersey.
Report— Thirty-sixth Annual Report of the New Jersey State Department of Agriculture—July 1, 1950-June 30, 1951.

*Note:*

Circular No. 378—New Jersey—The Garden State. Manuscript has not been submitted to the printer.

Other publications edited and issued prior to or during the 1952 Farmers Week are as follows:

1952 Farmers Week Program
Flyers—Vocational Agriculture Rally
New Jersey Council of Churches
National Catholic Rural Life Conference
Livestock and Crops
Women's Program—1952 Farmers Week
Highlights of Your Convention
Citations for Distinguished Service to New Jersey Agriculture, 1952.
*Chaff*—Two issues—one for Monday and Tuesday, the other for Wednesday during Farmers Week
Eight sets of mats were issued to a selected list of about 40 newspapers.

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*Farm Service News* was continued with issues in July, September and November 1951, and January, March and May, 1952. This publication serves as a direct medium for reaching about 20,000 farm and rural readers within the State. As usual, the March issue was devoted exclusively to the annual listing of the hatcheries and breeders whose baby chicks and breeding stock have qualified under the NJ-US Poultry Improvement program, thus eliminating the cost of publishing such a listing in a separate circular.

## FARMERS WEEK PUBLICITY

One of the major activities of the Division from October to January is concerned with the arrangements and the advance and current publicity related to Farmers Week. Extended now to include seven days of meetings, Farmers Week has become the major event of New Jersey agriculture in which more than 40 farm and commodity groups participate and attendance has grown each year. Acknowledgment is made of the excellent cooperation of *New Jersey Farm and Garden* as well as of other press and radio editors who render effective aid in promoting Farmers Week. Each year the editorial staff of the Agricultural Extension Service of Rutgers University, a number of farm publications, and most of the radio farm editors render valuable assistance in handling the publicity during Farmers Week.

## FARM PRODUCTS PROMOTION

During the past fiscal year the agricultural activities of the former New Jersey Council, now organized as the State Promotion Section, a unit of the Department of Conservation and Economic Development, again were serviced on a cooperative basis through the Division of Information. The Division served in a liaison capacity with the participating agricultural commodity groups. This arrangement, in effect since 1938, has proved to be satisfactory to the State agencies concerned as well as to the cooperating farm organizations.

The allotment for agriculture was divided among six projects. Although the allotments were supplemented by funds from each of the cooperating commodity groups, the activities of each necessarily were curtailed because of the limited funds available.

As during the previous year, an effort was made to compensate for the lack of advertising space by making the most of every opportunity to provide editors with copy and photographs for use in reader column space. Considerable success was achieved in enlisting the cooperation of other agencies, the trade and the utilities by getting them to mention New Jersey products

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in their advertisements and releases and to use them as much as possible in their demonstrations.

Acknowledgment again should be made of the cooperation of the members of the home economics staffs of all four of the principal utilities. These include about 40 home economic specialists who are responsible for a large number of meetings and demonstrations on food subjects scheduled throughout the year. Consequently, there are many opportunities when New Jersey farm products can be featured or included in recipes, thus presenting them directly to thousands of food-minded housewives. Two of the utilities again prepared consumer leaflets on New Jersey products at their own expense. One utility concern continued the sponsorship of a series of general institutional advertisements emphasizing the availability of local products and illustrated with photographs made on New Jersey farms.

Brief outlines of the projects carried on cooperatively with the farm commodity groups during 1951-52 follow:

### *Cooperative Marketing Associations in New Jersey, Inc.*

A considerable volume of New Jersey-grown fruits and vegetables is marketed through the 10 cooperative produce auction markets which are organized in a State-wide cooperative. This organization sponsored a series of advertisements which appeared in *The New York Packer* and *The Produce News*, the two principal publications circulating among the produce trade. There were six insertions in each of these publications, running in April, May and June. The layout included a map of New Jersey showing the locations of the produce auction markets; the copy consisted of a list of crops in season, which was revised for each insertion. During the 1951 season, more than 1,200 different buyers from 13 states and Canada purchased New Jersey products at the auctions. The auctions furnish an outlet for a considerable volume of New Jersey produce, and also establish a price level for many other transactions and so are beneficial in maintaining food markets.

### *Blueberry Cooperative Association*

This group, which marketed a large crop of cultivated blueberries under the *Tru-Blu* label, operates through a well planned sales program. The value of the State's cultivated blueberry crop now exceeds that of cranberries or any other small fruit. The association also carries on a consistent advertising and publicity program toward which a small allotment of State funds met the cost of 770 locations for posters on the platforms of the New York Subway, the Hudson and Manhattan Railroad and at the stations and terminals of several commuter railroads.

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*New Jersey Field Crop Improvement Cooperative Association*

This organization produces and sells certified field crop seeds, which are of special importance to New Jersey dairymen and poultrymen who produce home-grown feeds. The New Jersey hybrid varieties of corn have been featured in the series of cooperative advertisements with some mention of soybeans, wheat, oats and barley in season. The advertisements, now on a full year basis, again were carried in 10 issues of *New Jersey Farm and Garden* and nine issues of *The Moos.*

*New Jersey Peach Industry Committee*

This State-wide organization continued last year with its promotional activities to call attention to the new varieties of New Jersey peaches now available. Less emphasis has been placed on the home canning of peaches because it appears that the practice no longer represents an important outlet for the New Jersey crop.

As usual, the campaign was conducted with the cooperation of food editors, radio commentators, representatives of the wholesale and retail trade and others concerned with the promotion of food products. A review of the season's prospects was prepared and gift boxes of peaches and cultivated blueberries were distributed. There was an excellent response in terms of newspaper reader column space, editorial mention and radio time.

*New Jersey Potato Industry Committee*

During July, August and September, a series of seven advertisements was sponsored in cooperation with the New Jersey Potato Industry Committee in *The Produce News* and *The New York Packer.* Included on the same pages were advertisements of most of the New Jersey dealers who were officially designated to handle potatoes. A *Report to the Growers* on the campaign was prepared for distribution among the dealers and producers who contributed to the advertising fund.

*New Jersey Apple Institute*

New Jersey growers experienced little serious difficulty in moving the main season varieties of apples, so most of the promotional effort was concentrated again on the summer varieties. Consequently, a series of releases, photographs and recipes was issued illustrating how the Starr, Twenty Ounce and Wealthy varieties could be used by consumers. In addition, a woman publicity agent in New York City was retained on a cooperative and part-time basis to handle relations with the food page editors of newspapers and magazines, radio food editors and the utilities representatives. Gift packages of Stayman apples were sent to the editors in January and Rome

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Beautys in March. A conference, visits to two orchards and a dinner were scheduled in Monmouth County with about 60 food editors and guests attending, most of them making the trip in a special bus. As usual, the response in terms of publicity has been excellent throughout the year and aided materially in moving the crop. A series of announcements scheduled on the Alfred McCann Food Hour on WOR proved effective in moving late holdings of Rome Beauty.

## PUBLIC RELATIONS

As in previous years, the Division of Information has endeavored to further understanding and good will between the farm and non-agricultural interests which dominate the life and economy of New Jersey. Such activities are conducted in a number of fields, mostly at the request of interested groups.

During the past year, one of the important problems facing New Jersey farmers and rural residents has been the relocation and the development of industries in rural areas. This trend, and that concerned with the development of the New Jersey Turnpike, have brought about many changes in rural living and relationships. The sudden impact of new neighbors in the form of new residents and industrial plants made it necessary for many communities to make prompt adjustments and to give studied consideration to new problems. Through the Industrial Development Committee of the New Jersey State Chamber of Commerce and the South Jersey Development Commission, considerable time was devoted to attending conferences, preparing releases and compiling data for revised planning and zoning to meet the new conditions.

On a similar basis, the director continues to serve as secretary of the Farm Electrification Council of New Jersey, a program which originated in the Department of Agriculture in 1928. The Council has sponsored an active educational program during the past year devoted to more efficient use of electricity on New Jersey farms now that the project of extending electrical service is practically completed. Monthly mailings of articles on types and uses of electrical equipment have been prepared for extension workers and teachers of vocational agriculture. A conference and forum attended by the county agricultural agents launched a new program on the use of electricity in meeting the farm labor shortage.

Another similar assignment for the director is that of serving as secretary of the Committee on Agriculture of the New Jersey State Chamber of Commerce. That activity consists largely of arranging for and conducting

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the farm-industrial tours scheduled by the Committee. These tours have been held annually since 1938 and have helped to develop excellent relations between business and agriculture in New Jersey. The 1951 tour held in August visited four farms in Middlesex and Mercer counties and set a new record of attendance. Probably in few states does one find the intimate relations which exist in New Jersey between industry, commerce and agriculture.

Other activities have included the preparation of special articles, most of them with photographs, for the *Newark Sunday News, Washington Star,* the *Dairymen's League News, American Agriculturist, New Jersey Counties* and *New Jersey Municipalities.* Cooperation has been extended frequently to feature writers and members of the Associated Press staff in preparing special articles on agriculture.

In response to a request from an over-all dairy industry group, a publicity program was prepared and carried through for a special New Jersey June Dairy Month Committee. To further advance the interests of the industry, the committee has been made permanent to serve on a year-round basis.

A similar request was received from the officers of the New Jersey Aberdeen Angus Association to aid that group in publicizing the organization and promoting the breed in New Jersey. A general program was prepared, which is being followed by the association.

Two conferences and field trips were arranged at the request of the Curtis Publishing Company to provide an opportunity for representatives of the editorial staff, the advertising agency, manufacturers of biologicals for poultry, New Jersey distributors and a number of practical poultrymen to discuss poultry nutrition and disease problems.

Exhibits and samples of New Jersey farm products were furnished for the Northeastern Institute at Yale University, the National Association of Purchasing Agents and the American Home Economics Association at Atlantic City, and the American Hotel Association and Annual Home Furnishing Show in New York City.

The New Jersey office of the Bureau of Agricultural Economics of the U. S. Department of Agriculture has cooperated in furnishing considerable statistical data on New Jersey agriculture, which has been used extensively as subject matter for news releases and to answer inquiries. One such release is the annual chart showing the value of agricultural products classified according to commodity groups.

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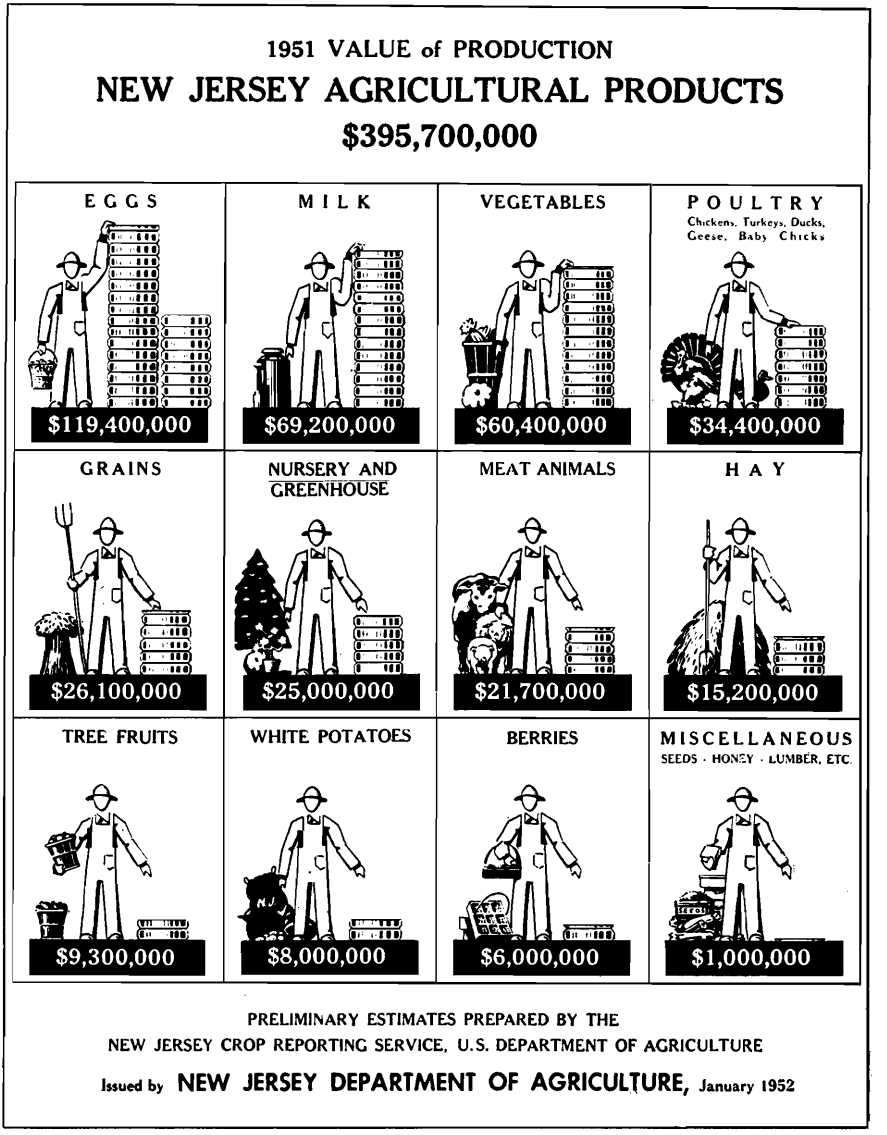


Other activities included publicity projects associated with the New Jersey Vegetable Queen, New Jersey Agricultural Society, New Jersey Canners Association, New Jersey 4-H Baby Beef Show and Sale and the New Jersey Veterinary Medical Society.

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# *Report of the Division of Animal Industry*

DR. R. A. HENDERSHOTT, *Director*

## REVIEW OF THE YEAR'S ACTIVITIES

### *Anthrax*

During the year, the Division was called upon to cope with 22 single cases of anthrax scattered throughout the State and one rather involved outbreak in Burlington County, traceable to one farm.

Dr. J. M. Herron, a private practitioner in Bordentown, was called in to treat an animal on the Hamilton Brothers Farm, R. D., Bordentown. One heifer had died and a second was near death. He treated the second heifer and brought a small tip of the ear of the dead animal to the Division laboratory to test for anthrax, but no pathogenic organisms were found in the specimen submitted.

On June 28, Hamilton Brothers found a cow dead in the pasture, which was immediately removed by Albert E. Kingett of Lindenwald. On July 27, Dr. Herron was again called to the Hamilton farm to treat a sick cow. Upon examination, he thought the animal was affected with some digestive disturbance for which he treated her, but a few hours later she died and was removed.

On August 3, Hamilton Brothers sold their entire herd of 35 animals to Reuben Greenberg, a cattle dealer of Columbus. The herd was brought to the Greenberg farm and allowed to run with 135 head of stock. The following morning, two heifers were down in the pasture. These were bled out and the carcasses sent to Mario Gervasoni's slaughtering establishment in Bordentown. They were later traced by Dr. Herron, who condemned the carcasses and supervised their burning and the cleaning and disinfecting of the Gervasoni premises.

The same day, 16 animals—13 of them from Hamilton Farm—were delivered to Brown Brothers of Vincentown, who are engaged in cattle dealing and slaughterhouse operations. Brown Brothers reported that on delivery to their farm, two of the heifers which seemed to be sick were bled out and dressed for human consumption.

On Sunday, August 5, three of the Hamilton Farm animals were found dead on the Greenberg farm. One heifer out of the Hamilton lot sold to

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Brown Brothers was also dead. After investigating, Dr. Herron suspected anthrax. Specimens were brought to the Division laboratory on August 6 and a tentative diagnosis of anthrax was made and later confirmed. When the nature of the disease was established, all Hamilton Farm animals then on the Brown and Greenberg premises were ordered back to the Hamilton farm and a quarantine on the movement of animals and animal products was placed on the three farms and the Kingett rendering plant which had received some of the carcasses.

All surviving cattle on the three farms were injected with anthrax bacterin and the areas thoroughly cleaned and disinfected under the supervision of a Division of Animal Industry representative. The milk produced on quarantined farms was formalin treated and dumped, and hides of the dead animals still at the Kingett plant were sterilized under the direction of the State Department of Health.

On August 8, the herd of 118 cattle at Brown Brothers was vaccinated, as well as 23 head on the Hamilton farm. On August 9, one animal was found dead in pasture on the Hamilton farm. That same day, the Burlington County Cooperative Farmers Association requested an inspection of a veal carcass which had been received on August 6 from Howard Potts of Bordentown. The animal had been injured, dressed out on the farm and the carcass presented for deep freezing. The liver and heart were brought to the laboratory for examination and a diagnosis of anthrax made. The Department of Health was notified of this condition, Potts was immediately contacted and a quarantine placed on the hide of the slaughtered calf.

On August 11, the laboratory examination and tests confirmed the diagnosis of anthrax and the Potts premises were quarantined. The contents of two freezing rooms in which the carcass had been hung at the Burlington County Farmers Cooperative Association was destroyed.

Sufficient anthrax bacterin was obtained from Sharp and Dohme, Philadelphia, to immunize 2,300 cattle, 47 horses, 16 hogs and 2 goats maintained on farms surrounding the Potts' premises. Arrangements were made to burn infected pastures.

On August 14, another heifer died on the Brown farm. The barns, yards, trucks and milking utensils on all infected farms were adequately cleaned and sterilized. Pastures inhabited by infected animals on all but Hamilton Farms were burned over. The barns, yards and utensils at Hamilton Farms were cleaned and disinfected under supervision.

The Potts premises were released from quarantine on August 16. The quarantine remained in effect on the Greenberg premises until August 28,

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when a release was given with the provision that animals treated with spore vaccine could not be sold for any purpose until September 18, 1951. After that time, all cattle imported onto the farm would have to be treated with anthrax bacterin. Brown Brothers premises were released from quarantine on August 31, under the same conditions. The quarantine on the Hamilton farm was lifted on September 28, when the Division felt that a satisfactory cleaning and disinfection job had been done.

An interesting sideline to the story is the case of malignant carbuncle or human anthrax which developed on the Potts farm. Potts' son had dressed a suspicious calf carcass on August 6. Later within the week, he developed blisters on his hands and arms which became angry ulcers. He was visibly sick, with a temperature of 102.5° and was reported by Dr. Oscar Sussman of the State Department of Health, as possible skin anthrax. This tentative diagnosis was confirmed by two consulting physicians. Under treatment with massive doses of penicillin, the case of skin anthrax responded favorably.

The recommendation was made to all owners of infected herds that animals sold for dairy purposes from their herds should be prophylactically immunized before sale to protect the purchaser of these animals and to prevent further dissemination of the disease.

During the course of the anthrax outbreak in Burlington County, it developed that under a ruling of the State Department of Health, animals immunized with spore vaccine could not be sold for any purpose until six weeks following the date of the administration of the vaccine and during a 21-day period, milk from such animals could not be used for human consumption.

Several years ago there was a serious outbreak of anthrax in the Salem County area when the Delaware River overflowed and inundated farms, leaving a residue of refuse from tanneries located on the Pennsylvania side of the river north of Philadelphia. At the time of that outbreak, all exposed animals in the area were treated with Number Two spore vaccine. Since that time, all susceptible animals in the area whose owners applied to this Division or to the county agricultural agent have been treated annually with the Number Two spore vaccine. There have been no cases of anthrax nor any evidence that the consumption of milk from vaccinated cows has proven to be a menace to human health.

The outbreak of anthrax in Burlington County was not four separate cases but the result of a single case; the movement of animals from one in-

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fected herd caused the further spread of the disease. These movements were made prior to the time that a diagnosis was made.

Following the release of quarantines from the infected farms, the disease subsided and no further reports or positive diagnoses were made until January 13, 1952 when Dr. Harold Summers of Mount Holly reported the sudden death of an Angus heifer on the farm of Col. George Walton of Medford. The animal presented lesions of anthrax. Specimens submitted to the laboratory were examined and a diagnosis of anthrax made.

This farm is 10 miles distant from the southern-most case of anthrax which had occurred in September 1951. There were no streams traversing the farm which could have carried infection from the premises previously infected. On the farm were 60 hogs and 40 cattle; only gilts, which do not run with the cattle, had been introduced recently to the premises. All cattle and swine were treated with anthrax bacterin.

One additional animal, treated with penicillin by Dr. Summers, died. The carcasses of the dead animals were destroyed and the farm thoroughly cleaned and disinfected. Temperatures of all animals were taken and any rise reported to the Division. All employees were instructed on precautionary measures to take to protect themselves and to prevent spread of the infection. On January 15 three animals showed a rise in temperature and were immediately treated with antibiotics. They returned to normal and no further losses occurred.

On Saturday, February 2, Dr. T. E. Lisowski of Washington reported a suspicious condition on the Pleasantgrove Fur Farm owned by Joseph and Edward Nowacki, Port Murray. About 750 mink were maintained on the farm. The owners collect dead animals from farms in the area to provide meat to feed to their mink. The offal from such animals is fed to swine on the farm.

Practically all of the swine gave clinical evidence of anthrax. Dr. Lisowski held a post mortem on several pigs and dead mink, the latter revealing the typical dark, swollen spleens. All signs pointed to anthrax, and laboratory tests confirmed this diagnosis.

Instructions on cleaning and disinfecting everything on the premises were given. All farms adjacent to the Nowacki farm, as well as those abutting a stream which emanated on the fur farm, were contacted and all of the livestock on these farms was treated with anthrax bacterin.

On the Nowacki farm, 5 registered and 33 grade swine were appraised for a total of $1,070 and State indemnity of $535 paid on February 21.

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The appraisal of these animals and payment of indemnity was made in accordance with Title 4, Chapter 5, Article 1, Section 9 of the Revised Statutes.

No new cases of anthrax were reported until March 7. The following cases were then reported, specimens collected and diagnoses made and confirmed by either the Lederle Laboratories in Pearl River, New York, or the U. S. Pathological Laboratories in Washington, D. C.:

| | | | Animals On Premises | Affected |
|---|---|---|---|---|
| March | 7 | R. Snook, Sussex. | 65 | 1 |
| | 12 | Clifford Conover, Hightstown. | 330 | 1 |
| | 13 | R. A. Armstrong, Columbus. | 139 | 2 |
| | 15 | N. J. Agricultural Experiment Station, Sussex. | 232 | 1 |
| | 24 | N. J. Agricultural Experiment Station, New Brunswick | 140 | 1 |
| April | 6 | John Wagner, Lambertville. | 20 | 1 |
| | 5 | Jacob Krotje, R.D., Lafayette. | 33 | 1 |
| | 9 | Harold Wainwright, Bordentown. | 104 | 1 |
| | 10 | Robert McCarthy, Freehold. | 54 | 1 |
| | 10 | John Hunt, R.D., Augusta. | 48 | 1 |
| | 11 | George Durie, Washington. | 32 | 1 |
| | 11 | Marcus Utter, Lafayette. | 43 | 1 |
| | 11 | Russell Hendershott, R.D., Newton. | 64 | 1 |
| May | 1 | Thomas S. Dyer, R.D. 2, Sussex. | 41 | 1 |
| | 9 | Freda Von Lintig, Bordentown. | 73 | 1 |
| | 27 | Ralph Lomerson, Glen Gardner. | 15 | 1 |

These were all natural cases of anthrax. In each case, affected animals were burned or buried and premises thoroughly cleaned and disinfected. All animals on the farms were immunized by Division representatives with Sharp and Dohme anthrax bacterin. No further cases were reported.

On each of the farms where anthrax was diagnosed, as well as on adjacent farms or those through which a stream might pass after leaving an infected farm, all animals were injected with anthrax bacterin. In this immunization program, the Division used Sharp and Dohme bacterin. However, Sharp and Dohme was unable to furnish a sufficient supply and practitioners had to call on other biologic houses.

A number obtained bacterin from Ashe Lockhart, Inc., of Kansas City, Missouri, and on May 17 Dr. John Gray of Newton reported an unusual condition on the McDonald farm where it had been used. The animals exhibited a peculiar swelling in the region of the shoulder and elbow on the side where the anthrax bacterin had been injected a month before.

Additional reports were received from all veterinarians in the Sussex County area. This condition continued to occur until 120 days after the administration of the bacterin furnished by the Kansas City concern.

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The condition was reported to the U. S. Bureau of Animal Industry in Washington, D. C., and it was learned that the same manufacturer's product was thought to be responsible for death losses in herds in Kansas. The Government had ordered that the product be recalled from distributing stations. Samples of the bacterin were tested by the Federal Bureau of Animal Industry in Washington.

It is important to note that anthrax is generally a soil-contaminating pathogen and as a consequence, practically all former cases have occurred during the grazing season, usually during late summer and fall when the pastures were short, either from lack of rainfall or overgrazing.

This year, with the exception of the case on the Hamilton Brothers farm, all sporadic infections occurred in animals that were either stall or barn fed. For example, the animal that died on the Conover Farm was a test cow that had been confined to the test barn box stall for several months prior to its death from anthrax. Apparently the infective organism was carried to this animal. Samples of hay and grain from all infected farms were examined, but the anthrax organism could not be isolated.

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## NATURAL CASES OF ANTHRAX DISCLOSED AND CONFIRMED

July 1, 1951 to June 30, 1952

| | Farms | Animals Affected | | | | Animals Lost | | | | Results of Examination of Specimens in Laboratory | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Positive | | | | Negative | | |
| | Involved | Cows | Swine | Horses | Mink | Cows | Swine | Horses | Mink | Cows | Swine | Horses | Mink | Cows | Swine | Horses |
| gton | 8 | 14 | | | | 14 | | | | 14 | | | | | | |
| rdon | 2 | 2 | | | | 2 | | | | 2 | | | | | | |
| r | 1 | 1 | | | | 1 | | | | 1 | | | | | | |
| esex | 1 | 1 | | | | 1 | | | | 1 | | | | | | |
| outh | 1 | 1 | | | | 1 | | | | 1 | | | | | | |
| s | 1 | | 6 | | 11 | | 6 | | 11 | | 1 | | 1 | | | |
| x | 7 | 7 | | | | 7 | | | | 7 | | | | | | |
| n | 1 | 1 | | | | 1 | | | | 1 | | | | | | |
| e | 22 | 27 | 6 | | 11 | 27 | 6 | | 11 | 27 | 1 | | 1 | | | |

## POST VACCINAL CASES OF ANTHRAX CONFIRMED IN THE DIVISION LABORATORY

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| s | 2 | 8 | | | | 8 | | | | 5 | | | | 2 | | |
| x | 15 | 59 | | 5 | | 16 | | 3 | | 13 | | 2 | | 1 | | 1 |
| e | 17 | 67 | | 5 | | 24 | | 3 | | 18 | | 2 | | 3 | | 1 |

## POST VACCINAL CASES OF ANTHRAX REPORTED BY PRIVATE PRACTITIONERS — NO SPECIMENS SUBMITTED FOR EXAMINATION

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | 58 | 209 | | 3 | | 11 | | 1 | | | | | | | | |
| n | 1 | 1 | | | | 1 | | | | | | | | | | |
| e | 59 | 210 | | 3 | | 12 | | 1 | | | | | | | | |

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SPECIMENS RECEIVED—NEGATIVE ANTHRAX
July 1, 1951 to June 30, 1952

| County | Specimens from Cows | Horses | Sheep | Swine | Deer |
|---|---|---|---|---|---|
| Burlington | 7 | | | 1 | |
| Camden | 1 | | | | |
| Essex | | | 1 | | |
| Gloucester | 1 | | | 2 | |
| Hunterdon | 2 | | | | |
| Middlesex | 1 | | | | |
| Monmouth | 4 | | | | |
| Morris | 2 | | | | |
| Salem | 3 | | | | |
| Somerset | 3 | | | | |
| Sussex | 16 | 1 | | 2 | 1 |
| Warren | 4 | | 1 | | |
| State | 44 | 1 | 2 | 5 | 1 |

During March, the annual vaccination of livestock in the Salem County area was conducted and the following animals were immunized: 1,145 cattle on 45 premises, 8 horses on 5 premises, 3 mules on 2 premises and 1 goat.

Last year only 746 cattle on 38 premises and 14 horses on 8 premises were immunized. Because of the outbreaks of anthrax throughout the State, farmers became more cautious and insisted that their livestock be immunized this year. There has not been a case of anthrax in Salem County since the spring immunization has been carried out.

## MISCELLANEOUS ANIMAL DISEASES

### *Suspected Listerellosis*

In July 1951, Robert P. Hoser of Washington, owner of a dairy and sheep farm, reported that he was losing sheep and wanted assistance from the Division. Agents of the Division, together with Dr. Ralph Little, visited the farm and found one ewe affected; three had died previously.

The animal was in a semi-comatose condition and was able to travel, but its gait was incoordinated. There were no lesions around the mouth or muzzle. No definite diagnosis was made, but listerellosis and toxic weed poisoning were suspected. The owner was instructed to destroy the animal if it appeared to be getting worse, and send head, stomach, spleen, liver and a portion of the intestines to the Division laboratory for examination. However, no specimens were delivered to the laboratory.

### *Black Leg*

In January, Dr. Gray reported a case of suspected black leg in a Holstein heifer five months old owned by J. H. Vough of Blairstown. Dr. Gray had prescribed for the animal, which was lame in the right front quarter,

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but examination revealed nothing abnormal or unusual. During February, Dr. Gray learned that the heifer had died the day after his visit. From the description given by the owner, Dr. Gray was led to believe that the animal had died of black leg. He immediately vaccinated the entire herd for black leg as a preventive measure.

### *Foot and Mouth Disease*

On Monday, February 25, the Federal Bureau of Animal Industry reported an outbreak of foot and mouth disease in Saskatchewan, Canada. Two loads of Canadian purebred cattle had crossed the border three days previous at Buffalo and were in quarantine at the farm of Henry Francisco and Son, Andover. Francisco was advised not to move any animals from his premises until the cattle received from Canada had been in the State one week and had been examined by Division agents for symptoms of foot and mouth disease. After examination, the animals were released on February 29.

Veterinarians in the State were notified of the outbreak in Canada and requested to report immediately any suspicious symptoms, such as sore feet and mouths or salivation, in any cloven footed animal. The quarantine on Canadian cattle remained in effect throughout the balance of the fiscal year.

### *Scabies*

During the year, seven cases of scabies in animals in Sussex County were reported by Dr. R. A. Wilson. Treatment procedure was outlined to local veterinarians.

In March, the Federal Inspector in Newark notified the Division that one animal sold through the Arbree Commission Company on autopsy revealed scabies. The Division agent visited the owner, Sidney Mianowski of Bloomfield, and reported that the affected animal had recently been purchased from a dealer and was sent to slaughter when it became unhealthy. The remaining animals in the herd were healthy and no further evidence of scabies could be found. The owner was advised to use caution in the purchase of animals and to be sure that they were tested and free of tuberculosis and brucellosis and healthy in other respects.

### *Encephalomyelitis*

Only one case of encephalomyelitis was reported during the fiscal year in a horse in Atlantic County. Protective immunization of 9 horses in Cumberland County and 57 in Cape May County was reported by private prac-

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titioners. Because active infection was not encountered, interest in protective immunization was lacking this year.

### *Vesicular Exanthema*

For the past 20 years, this disease has occurred sporadically in California. During May and June, Wright Hog Farms of Cheyenne, Wyoming, fed garbage from a transcontinental railroad diner together with garbage from the vicinity of Cheyenne. On June 6, Norden Laboratories in Grand Island, Nebraska, received a shipment of hogs from the Wright Farms which revealed vesicular exanthema on June 16. The swine were quarantined. On June 17, hogs were shipped to Omaha Yards from another Norden Farm not under quarantine. Seventy-three head were sent in, 18 of which were sent with 44 hogs from other farms to Fremont, Nebraska. Because of the situation at the Wright Farms, further movement of hogs from Cheyenne was stopped. Nebraska issued a quarantine on the infected premises on June 19.

On June 24, a shipment of hogs from Omaha arrived in Stockton, California showing lesions of vesicular disease. This shipment was traced back to Omaha Yards. On June 26, a shipment arrived in Modesto, California, from Omaha via Laramie, Wyoming; Ogden, Utah and Sparks, Nevada. This lot exhibited 10 to 12-day-old lesions. All yards were cleaned and disinfected.

A shipment to New Jersey from Fremont, Nebraska, arrived on June 29 and was unloaded at Secaucus at 9:00 a.m. Word of the shipment was received at the Trenton Federal office at 8:00 p.m. On June 30, Federal inspectors investigated and found 20 per cent of the hogs showing lameness and coronary band vesicles. The State immediately quarantined the shipment.

This was the beginning of an outbreak of vesicular exanthema in New Jersey, a detailed account of which will appear in the report for the fiscal year 1952-53.

## LIVESTOCK AUCTION MARKETS

Livestock auction markets present great opportunities for the dissemination of all kinds of diseases of livestock. The Division regulates and checks closely the health of animals brought into the State, but those moved about within the State, and especially those passing through the auction markets, offer an opportunity to spread livestock diseases.

There is no provision which requires the licensing of livestock auction

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markets, although such regulations have been recommended. Throughout the year, a full-time employee has been present on sales days at each of the markets. He supervises the inspection work done by the local practitioner who is employed by the market to check on the health of livestock passing through the auction.

There are only seven such markets in the State; few of them are so constructed to facilitate proper cleaning and disinfection following each sale. One market boldly advertises the fact that it is not responsible for diseased livestock sold through the market. It seems inconsistent to provide stringent health requirements for the importation of livestock and at the same time permit nondescript stock to be exchanged through auction markets within the State.

The Harris Sales Company employed Dr. Arthur Gemberling to inspect all livestock and to tuberculin test cattle not tested within 60 days of the sale. He also immunizes swine passing through the sale for other than slaughter purposes.

During the fiscal year, the work done by Dr. Gemberling was as follows:

| Cattle Transferred | Lots | Cattle Tuberculin Tested | Swine Immunized | |
|---|---|---|---|---|
| Inshipped | 1 | 17 | Singled Treated | 0 |
| Local | 514 | 894 | Double Treated | 2,510 |
| Total | 515 | 911 | Total | 2,510 |

LIVESTOCK SOLD AT HARRIS SALES STABLES
July 1951 to June 1952

| Lambs | Cattle | Bulls | Calves | Hogs | Goats & Sheep | Steers | Horses |
|---|---|---|---|---|---|---|---|
| 577 | 5,862 | 920 | 12,555 | 14,256 | 1,567 | 1,297 | 581 |

Reacting Cattle
101

Dr. Sidney A. Wells, since the death of Elton H. Culver, has supervised tuberculin and brucellosis tests at the Jersey City Stock Yards. He also has continued to bleed cattle shipped into the State in that area and arrange for the disposal of reactors found when cattle are re-bled to comply with New Jersey regulations. He checks on the health of livestock consigned to Jersey City for resale for slaughter purposes, most of which is purchased by those slaughtering establishments in the area which maintain Federal meat inspection.

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During the year, the following livestock was received in carload lots, unloaded in Jersey City and lightered to New York:

DIRECT RECEIPTS OF LIVESTOCK AT JERSEY CITY STOCK YARDS

July 1, 1951 to June 30, 1952

| | Cattle | Sheep | Calves | Hogs |
|---|---|---|---|---|
| 1951 | | | | |
| July | 12,327 | 48,159 | 5,804 | 17,496 |
| August | 8,929 | 48,141 | 3,913 | 16,476 |
| September | 9,101 | 46,176 | 4,759 | 15,943 |
| October | 1,628 | 1,910 | 4,474 | 3,102 |
| November | 9,097 | 47,387 | 3,145 | 21,696 |
| December | 10,059 | 62,818 | 2,312 | 24,357 |
| 1952 | | | | |
| January | 64,180 | 82,284 | 3,859 | 22,287 |
| February | 11,555 | 71,893 | 1,168 | 18,824 |
| March | 9,449 | 68,181 | 1,581 | 22,290 |
| April | 9,271 | 67,201 | 1,604 | 21,672 |
| May | 10,342 | 71,431 | 2,174 | 28,821 |
| June | 8,341 | 66,403 | 1,139 | 17,971 |
| Totals | 164,279 | 681,984 | 35,932 | 230,935 |

In addition, livestock is received in the Yards from points in New Jersey and from adjacent states. Following is a record of such stock received and sold for slaughter purposes during the fiscal year:

SUMMARY OF LIVESTOCK SOLD AT THE JERSEY CITY STOCK YARDS FOR SLAUGHTER AT POINTS THROUGHOUT THE STATE

July 1, 1951 to June 30, 1952

| 1951 | Cows | Bulls | Steers | Total Cattle | Calves | Sheep | Hogs |
|---|---|---|---|---|---|---|---|
| July | 584 | 67 | 70 | 721 | 5,483 | 2,362 | 3,853 |
| August | 619 | 51 | 65 | 735 | 5,407 | 1,119 | 3,911 |
| September | 712 | 56 | 72 | 840 | 4,972 | 1,272 | 4,191 |
| October | 957 | 85 | 226 | 1,268 | 4,575 | 7,463 | 2,851 |
| November | 886 | 38 | 83 | 1,007 | 2,823 | 2,150 | 2,949 |
| December | 713 | 41 | 98 | 852 | 1,327 | 1,633 | 2,541 |
| 1952 | | | | | | | |
| January | 772 | 87 | 64 | 923 | 1,321 | 843 | 2,878 |
| February | 704 | 45 | 71 | 820 | 805 | 610 | 3,431 |
| March | 821 | 33 | 48 | 902 | 455 | 520 | 3,006 |
| April | 782 | 41 | 37 | 860 | 496 | 482 | 2,974 |
| May | 1,076 | 42 | 76 | 1,194 | 557 | 692 | 3,806 |
| June | 588 | 42 | 108 | 738 | 4,008 | 619 | 3,427 |
| Totals | 9,214 | 628 | 1,018 | 10,860 | 32,229 | 19,765 | 39,818 |

## POULTRY DISEASE CONTROL

During the past year, New Jersey continued to supply hatching eggs to a great number of hatcheries in adjacent states and to many foreign countries. All certificates covering foreign shipments, in addition to being certified by this Division, must also be approved by Dr. J. R. Porteus, U. S. Inspector in Charge for New Jersey.

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NEW JERSEY EXPORTS OF HATCHING EGGS AND POULTRY
July 1, 1951 to June 30, 1952

| Country to which consigned | Hatcheries Shipping | Eggs Shipped | Baby Chicks Shipped | Cockerels Shipped | Pullets Shipped | Ducklings Shipped | Bantams Shipped | Turkey Poults Shipped |
|---|---|---|---|---|---|---|---|---|
| Argentina | 1 | | | 2 | 4 | | | |
| Austria | 1 | | | 300 | 1,200 | | | |
| Bermuda | 4 | | 424 | | 150 | | 270 | 50 |
| Brazil | 3 | | 3.000 | 103 | 1,418 | | | 100 |
| Canal Zone | 2 | | 900 | 350 | 1,266 | 50 | | 15 |
| Chile | 1 | | | 1.000 | | | | |
| Cuba | 2 | | 4.500 | 25 | | | | |
| Iran | 1 | 4.000 | 10.000 | | | | | |
| Israel | 1 | 2,100 | | | | | | |
| Liberia | 1 | | | | 1.000 | | | |
| Netherlands Guiana | 1 | | 475 | | | | | |
| Netherlands West Indies | 2 | | 4.750 | 550 | 750 | | | |
| Panama | 2 | | 2.550 | 1.000 | 1,100 | | | |
| Puerto Rico | 4 | | 20.600 | | 1,200 | | | |
| Spain | 1 | 80 | | | | | | |
| Switzerland | 1 | 1,152 | | | | | | |
| Turkey | 1 | | | | 500 | | | |
| Venezuela | 2 | | 21.100 | | 100 | | | |
| Virgin Islands | 2 | | 100 | | 120 | | | |
| Totals | | 7,332 | 68.399 | 3.330 | 8,803 | 50 | 270 | 165 |

*Poultry Inspection*

The inspection of truck lots of poultry arriving at the Vanderpool Street Terminal, Newark, has been carried on by Dr. Wells. This inspection is important because birds that are diseased or unfit for human consumption are culled out and disposed of to prevent their being sold in trade channels.

INSPECTIONS OF POULTRY MADE BY STATE OF ORIGIN
July 1951 to June 1952

| State | Truck Loads Inspected | Birds Inspected | Approximate Weight in Pounds |
|---|---|---|---|
| Connecticut | 1,029 | 1,224,000 | 5,145,000 |
| Delaware | 1,026 | 1,230,000 | 5,130,000 |
| Maine | 47 | 55,000 | 235,000 |
| Maryland | 1.151 | 1,312,000 | 5,755,000 |
| Massachusetts | 129 | 123,000 | 645,000 |
| New Hampshire | 102 | 120,000 | 510,000 |
| New Jersey | 954 | 1,134,000 | 4,770,000 |
| New York | 730 | 755,000 | 3,650,000 |
| North Carolina | 14 | 14,000 | 70,000 |
| Pennsylvania | 1,014 | 1,158,000 | 5,090,000 |
| Rhode Island | 233 | 249,000 | 1,165,000 |
| Tennessee | 26 | 25,000 | 130,000 |
| Vermont | ------ | ------ | ------ |
| Virginia | 775 | 738,000 | 3,875,000 |
| West Virginia | 15 | 9,000 | 75,000 |
| Totals | 7,245 | 8,152,000 | 36,245,000 |

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POULTRY CONDEMNED AT POULTRY TERMINALS
July 1, 1951 to June 30, 1952

| 1951 | Birds Condemned | Approximate Weight in Pounds |
|---|---|---|
| July | 2,900 | 11,600 |
| August | 2,200 | 8,800 |
| September | 2,200 | 8,800 |
| October | 3,400 | 13,600 |
| November | 3,900 | 15,600 |
| December | 3,300 | 17,500 |
| 1952 | | |
| January | 2,900 | 11,600 |
| February | 3,700 | 14,800 |
| March | 3,500 | 14,000 |
| April | 3,900 | 15,600 |
| May | 2,700 | 10,800 |
| June | 5,000 | 20,000 |
| Totals | 39,600 | 162,700 |

*Pullorum Disease Control*

Testing during this fiscal year proceeded smoothly due to the fact that efficient seasonal help well adapted to this type of work was available. Because of this, the Division was able to conduct more tests both in the laboratory and in the field at a minimum expense to the State. There is a decided decrease in the percentage of reactors disclosed on both the plate and tube methods of testing.

Last year, 851,049 birds were tested by the plate method in the field, compared with 938,864 this year. A total of 1,102 reactors, 0.13 per cent, was disclosed last year, while this year only 571 reactors, 0.06 per cent, were disclosed.

There was also a noticeable increase in the number of samples submitted for laboratory test. This has made it almost impossible to keep up the work on brucellosis and has caused the Division to give up work on mastitis surveys. Last year, 65,030 birds were tested with 371 reactors disclosed, or 0.57 per cent of the total. This year of the 86,854 tested in the laboratory, only 133, or 0.15 per cent, reacted.

Satisfactory results have been obtained in the testing from the use of antigen which has been prepared in the Division laboratory.

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## FOWL BLOOD TESTED FOR PULLORUM DISEASE, NUMBER AND PER CENT REACTING, AND RECORD OF CHECK TESTS MADE
July 1, 1951 to June 30, 1952

| ty | Fowl Tested in Field | Number Reacting | Per Cent Reacting | Fowl Tested in the Laboratory | Number Reacting | Per Cent Reacting | Total Fowl Tested | Total Fowl Reacting | Per Cent Reacting | Total Laboratory Check Tests Conducted | Number Reacting | Per Cent Reacting |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ıtic | 43,173 | 65 | .15 | 1,245 | 6 | .48 | 44,418 | 71 | .16 | 1,195 | 288 | 24.10 |
| en | 6,295 | 1 | .02 | 802 | ..... | ..... | 7,097 | 1 | .01 | ..... | ..... | ..... |
| ngton | 32,983 | 12 | .04 | 3,568 | 36 | 1.01 | 36,551 | 48 | .13 | ..... | ..... | ..... |
| den | ..... | ..... | ..... | 369 | ..... | ..... | 369 | ..... | ..... | ..... | ..... | ..... |
| May | 19,687 | 1 | .005 | 3,189 | ..... | ..... | 22,876 | 1 | .01 | ..... | ..... | ..... |
| berland | 239,493 | 10 | .004 | 638 | ..... | ..... | 240,131 | 10 | .004 | 73 | ..... | ..... |
| x | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| cester | 51,482 | 6 | .01 | 2,463 | 24 | .97 | 53,945 | 30 | .06 | ..... | ..... | ..... |
| son | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| erdon | 68,992 | 8 | .01 | 30,005 | 27 | .09 | 98,997 | 35 | .04 | 15 | 4 | 26.67 |
| er | 49,935 | 33 | .07 | 24,951 | 2 | .01 | 74,886 | 35 | .05 | ..... | ..... | ..... |
| dlesex | 54,941 | 36 | .07 | 2,249 | 24 | 1.07 | 57,190 | 60 | .10 | 87 | ..... | ..... |
| mouth | 142,703 | 94 | .07 | 8,815 | ..... | ..... | 151,518 | 94 | .06 | 71+2* | 33 | 46.48 |
| ris | 5,613 | ..... | ..... | ..... | ..... | ..... | 5,613 | ..... | ..... | ..... | ..... | ..... |
| n | 152,554 | 258 | .17 | 2,347 | ..... | ..... | 154,901 | 258 | .17 | 34 | 16 | 47.06 |
| aic | 5,685 | 14 | .25 | 1,311+18* | 4 | .31 | 6,996+18* | 18 | .26 | 3 | 3 | 100.00 |
| n | 38,673 | 12 | .03 | ..... | ..... | ..... | 38,673 | 12 | .03 | 5 | 2 | 40.00 |
| erset | 18,234 | 15 | .08 | 777 | 5 | .64 | 19,011 | 20 | .11 | ..... | ..... | ..... |
| ex | 7,634 | 6 | .08 | 1,481 | 5 | .34 | 9,115 | 11 | .12 | 10 | ..... | ..... |
| on | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ren | 787 | ..... | ..... | 2,644 | ..... | ..... | 3,431 | ..... | ..... | ..... | ..... | ..... |
| State | 938,864 | 571 | .06 | 86,854+18* | 133 | .15 | 1,025,718+18* | 704 | .07 | 1,493+2* | 346 | 23.17 |
| - 51 Totals | 851,049 | 1,102 | .13 | 65,030 | 371 | .57 | 916,079 | 1,473 | .16 | 1,576+15* | 49 | 3.11 |

* Hemolyzed samples not tested

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## Cattle Imported and Released for Dairy and Breeding Purposes
July 1, 1951 to June 30, 1952

| Origin | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arizona | ----- | ----- | ----- | ----- | ----- | ----- | 16 | ----- | ----- | ----- | ----- | ----- | 16 |
| Arkansas | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 1 |
| Canada | 41 | 11 | 50 | 25 | 10 | 30 | 9 | 22 | ----- | 1 | ----- | 8 | 207 |
| Connecticut | 22 | 45 | 16 | 31 | 16 | 40 | 25 | 14 | 17 | 17 | 30 | 74 | 347 |
| Delaware | ----- | ----- | ----- | 1 | ----- | ----- | ----- | 68 | 12 | 30 | 1 | ----- | 112 |
| Georgia | ----- | 1 | ----- | ----- | 1 | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 3 |
| Idaho | ----- | ----- | ----- | ----- | ----- | ----- | 8 | ----- | ----- | ----- | ----- | ----- | 8 |
| Illinois | ----- | 3 | ----- | ----- | 2 | ----- | 1 | ----- | 2 | ----- | ----- | ----- | 8 |
| Indiana | ----- | ----- | ----- | ----- | 1 | 2 | ----- | ----- | ----- | ----- | ----- | ----- | 3 |
| Iowa | ----- | 1 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 |
| Island of Jersey | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 82 | 82 |
| Kansas | ----- | ----- | ----- | ----- | ----- | ----- | 4 | ----- | ----- | 1 | ----- | ----- | 5 |
| Kentucky | ----- | ----- | ----- | ----- | 3 | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 4 |
| Louisiana | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 3 | ----- | ----- | 3 |
| Maryland | 23 | 38 | 13 | 16 | 33 | 19 | 18 | 9 | 7 | 24 | 7 | 14 | 221 |
| Massachusetts | ----- | 1 | ----- | 2 | 1 | ----- | ----- | 1 | ----- | ----- | 1 | 1 | 7 |
| Michigan | 318 | 278 | 167 | 268 | 206 | 46 | 131 | 80 | 105 | 55 | 243 | 192 | 2,089 |
| Minnesota | 60 | ----- | 5 | 45 | 82 | 63 | ----- | 28 | ----- | ----- | 47 | 67 | 397 |
| Mississippi | ----- | ----- | ----- | ----- | ----- | ----- | 14 | ----- | ----- | ----- | ----- | ----- | 14 |
| Missouri | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 10 | ----- | ----- | 10 |
| New York | 570 | 426 | 457 | 473 | 348 | 190 | 295 | 192 | 276 | 246 | 187 | 232 | 3,892 |
| North Carolina | ----- | ----- | ----- | 1 | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 1 | 3 |
| Ohio | 92 | 146 | 93 | 93 | 97 | 36 | 15 | 44 | 6 | 49 | 73 | 52 | 796 |
| Oklahoma | 6 | ----- | ----- | 35 | ----- | ----- | ----- | ----- | ----- | 3 | 76 | ----- | 120 |
| Oregon | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 | ----- | 1 |
| Pennsylvania | 117 | 98 | 122 | 86 | 97 | 54 | 100 | 52 | 56 | 204 | 100 | 107 | 1,193 |
| Rhode Island | 4 | ----- | ----- | ----- | 1 | ----- | ----- | ----- | ----- | ----- | 1 | ----- | 6 |
| Tennessee | ----- | 15 | ----- | ----- | ----- | ----- | ----- | 5 | ----- | ----- | ----- | ----- | 20 |
| Texas | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 35 | ----- | 35 |
| Vermont | ----- | ----- | ----- | 5 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 5 |
| Virginia | 60 | 3 | ----- | 19 | 9 | 7 | 5 | 3 | 2 | 8 | 7 | 1 | 124 |
| Washington | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 1 | ----- | 2 |
| West Virginia | 37 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 1 | ----- | ----- | 38 |
| Wisconsin | 766 | 521 | 655 | 717 | 573 | 483 | 356 | 155 | 439 | 480 | 259 | 556 | 5,960 |
| Wyoming | ----- | ----- | ----- | ----- | 2 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 2 |
| Totals | 2,116 | 1,587 | 1,578 | 1,817 | 1,482 | 970 | 997 | 674 | 923 | 1,135 | 1,069 | 1,387 | 15,735 |

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## DAIRY AND BREEDING CATTLE UNDER 6 MONTHS OF AGE IMPORTED AND RELEASED
July 1, 1951 to June 30, 1952

| Origin | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connecticut | 1 | | | | | | | | | | | | 1 |
| Delaware | | | | | | | | | | 1 | | 18 | 19 |
| Florida | | | | | | | | | | | | 1 | 1 |
| Georgia | 1 | | | | | | | | | | | | 1 |
| Illinois | | | | | | 1 | | | | | | | 1 |
| Massachusetts | | | | 1 | | | | | | | | | 1 |
| New York | | | | | | 6 | 2 | | | | | | 8 |
| North Carolina | | | | | | | | | 5 | | | | 5 |
| Pennsylvania | | | 2 | | | 2 | 1 | | 1 | | 2 | 3 | 11 |
| Vermont | | | | | | | | | | 1 | | | 1 |
| Virginia | | | | | | | | | | | 1 | | 1 |
| Wisconsin | 1 | | | 3 | | | | | | | | | 4 |
| Totals | 3 | | 2 | 4 | | 9 | 3 | | 6 | 2 | 3 | 22 | 54 |

## FEEDER STEERS IMPORTED AND RELEASED
July 1, 1951 to June 30, 1952

| Origin | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arizona | | | | | | | 15 | | | | | | 15 |
| Illinois | | | | | | | | | | | | 8 | 8 |
| Kansas | 29 | | 52 | | 57 | 27 | 61 | | 115 | | | | 341 |
| Kentucky | | | | 114 | 59 | | | | | | | 154 | 327 |
| Lancaster Stock Yards | 182 | 159 | 171 | 225 | 101 | 74 | 136 | 25 | 51 | 375 | 428 | 253 | 2,180 |
| Maryland | 1 | | | | 4 | 5 | | 8 | | 40 | 30 | 67 | 155 |
| New York | | | | | | | 6 | | | | | | 6 |
| Oklahoma | | | | | | | | | | 51 | 10 | | 61 |
| Pennsylvania | 31 | | | 6 | | 5 | | 32 | | | | | 74 |
| Texas | | | | | | | | | 30 | | 35 | 120 | 185 |
| Virginia | | | | | 12 | 31 | 126 | 143 | 112 | | | | 424 |
| Totals | 243 | 159 | 223 | 345 | 233 | 142 | 344 | 208 | 308 | 466 | 503 | 602 | 3,776 |

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## Summary of Inshipments

July 1, 1951 to June 30, 1952

| | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Cattle Imported | 2,116 | 1,587 | 1,578 | 1,817 | 1,482 | 970 | 997 | 674 | 923 | 1,135 | 1,069 | 1,387 | 15,735 |
| Calves Under 6 mos. Imported | 3 | ..... | 2 | 4 | ..... | 9 | 3 | ..... | 6 | 2 | 3 | 22 | 54 |
| Total Dairy and Breeding Cattle Imported July 1951 to June 1952 | 2,119 | 1,587 | 1,580 | 1,821 | 1,482 | 979 | 1,000 | 674 | 929 | 1,137 | 1,072 | 1,409 | 15,789 |
| Total Dairy Cattle Imported July 1950 to June 1951 | 1,695 | 2,314 | 1,982 | 1,658 | 1,645 | 1,116 | 1,231 | 869 | 945 | 1,109 | 1,555 | 1,083 | 17,202 |
| Feeder Steers Imported July 1951 to June 1952 | 243 | 159 | 223 | 345 | 233 | 142 | 344 | 203 | 303 | 466 | 503 | 602 | 3,776 |
| Feeder Steers Imported July 1950 to June 1951 | 186 | 113 | 61 | 147 | 63 | 265 | 114 | 253 | 103 | 357 | 435 | 642 | 2,794 |
| Total Dairy Cattle and Feeder Steers Imported July 1951 to June 1952 | 2,362 | 1,746 | 1,803 | 2,166 | 1,715 | 1,121 | 1,344 | 882 | 1,237 | 1,603 | 1,575 | 2,011 | 19,565 |
| Total Dairy Cattle and Feeder Steers Imported July 1950 to June 1951 | 1,881 | 2,427 | 2,043 | 1,805 | 1,708 | 1,381 | 1,345 | 1,122 | 1,053 | 1,466 | 2,010 | 1,725 | 19,996 |

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RECORD OF BLOOD TESTS MADE ON INSHIPPED ANIMALS
July 1, 1951 to June 30, 1952

| State of Origin | Lots Bled | Cattle Bled | Reactors Found | |
|---|---|---|---|---|
| | | | Number | Percentage |
| Arizona | 1 | 16 | ------ | ------ |
| Arkansas | 1 | 1 | ------ | ------ |
| Canada | 31 | 214 | 2 | .93 |
| Connecticut | 33 | 339 | 1 | .29 |
| Delaware | 7 | 111 | ------ | ------ |
| Georgia | 3 | 3 | ------ | ------ |
| Illinois | 3 | 5 | ------ | ------ |
| Indiana | 2 | 3 | ------ | ------ |
| Iowa | 1 | 2 | ------ | ------ |
| Isle of Jersey | 5 | 82 | ------ | ------ |
| Kansas | 2 | 3 | ------ | ------ |
| Kentucky | 6 | 19 | ------ | ------ |
| Louisiana | 1 | 3 | ------ | ------ |
| Maryland | 47 | 220 | 4 | 1.82 |
| Massachusetts | 6 | 6 | ------ | ------ |
| Michigan | 126 | 2,101 | 5 | .24 |
| Minnesota | 18 | 322 | 7 | 2.17 |
| Mississippi | 1 | 14 | ------ | ------ |
| Missouri | 4 | 14 | ------ | ------ |
| Nebraska | 2 | 13 | ------ | ------ |
| New York | 453 | 3,832 | 28 | .73 |
| North Carolina | 4 | 19 | ------ | ------ |
| Ohio | 56 | 777 | 4 | .51 |
| Oklahoma | 4 | 117 | ------ | ------ |
| Oregon | 1 | 1 | ------ | ------ |
| Pennsylvania | 250 | 1,236 | 10 | .81 |
| Rhode Island | 3 | 6 | ------ | ------ |
| Tennessee | 3 | 21 | ------ | ------ |
| Texas | 1 | 35 | ------ | ------ |
| Vermont | 2 | 5 | ------ | ------ |
| Virginia | 26 | 98 | ------ | ------ |
| Washington | 2 | 2 | ------ | ------ |
| West Virginia | 2 | 2 | ------ | ------ |
| Wisconsin | 234 | 5,944 | 20 | .34 |
| Wyoming | 1 | 2 | ------ | ------ |
| Totals | 1,342 | 15,588 | 81 | .52 |

In addition to the above, one lot of eight Idaho cattle was shipped in and tested on arrival and two, or 25 per cent, reactors were disclosed.

The number of cattle shipped into New Jersey during 1951-52 was slightly less than in the previous year.

| 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 |
|---|---|---|---|---|
| 26,842 | 21,445 | 18,815 | 19,996 | 19,565 |

These figures include dairy, breeding and feeding cattle and calves.

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## CATTLE SHIPPED OUT OF NEW JERSEY
July 1, 1951 to June 30, 1952

| | Lots From Herds Under Supervision | Animals From Herds Under Supervision |
|---|---|---|
| 1951 | | |
| July | 45 | 163 |
| August | 69 | 143 |
| September | 257 | 426 |
| October | 108 | 259 |
| November | 113 | 291 |
| December | 43 | 86 |
| 1952 | | |
| January | 57 | 91 |
| February | 46 | 95 |
| March | 99 | 166 |
| April | 220 | 311 |
| May | 101 | 164 |
| June | 155 | 218 |
| Totals | 1,313 | 2,413 |

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## BUREAU OF TUBERCULOSIS ERADICATION

At the close of the 1950-51 fiscal year, 227,980 tuberculin tests had been conducted, with 298 reactors, or 0.13 per cent reaction. There were 104 infected herds being carried at the end of the year. During 1951-52, 232,611 tuberculin tests were conducted, with 234 reactors, or 0.10 per cent reaction. A total of 88 infected herds was being carried at the end of the year.

During the present year 4,631 more tests were conducted than during the 1950-51 fiscal year, with 64 fewer reactors and a reduction of 0.03 per cent in the incidence of disease. Also, at the end of the present fiscal year there were 16 fewer infected herds than the previous year. The 0.10 per cent infection shown for the year was the lowest incidence of disease reported since the beginning of the tuberculosis eradication program.

While this in encouraging in many ways, it is doubtful whether this trend can continue indefinitely. As mentioned many times, New Jersey remains an importing state. Consequently, with these normal disclosures plus the inexplicable and unavoidable outbreaks encountered from time to time, the incidence of tuberculosis will vary. For some years that may mean low percentages of reactors to be followed perhaps in some succeeding year by a marked increase. The percentage of reactors found in any one year depends upon the number and numerical size of the outbreaks encountered.

During the year, four rather extensive outbreaks, which disclosed 82 reactors, were reported. The herd of Lewis E. Guerin, Dover, contributed 36 reactors in two tests, while the Mary Himmelein herd, Medford, disclosed 31 reactors in three tests. There were 9 reactors to one test in the herd of Archer Locke, Bridgeton, and 6 reactors to one test in the Stephen Schmidt herd, Pittstown.

The Himmelein herd had disclosed 10 reactors in 1944 and 70 in 1945, then passed all tests until this year. Some of the reactors encountered in this herd were found to be members of the 1944 and 1945 herds and the 1950-51 reactions can be attributed to a carry-over infection from that time.

The Guerin herd, assembled and initially tested in 1939, showed no reactions until the tests during the past year. This outbreak was attributed to a Michigan herd addition purchased in August 1950. This animal, after passing one clean test in the Guerin herd, was sold for slaughter and proved to be a generalized case of tuberculosis. Both the Himmelein and Guerin herds have passed one clean test since they disclosed reactors.

The herd of Stephen Schmidt, was assembled and initially tested in March 1950 and had not disclosed any reactors until the recent test. This

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herd was assembled through the purchase of imported animals from a local dealer during the past two years and of the six reactors disclosed, five presented from slight to well-marked lesions of tuberculosis when slaughtered. Some of these animals might have been affected with a latent infection when imported, and reveal the danger to which native herds are exposed when imported animals are added.

The herd of Archer Locke, Bridgeton, has disclosed 24 reactors since it was assembled in 1945, including nine reactors on the last test of the 13-animal herd. No new animals will be added to the present herd, now comprised of four animals, until a new barn is built.

As mentioned before, these four outbreaks accounted for 82 of the 234 reactors disclosed during the year. The remaining 152 consisted of 1, 2 and 3 reactors encountered largely in accredited herds or at least in herds with good past histories.

Reactions in accredited or clean herds are puzzling because in most cases the source of infection or cause of the reaction is difficult to determine. However, they are not a serious problem to clean up; in most cases following the reaction disclosures, the herds pass retests and are returned to their previous status.

The Division continues to encounter quite a high percentage of No Visible Lesion cases among reactors that are posted, but this is not considered to be alarming. Experienced field men realize that as the incidence of disease is lowered, the percentage of No Visible Lesion reactors increases. The policy of the Division in interpreting reactions is not to be changed.

There are several sensitizing factors that will cause reaction deviations which cannot be distinguished from those caused by tuberculosis. However, the Division must assume that all deviations are caused by tuberculosis, rather than that the reaction is due to a sensitizing agent. More liberal interpretations of reaction deviations might cause the overlooking of small reactions actually caused by tuberculosis which could subsequently result in extensive reaction disclosures.

Anthrax and post-bacterinal anthrax occupied a prominent place in disease control activities throughout the year. Bureau personnel was occupied in stamping out the outbreaks and controlling the spread of the disease. However, despite this fact, there was an increase in the volume of tuberculin testing done by full-time or regularly employed men.

Of the 232,611 tests conducted during the year, 43,145 (18.54 per cent) were conducted by regularly employed State men, 11,643 tests (5 per cent)

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by Federal men and 177,823 (76.46 per cent) by veterinary practitioners. From year to year, there is an increase in the volume of testing done by State men.

*Personnel*

In December 1951, Dr. Raymond E. Kerlin became acting chief of the Bureau of Brucellosis Control, in the absence of Dr. Walter L. Mackey, who joined a Federal veterinary force. From December until the end of the fiscal year, nine State veterinarians, and three Federal veterinarians were engaged in tuberculosis control activities. A recent graduate veterinarian, Dr. Edward Newman, Jr., will join the staff on July 1, 1952.

*Reaccreditation of Counties*

During the year, 10 counties qualified and were listed for reaccreditation for a two-year period as free from bovine tuberculosis. Five counties showed decreases in the number of both herds and animals since the last accreditation, while in Atlantic, Burlington, Camden, Salem and Somerset counties more cattle were noted in fewer herds.

COUNTIES LISTED FOR REACCREDITATION FOR TWO-YEAR PERIOD

| County | Dates Tested | Herds | Cattle |
|---|---|---|---|
| Atlantic | 7/1/49 | 105 | 1,907 |
| | 7/1/51 | 79 | 1,636 |
| Burlington | 6/1/50 | 955 | 24,701 |
| | 6/1/52 | 886 | 25,383 |
| Camden | 11/1/49 | 224 | 1,756 |
| | 11/1/51 | 198 | 1,807 |
| Cape May | 2/1/50 | 104 | 503 |
| | 2/1/52 | 88 | 494 |
| Cumberland | 11/1/49 | 809 | 6,849 |
| | 11/1/51 | 651 | 6,717 |
| Hudson | 8/1/49 | 7 | 32 |
| | 8/1/51 | 4 | 29 |
| Morris | 8/1/49 | 752 | 11,400 |
| | 8/1/51 | 668 | 11,377 |
| Salem | 2/1/50 | 1,050 | 16,988 |
| | 2/1/52 | 968 | 18,023 |
| Somerset | 5/1/50 | 793 | 12,879 |
| | 5/1/52 | 712 | 13,678 |
| Union | 7/1/49 | 105 | 1,907 |
| | 7/1/51 | 79 | 1,636 |

On June 30, 1952, 10,683 herds consisting of 207,959 head of cattle were under supervision. This is a decrease of 590 herds and an increase of 7,463 cattle over the number recorded at the beginning of this fiscal year. During the year, initial tests were conducted on 700 herds of 5,490 cattle, with no reactors. The percentage of reaction disclosed on tests of cattle added to herds under supervision was 1.21 or 44 reactors out of 3,640 cattle tested.

A total of 232,611 tuberculin tests was conducted, resulting in 234

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reactors or 0.10 per cent as compared with 0.13 per cent a year ago. Of the 234 reactors disclosed, 193 were eligible for indemnity; 12 of these were purebred and 181 grade animals.

TUBERCULIN TEST RESULTS
1942-1952

| Fiscal Year | Herds Under Supervision | Animals Under Supervision | Tests Conducted | Reactors Resulting | Per Cent Reaction |
|---|---|---|---|---|---|
| 1942-43 | 15,965 | 212,323 | 235,221 | 580 | .25 |
| 1943-44 | 16,212 | 216,014 | 244,496 | 1,030 | .42 |
| 1944-45 | 15,803 | 208,459 | 232,087 | 3,138 | 1.35 |
| 1945-46 | 14,867 | 201,349 | 256,183 | 962 | .38 |
| 1946-47 | 14,347 | 202,034 | 255,447 | 949 | .37 |
| 1947-48 | 13,478 | 201,233 | 248,997 | 411 | .17 |
| 1948-49 | 12,692 | 200,817 | 236,937 | 378 | .16 |
| 1949-50 | 11,962 | 205,105 | 230,187 | 242 | .11 |
| 1950-51 | 11,273 | 200,496 | 227,980 | 298 | .13 |
| 1951-52 | 10,683 | 207,959 | 232,611 | 234 | .10 |

In 1951 New Jersey imported 15,789 head of dairy cattle, of which 3,640 were retested as herd additions, disclosing 44 reactors. In 1951, 16,988 head of dairy cattle were imported and only 3,936 were subjected to herd addition tests, resulting in 41 reactors.

STATE INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid | Average State Indemnity Paid Per Head |
|---|---|---|---|
| Registered animals | 12 | $ 1,622.10 | $135.18 |
| Grade animals | 181 | 13,039.30 | 72.04 |
| Registered and Grade | 193 | $14,661.40 | 75.97 |

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO TUBERCULIN TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid | Average Salvage Received Per Head |
|---|---|---|---|
| Registered animals | 12 | $ 2,376.72 | $198.06 |
| Grade animals | 181 | 37,018.52 | 204.52 |
| Registered and Grade | 193 | $39,395.24 | 204.12 |

FEDERAL INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid | Average Federal Indemnity Paid Per Head |
|---|---|---|---|
| Registered animals | 12 | $ 576.08 | $ 48.01 |
| Grade animals | 181 | 4,408.79 | 24.36 |
| Registered and Grade | 193 | 4,984.87 | 25.83 |
| Total amount received by owners for reactors (Sum of salvage, Federal and State indemnity) | | | $59,041.51 |
| Average amount received per head by owners for reactors | | | $305.91 |

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The amount of State indemnity paid during this fiscal year for reactors condemned decreased from an average of $80.06 for the fiscal year 1950-51 to $75.97 for 1951-52. During the year, 15,789 dairy cattle and 3,776 steers —a total of 19,565 cattle—were imported, compared with 19,996 during the previous year.

CATTLE TUBERCULIN TESTED UNDER ACCREDITED HERD PLAN
July 1, 1951 to June 30, 1952

INITIAL TESTS

| | Lots | Registered Animals | Grade Animals | Total |
|---|---|---|---|---|
| Tested | 700 | 772 | 4,718 | 5,490 |
| Reacted | | | | |
| Percentage of Reactors | | | | |

HERD ADDITION TESTS

| | | | | |
|---|---|---|---|---|
| Tested | 726 | 333 | 3,307 | 3,640 |
| Reacted | | 4 | 40 | 44 |
| Percentage of Reactors 1.21 | | | | |

OTHER TESTS

| | | | | |
|---|---|---|---|---|
| Tested | 11,234 | 35,476 | 188,005 | 223,481 |
| Reacted | | 11 | 179 | 190 |
| Percentage of Reactors .09 | | | | |

| | |
|---|---|
| Tested | 232,611 |
| Reacted | 234 |
| Percentage of Reactors | .10 |
| Percentage of Reactors Based on Cattle Population | .11 |

TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS
July 1, 1951 to June 30, 1952

| County | |
|---|---|
| Atlantic | $ 234.87 |
| Bergen | |
| Burlington | 3,552.38 |
| Camden | |
| Cape May | |
| Cumberland | 802.17 |
| Essex | |
| Gloucester | |
| Hudson | |
| Hunterdon | 1,050.00 |
| Mercer | |
| Middlesex | |
| Monmouth | 147.00 |
| Morris | 3,675.00 |
| Ocean | |
| Passaic | |
| Salem | 900.00 |
| Somerset | 260.24 |
| Sussex | 3,350.99 |
| Union | |
| Warren | 688.75 |
| State | $14,661.40 |

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## TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS FROM BEGINNING OF ACCREDITED HERD WORK IN 1916 TO JUNE 30, 1952

| County | |
|---|---|
| Atlantic | $ 10,229.81 |
| Bergen | 37,793.59 |
| Burlington | 529,109.48 |
| Camden | 19,378.26 |
| Cape May | 10,954.64 |
| Cumberland | 83,792.47 |
| Essex | 40,686.29 |
| Gloucester | 66,781.56 |
| Hudson | 4,455.78 |
| Hunterdon | 373,720.62 |
| Mercer | 190,944.81 |
| Middlesex | 85,446.84 |
| Monmouth | 141,463.05 |
| Morris | 160,113.04 |
| Ocean | 34,199.08 |
| Passaic | 37,153.60 |
| Salem | 378,596.32 |
| Somerset | 228,341.09 |
| Sussex | 1,050,567.92 |
| Union | 40,867.91 |
| Warren | 396,797.19 |
| State | $3,921,393.35 |

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## HERDS AND CATTLE UNDER STATE AND FEDERAL SUPERVISION

### TUBERCULIN TESTS MADE AND REACTIONS DISCLOSED

| County | Herds Under Supervision June 30, 1952 | Herds Fully Accredited June 30, 1952 | Cattle Under Supervision, June 30, 1952 | | | Tuberculin Tests Made July 1, 1951 to June 30, 1952 | Reactors Disclosed | Per cent of Infection |
|---|---|---|---|---|---|---|---|---|
| | | | Reg. | Grade | Total | | | |
| Atlantic | 128 | 111 | 138 | 514 | 652 | 1,078 | 4 | .37 |
| Bergen | 101 | 86 | 212 | 1,056 | 1,268 | 1,421 | ..... | ..... |
| Burlington | 888 | 806 | 3,175 | 22,244 | 25,419 | 28,284 | 47 | .17 |
| Camden | 183 | 165 | 392 | 1,556 | 1,948 | 2,008 | ..... | ..... |
| Cape May | 90 | 84 | 74 | 422 | 496 | 498 | ..... | ..... |
| Cumberland | 629 | 586 | 631 | 6,274 | 6,905 | 7,543 | 13 | .17 |
| Essex | 43 | 41 | 224 | 551 | 775 | 784 | ..... | ..... |
| Gloucester | 725 | 694 | 1,145 | 5,442 | 6,587 | 7,142 | 1 | .01 |
| Hudson | 4 | 4 | ..... | 29 | 29 | ..... | ..... | ..... |
| Hunterdon | 1,570 | 1,478 | 4,831 | 25,630 | 30,461 | 31,449 | 16 | .05 |
| Mercer | 467 | 436 | 2,119 | 6,432 | 8,551 | 9,181 | 2 | .02 |
| Middlesex | 499 | 445 | 844 | 5,805 | 6,649 | 10,246 | ..... | ..... |
| Monmouth | 795 | 748 | 3,103 | 6,760 | 9,863 | 11,260 | 2 | .02 |
| Morris | 642 | 582 | 2,637 | 8,766 | 11,403 | 12,514 | 54 | .43 |
| Ocean | 139 | 129 | 94 | 1,055 | 1,149 | 1,108 | ..... | ..... |
| Passaic | 114 | 107 | 60 | 841 | 901 | 1,024 | ..... | ..... |
| Salem | 966 | 875 | 1,237 | 17,172 | 18,409 | 20,361 | 13 | .06 |
| Somerset | 715 | 654 | 4,424 | 9,266 | 13,690 | 15,194 | 6 | .04 |
| Sussex | 979 | 877 | 4,858 | 29,236 | 34,094 | 40,866 | 60 | .15 |
| Union | 70 | 65 | 46 | 1,709 | 1,755 | 2,872 | ..... | ..... |
| Warren | 936 | 856 | 1,751 | 25,204 | 26,955 | 27,778 | 16 | .06 |
| State | 10,683 | 9,829 | 31,995 | 175,964 | 207,959 | 232,611 | 234 | .11 |

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## INFECTED HERD RECORD
June 30, 1952

| County | Infected Herds in New Jersey | Cattle In Infected Herds |
|---|---|---|
| Atlantic | 1 | 47 |
| Bergen | ------ | ------ |
| Burlington | 12 | 809 |
| Camden | ------ | ------ |
| Cape May | ------ | ------ |
| Cumberland | 5 | 198 |
| Essex | ------ | ------ |
| Gloucester | ------ | ------ |
| Hudson | ------ | ------ |
| Hunterdon | 7 | 204 |
| Mercer | 2 | 125 |
| Middlesex | ------ | ------ |
| Monmouth | ------ | ------ |
| Morris | 14 | 713 |
| Ocean | ------ | ------ |
| Passaic | ------ | ------ |
| Salem | 11 | 554 |
| Somerset | 6 | 272 |
| Sussex | 15 | 698 |
| Union | ------ | ------ |
| Warren | 15 | 608 |
| State | 88 | 4,228 |

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## CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ON THE STAFF OF THE NEW JERSEY STATE DEPARTMENT OF AGRICULTURE

July 1, 1951 to June 30, 1952

| | INITIAL TESTS | | | | | HERD ADDITION TESTS | | | | | OTHER TESTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tested | | Reactors | | | Tested | | Reactors | | | Tested | | Reactors | |
| 1951 | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. |
| July | 11 | 14 | 42 | ..... | ..... | ..... | ..... | 5 | ..... | ..... | 81 | 15 | 1,223 | ..... | ..... |
| August | 12 | 3 | 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 | 70 | 167 | ..... | 1 |
| September | 13 | 16 | 14 | ..... | ..... | 1 | ..... | 17 | ..... | ..... | 142 | 125 | 1,474 | ..... | ..... |
| October | 8 | ..... | 42 | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 211 | 560 | 2,904 | ..... | 2 |
| November | 12 | 1 | 58 | ..... | ..... | 1 | ..... | 27 | ..... | ..... | 241 | 2,602 | 3,566 | ..... | 4 |
| December | 11 | 6 | 69 | ..... | ..... | 1 | ..... | 6 | ..... | 1 | 249 | 2,207 | 5,204 | 3 | 13 |
| 1952 | | | | | | | | | | | | | | | |
| January | 16 | 4 | 73 | ..... | ..... | 2 | 4 | 37 | ..... | ..... | 283 | 539 | 4,314 | ..... | 22 |
| February | 6 | 4 | 34 | ..... | ..... | 1 | 10 | 10 | ..... | 2 | 158 | 649 | 2,308 | ..... | ..... |
| March | 17 | 1 | 70 | ..... | ..... | 2 | 4 | 18 | ..... | ..... | 258 | 1,325 | 4,259 | ..... | 1 |
| April | 26 | 13 | 229 | ..... | ..... | 1 | ..... | 49 | ..... | ..... | 150 | 1,602 | 2,886 | ..... | 15 |
| May | 16 | 26 | 56 | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 148 | 823 | 1,899 | ..... | ..... |
| June | 21 | 3 | 120 | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 118 | 98 | 1,209 | ..... | ..... |
| Totals | 169 | 91 | 825 | ..... | ..... | 12 | 18 | 183 | ..... | 3 | 2,049 | 10,615 | 31,413 | 3 | 58 |
| Per Cent reaction | | | | ..... | ..... | | | | ..... | 1.64 | | | | .03 | .18 |
| Average Per Cent Reaction | | | | ..... | | | | | 1.49 | | | | | .15 | |

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## CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ON THE STAFF OF THE U. S. DEPARTMENT OF AGRICULTURE

July 1, 1951 to June 30, 1952

| | INITIAL TESTS | | | | | HERD ADDITION TESTS | | | | | OTHER TESTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tested | | Reactors | | | Tested | | Reactors | | | Tested | | Reactors | |
| | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. |
| 1951 | | | | | | | | | | | | | | | |
| July | 1 | ..... | 2 | ..... | ..... | ..... | ..... | 6 | ..... | ..... | 57 | ..... | 198 | ..... | 2 |
| August | 3 | ..... | 3 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 13 | ..... | 54 | ..... | ..... |
| September | ... | ..... | ..... | ..... | ..... | ..... | 1 | 12 | ..... | ..... | 36 | 34 | 508 | ..... | ..... |
| October | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 28 | 188 | 408 | ..... | ..... |
| November | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 22 | 18 | 591 | ..... | ..... |
| December | 5 | 12 | 44 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 33 | 178 | 501 | ..... | ..... |
| 1952 | | | | | | | | | | | | | | | |
| January | 7 | ..... | 51 | ..... | ..... | ..... | 1 | 18 | ..... | ..... | 128 | 289 | 2,594 | ..... | ..... |
| February | 5 | ..... | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 32 | 97 | 298 | ..... | ..... |
| March | 5 | ..... | 25 | ..... | ..... | ..... | 5 | 15 | ..... | ..... | 91 | 684 | 877 | ..... | ..... |
| April | 4 | ..... | 57 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 82 | 417 | 829 | ..... | 1 |
| May | 7 | 2 | 34 | ..... | ..... | ..... | 2 | 18 | ..... | ..... | 75 | 321 | 1,869 | ..... | ..... |
| June | 12 | ..... | 57 | ..... | ..... | ..... | ..... | 22 | ..... | ..... | 49 | 9 | 255 | ..... | ..... |
| Totals | 53 | 14 | 309 | ..... | ..... | ..... | 9 | 94 | ..... | ..... | 646 | 2,235 | 8,982 | ..... | 3 |
| Per Cent Reaction | | | | ..... | ..... | | | | ..... | ..... | | | | ..... | .03 |
| Average Per Cent Reaction | | | | ..... | | | | | ..... | | | | | | .03 |

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## CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ACCREDITED BY THE U. S. DEPARTMENT OF AGRICULTURE

July 1, 1951 to June 30, 1952

| | INITIAL TESTS | | | | | HERD ADDITION TESTS | | | | | OTHER TESTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tested | | Reactors | | | Tested | | Reactors | | | Tested | | Reactors | |
| 1951 | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. | Lots | Reg. | Gr. | Reg. | Gr. |
| July | 7 | 27 | 4 | ..... | ..... | 42 | 5 | 77 | ..... | ..... | 64 | 380 | 369 | ..... | ..... |
| August | 8 | 2 | 53 | ..... | ..... | 70 | 11 | 157 | ..... | ..... | 69 | 161 | 518 | ..... | ..... |
| September | 23 | 5 | 102 | ..... | ..... | 56 | 15 | 379 | ..... | 4 | 417 | 1,262 | 6,840 | ..... | 11 |
| October | 45 | 32 | 313 | ..... | ..... | 55 | 12 | 188 | ..... | 1 | 727 | 1,358 | 12,939 | 1 | 5 |
| November | 35 | 17 | 265 | ..... | ..... | 66 | 26 | 499 | ..... | 2 | 987 | 2,263 | 19,556 | 2 | 15 |
| December | 49 | 220 | 448 | ..... | ..... | 28 | 3 | 245 | ..... | 3 | 829 | 2,700 | 12,857 | ..... | 5 |
| 1952 | | | | | | | | | | | | | | | |
| January | 69 | 65 | 620 | ..... | ..... | 60 | 152 | 337 | 1 | 10 | 1,159 | 3,451 | 23,294 | 4 | 17 |
| February | 27 | 20 | 255 | ..... | ..... | 37 | 8 | 242 | 3 | 3 | 804 | 1,974 | 13,495 | 1 | 20 |
| March | 91 | 33 | 844 | ..... | ..... | 101 | 35 | 392 | ..... | 5 | 1,445 | 4,059 | 22,341 | ..... | 25 |
| April | 71 | 127 | 418 | ..... | ..... | 81 | 12 | 241 | ..... | 5 | 1,018 | 3,607 | 21,642 | ..... | 11 |
| May | 28 | 119 | 75 | ..... | ..... | 60 | 16 | 140 | ..... | 4 | 630 | 1,044 | 9,430 | ..... | 8 |
| June | 25 | ..... | 187 | ..... | ..... | 58 | 11 | 133 | ..... | ..... | 390 | 367 | 4,329 | ..... | 1 |
| Totals | 478 | 667 | 3,584 | ..... | ..... | 714 | 306 | 3,030 | 4 | 37 | 8,539 | 22,626 | 147,610 | 8 | 118 |
| Per Cent reaction | | | | ..... | ..... | | | | 1.31 | 1.22 | | | | .04 | .08 |
| Average Per Cent Reaction | | | | ..... | | | | | 1.23 | | | | | .07 | |

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## SIX-YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

| County | July 1951 to June 1952 | | | | | July 1950 to June 1951 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made |
| Atlantic | 652 | 4 | .62 | 1,078 | .37 | 538 | 4 | .74 | 914 | .44 |
| Bergen | 1,268 | ------ | ------ | 1,421 | ------ | 1,382 | 1 | .07 | 1,450 | .07 |
| Burlington | 25,419 | 47 | .18 | 28,284 | .17 | 24,340 | 46 | .19 | 26,208 | .18 |
| Camden | 1,948 | ------ | ------ | 2,008 | ------ | 1,697 | ------ | ------ | 1,889 | ------ |
| Cape May | 496 | ------ | ------ | 498 | ------ | 1,541 | ------ | ------ | 1,297 | ------ |
| Cumberland | 6,905 | 13 | .19 | 7,543 | .17 | 6,829 | 12 | .18 | 6,772 | .18 |
| Essex | 775 | ------ | ------ | 784 | ------ | 972 | ------ | ------ | 987 | ------ |
| Gloucester | 6,587 | 1 | .02 | 7,142 | .01 | 5,939 | 5 | .08 | 6,700 | .07 |
| Hudson | 29 | ------ | ------ | ------ | ------ | 35 | ------ | ------ | 63 | ------ |
| Hunterdon | 30,461 | 16 | .05 | 31,449 | .05 | 28,969 | 37 | .13 | 31,966 | .12 |
| Mercer | 8,551 | 2 | .02 | 9,181 | .02 | 8,299 | 1 | .01 | 8,746 | .01 |
| Middlesex | 6,649 | ------ | ------ | 10,246 | ------ | 6,557 | 4 | .06 | 9,471 | .04 |
| Monmouth | 9,863 | 2 | .03 | 11,260 | .02 | 9,413 | 42 | .45 | 10,673 | .39 |
| Morris | 11,403 | 54 | .47 | 12,514 | .43 | 11,433 | 2 | .02 | 12,669 | .02 |
| Ocean | 1,149 | ------ | ------ | 1,108 | ------ | 1,149 | ------ | ------ | 1,201 | ------ |
| Passaic | 901 | ------ | ------ | 1,024 | ------ | 987 | ------ | ------ | 1,018 | ------ |
| Salem | 18,409 | 13 | .07 | 20,361 | .06 | 16,997 | 38 | .22 | 21,279 | .18 |
| Somerset | 13,690 | 6 | .04 | 15,194 | .04 | 12,829 | 16 | .12 | 14,429 | .11 |
| Sussex | 34,094 | 60 | .18 | 40,866 | .15 | 33,873 | 59 | .17 | 39,144 | .15 |
| Union | 1,755 | ------ | ------ | 2,872 | ------ | 1,636 | ------ | ------ | 2,739 | ------ |
| Warren | 26,955 | 16 | .06 | 27,778 | .06 | 26,081 | 31 | .12 | 28,365 | .11 |
| State | 207,959 | 234 | .11 | 232,611 | .11 | 200,496 | 298 | .15 | 227,980 | .13 |

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## SIX-YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

| | July 1949 to June 1950 | | | | | July 1948 to June 1949 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| County | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made |
| Atlantic | 572 | 2 | .35 | 1,102 | .18 | 567 | 9 | 1.59 | 1,279 | .70 |
| Bergen | 1,645 | 2 | .12 | 1,994 | .10 | 1,778 | 27 | 1.52 | 2,132 | 1.27 |
| Burlington | 24,701 | 46 | .19 | 27,222 | .17 | 24,116 | 38 | .16 | 26,065 | .15 |
| Camden | 1,772 | ..... | ..... | 1,943 | ..... | 1,689 | 1 | .06 | 1,954 | .05 |
| Cape May | 503 | ..... | ..... | 507 | ..... | 511 | ..... | ..... | 506 | ..... |
| Cumberland | 6,917 | 15 | .22 | 7,859 | .19 | 6,985 | 5 | .07 | 7,688 | .07 |
| Essex | 1,005 | ..... | ..... | 1,154 | ..... | 1,076 | ..... | ..... | 1,088 | ..... |
| Gloucester | 5,942 | 6 | .10 | 6,579 | .09 | 5,758 | 5 | .09 | 6,144 | .08 |
| Hudson | 32 | ..... | ..... | 32 | ..... | 32 | ..... | ..... | 39 | ..... |
| Hunterdon | 29,416 | 29 | .10 | 31,267 | .09 | 28,942 | 28 | .10 | 31,431 | .09 |
| Mercer | 9,323 | 7 | .08 | 8,280 | .08 | 9,138 | 4 | .04 | 9,633 | .04 |
| Middlesex | 6,380 | 7 | .11 | 9,894 | .07 | 6,945 | 8 | .12 | 9,872 | .08 |
| Monmouth | 8,823 | 12 | .14 | 9,991 | .12 | 8,202 | 11 | .13 | 9,742 | .11 |
| Morris | 11,492 | 2 | .02 | 11,263 | .02 | 11,405 | 1 | .008 | 12,641 | .007 |
| Ocean | 1,193 | 2 | .17 | 1,274 | .16 | 1,194 | ..... | ..... | 1,185 | ..... |
| Passaic | 1,565 | 1 | .06 | 1,098 | .09 | 1,744 | ..... | ..... | 1,503 | ..... |
| Salem | 16,871 | 32 | .19 | 21,737 | .15 | 16,371 | 68 | .42 | 22,982 | .30 |
| Somerset | 13,002 | 5 | .04 | 14,242 | .04 | 12,619 | 12 | .10 | 13,610 | .09 |
| Sussex | 35,655 | 49 | .14 | 41,686 | .12 | 34,493 | 106 | .31 | 45,367 | .23 |
| Union | 1,796 | 1 | .06 | 2,324 | .04 | 1,907 | ..... | ..... | 2,909 | ..... |
| Warren | 26,500 | 24 | .09 | 28,739 | .08 | 25,345 | 55 | .22 | 29,167 | .19 |
| State | 205,105 | 242 | .12 | 230,187 | .11 | 200,817 | 378 | .19 | 236,937 | .16 |

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## SIX-YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

| County | July 1947 to June 1948 | | | | | July 1946 to June 1947 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made | Animals Under Supervision | Animals Reacting | Per Cent Reaction on Total Cattle Population | Tests Made | Per Cent Reaction On Tests Made |
| Atlantic | 674 | 2 | .30 | 717 | .28 | 711 | 1 | .14 | 663 | .15 |
| Bergen | 2,122 | 1 | .05 | 2,504 | .04 | 2,143 | 1 | .05 | 2,331 | .04 |
| Burlington | 23,102 | 62 | .27 | 27,596 | .22 | 22,220 | 162 | .73 | 29,277 | .55 |
| Camden | 1,706 | 2 | .12 | 2,079 | .10 | 1,601 | 26 | 1.62 | 1,895 | 1.37 |
| Cape May | 558 | 1 | .18 | 484 | .21 | 583 | -- | -- | 589 | ----- |
| Cumberland | 6,358 | 12 | .19 | 7,607 | .16 | 6,728 | 32 | .48 | 9,832 | .33 |
| Essex | 1,133 | ----- | ----- | 1,057 | -- | 1,350 | ----- | -- | 1,360 | ----- |
| Gloucester | 5,706 | 1 | .02 | 5,597 | .02 | 5,475 | 7 | .13 | 6,926 | .10 |
| Hudson | 42 | ----- | ----- | ----- | ----- | 42 | ----- | -- | 54 | ----- |
| Hunterdon | 30,670 | 47 | .15 | 30,461 | .15 | 30,930 | 62 | .20 | 30,099 | .21 |
| Mercer | 8,791 | 20 | .23 | 10,555 | .19 | 8,901 | 27 | .30 | 10,627 | .25 |
| Middlesex | 6,845 | 7 | .10 | 9,970 | .07 | 7,168 | 17 | .24 | 10,781 | .16 |
| Monmouth | 8,168 | 5 | .06 | 9,496 | .05 | 9,036 | 10 | .12 | 6,869 | .15 |
| Morris | 12,422 | 18 | .14 | 14,471 | .12 | 12,110 | 136 | 1.12 | 14,661 | .93 |
| Ocean | 1,314 | 3 | .23 | 1,653 | .18 | 1,472 | 5 | .34 | 1,567 | .32 |
| Passaic | 1,855 | 1 | .05 | 2,761 | .04 | 2,050 | 3 | .15 | 2,994 | .10 |
| Salem | 16,862 | 67 | .40 | 22,029 | .30 | 17,162 | 34 | .20 | 21,840 | .16 |
| Somerset | 12,397 | 9 | .07 | 13,449 | .07 | 12,345 | 12 | .10 | 15,803 | .08 |
| Sussex | 33,935 | 118 | .35 | 55,145 | .21 | 33,078 | 349 | 1.06 | 56,231 | .62 |
| Union | 2,127 | ----- | -- | 2,697 | -- | 2,380 | ----- | -- | 2,436 | ----- |
| Warren | 24,451 | 35 | .14 | 28,669 | .12 | 24,549 | 65 | .26 | 28,612 | .23 |
| State | 201,238 | 411 | .20 | 248,997 | .17 | 202,034 | 949 | .47 | 255,447 | .37 |

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## GOATS

### TUBERCULOSIS

| County | Under Supervision June 30, 1952 | | | | Fully Accredited June 30, 1952 | | | | Number Tested July 1951 to June 1952 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Herds | Reg. | Grade | Tot. | Herds | Reg. | Grade | Tot. | Herds | Reg. | Grade | Tot. |
| Atlantic | 16 | 15 | 83 | 98 | 7 | 15 | 63 | 78 | 16 | 23 | 93 | 116 |
| Bergen | 19 | 13 | 79 | 92 | 13 | 12 | 65 | 77 | 21 | 11 | 83 | 94 |
| Burlington | 14 | 5 | 133 | 138 | 12 | 5 | 87 | 92 | 13 | 5 | 121 | 126 |
| Camden | 4 | ..... | 9 | 9 | 2 | ..... | 7 | 7 | 5 | ..... | 11 | 11 |
| Cape May | 1 | 1 | 2 | 3 | ..... | ..... | ..... | ..... | 1 | 1 | 2 | 3 |
| Cumberland | 5 | 1 | 56 | 57 | 3 | 1 | 50 | 51 | 5 | 1 | 56 | 57 |
| Essex | 6 | 42 | 30 | 72 | 5 | 42 | 28 | 70 | 6 | 42 | 30 | 72 |
| Gloucester | 20 | ..... | 72 | 72 | 11 | ..... | 33 | 33 | 17 | ..... | 66 | 66 |
| Hudson | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hunterdon | 29 | 205 | 105 | 310 | 20 | 204 | 83 | 287 | 31 | 205 | 267 | 472 |
| Mercer | 6 | 8 | 16 | 24 | 6 | 8 | 16 | 24 | 7 | 8 | 18 | 26 |
| Middlesex | 8 | 21 | 40 | 61 | 6 | 19 | 40 | 59 | 10 | 26 | 55 | 81 |
| Monmouth | 24 | 24 | 79 | 103 | 17 | 17 | 60 | 77 | 23 | 19 | 81 | 100 |
| Morris | 43 | 73 | 230 | 303 | 36 | 61 | 209 | 270 | 49 | 95 | 310 | 405 |
| Ocean | 6 | ..... | 19 | 19 | 6 | ..... | 19 | 19 | 7 | 4 | 19 | 23 |
| Passaic | 17 | 111 | 47 | 158 | 15 | 111 | 42 | 153 | 11 | 61 | 29 | 90 |
| Salem | 9 | ..... | 20 | 20 | 4 | ..... | 9 | 9 | 8 | ..... | 21 | 21 |
| Somerset | 24 | 331 | 60 | 391 | 15 | 322 | 47 | 369 | 23 | 331 | 318 | 649 |
| Sussex | 4 | ..... | 49 | 49 | 2 | ..... | 46 | 46 | 4 | ..... | 49 | 49 |
| Union | 4 | 8 | 10 | 18 | 4 | 8 | 10 | 18 | 4 | 9 | 9 | 18 |
| Warren | 9 | 26 | 70 | 96 | 6 | 24 | 66 | 90 | 7 | 2 | 70 | 72 |
| State | 268 | 884 | 1,209 | 2,093 | 190 | 849 | 980 | 1,829 | 268 | 843 | 1,708 | 2,551 |

### BRUCELLOSIS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlantic | 15 | 18 | 79 | 97 | 5 | 18 | 56 | 74 | ..... | ..... | ..... | ..... |
| Bergen | 19 | 6 | 73 | 79 | 12 | 6 | 55 | 61 | 20 | ..... | 79 | 79 |
| Burlington | 14 | 23 | 107 | 130 | 7 | 11 | 94 | 105 | 7 | 16 | 6 | 22 |
| Camden | 7 | ..... | 16 | 16 | 3 | ..... | 11 | 11 | 3 | ..... | 6 | 6 |
| Cape May | 1 | 1 | 2 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cumberland | 6 | 4 | 41 | 45 | 3 | 1 | 36 | 37 | 3 | 3 | 4 | 7 |
| Essex | 6 | 29 | 22 | 51 | 6 | 29 | 22 | 51 | 2 | 3 | 6 | 9 |
| Gloucester | 11 | ..... | 38 | 38 | 6 | ..... | 17 | 17 | 1 | ..... | 3 | 3 |
| Hudson | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hunterdon | 27 | 5 | 277 | 282 | 12 | 3 | 233 | 236 | 17 | 11 | 246 | 257 |
| Mercer | 11 | 8 | 21 | 29 | 6 | 8 | 12 | 20 | 7 | ..... | 18 | 18 |
| Middlesex | 7 | 17 | 41 | 58 | 4 | 13 | 37 | 50 | 4 | 8 | 33 | 41 |
| Monmouth | 23 | 55 | 45 | 100 | 13 | 43 | 28 | 71 | 6 | 20 | 17 | 37 |
| Morris | 46 | 89 | 201 | 290 | 27 | 54 | 157 | 211 | 8 | 12 | 74 | 86 |
| Ocean | 5 | 4 | 13 | 17 | 1 | ..... | 4 | 4 | ..... | ..... | ..... | ..... |
| Passaic | 16 | 101 | 47 | 148 | 10 | 101 | 29 | 130 | 1 | 23 | 5 | 28 |
| Salem | 6 | ..... | 7 | 7 | 4 | ..... | 5 | 5 | 1 | ..... | 1 | 1 |
| Somerset | 28 | 46 | 353 | 399 | 18 | 31 | 315 | 346 | 4 | 7 | 288 | 295 |
| Sussex | 6 | 2 | 41 | 43 | 2 | 1 | 1 | 2 | ..... | ..... | ..... | ..... |
| Union | 5 | 8 | 17 | 25 | 3 | 8 | 3 | 11 | 3 | 7 | 8 | 15 |
| Warren | 11 | 67 | 29 | 96 | 8 | 67 | 22 | 80 | 1 | 5 | ..... | 5 |
| State | 270 | 483 | 1,470 | 1,953 | 150 | 394 | 1,137 | 1,531 | 88 | 115 | 794 | 909 |

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## BUREAU OF BRUCELLOSIS CONTROL AND ERADICATION

The brucellosis control program progressed steadily. At the end of the fiscal year, 7,105 herds, or 66.51 per cent of the herds in the State, were enrolled in one of the four control plans. These herds contained 158,988 animals, or 76.45 per cent of the animals in the State.

New Jersey's brucellosis control plans are uniform compared with those of other progressive states. There is a plan for every cattle owner despite the great variety of individual situations. The fact that the plans can be changed or adapted to particular situations gives the program flexibility, one of its most desirable features.

The brucella agglutination test or blood test is generally recognized as the primary weapon in the fight against brucellosis. New Jersey's farmers in ever-increasing numbers are enrolling in the plans involving testing. On June 30, 1952, 4,019 herds, or 37.62 per cent of the total herds in the State, were under a testing plan. These herds are not essentially of one type, such as family-cow herds, large dairy herds or breeding herds. The fact that 81,499 animals, or 39.19 per cent of the State's animals, are in tested herds indicates that a good cross section is represented.

A record was established for initial blood tests during this fiscal year, with 990 herds containing 15,921 animals receiving initial tests. Only 809 reactors were disclosed on initial test, a reaction rate of 5.08 per cent. Herds may enter the program by individual request of the owner or as part of an initial group test of a township. During this fiscal year, 18 townships were initially group tested. In all of these group tests, the cooperation of the county agricultural agents was an important factor contributing to the good results.

Calfhood vaccination helps strengthen the brucellosis program by inducing resistance against brucellosis. Because most herds are calfhood vaccinated, so-called brucellosis "storms" in certified herds are practically a thing of the past. The number of calves vaccinated annually far exceeds previous estimates, and it is believed that most calves raised in the State are vaccinated. The number of calves vaccinated annually since the beginning of the present program follows:

| | |
|---|---|
| 1946-47 | 13,381 |
| 1947-48 | 14,813 |
| 1948-49 | 16,183 |
| 1949-50 | 18,305 |
| 1950-51 | 19,944 |
| 1951-52 | 22,394 |

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### *The Milk Ring Test*

The composite herd milk test or milk ring test has proven to be of great value in New Jersey. Certified brucellosis-free herds receive a composite herd milk test between annual blood tests. If the milk test indicates a positive or suspicious reaction, the herd is blood tested to determine the status of each individual animal. This practice protects certified herds with a minimum of personnel and little trouble for the farmer.

RESULTS OF MILK RING TEST
July 1, 1951 to June 30, 1952

| County | Herds | Cattle | Tested | Negative | Positive | Suspicious | Broken | Sour |
|---|---|---|---|---|---|---|---|---|
| Atlantic | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Bergen | 1 | 22 | 4 | 4 | ..... | ..... | ..... | ..... |
| Burlington | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Camden | 7 | 213 | 32 | 32 | ..... | ..... | 2 | ..... |
| Cape May | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cumberland | 9 | 216 | 42 | 40 | 2 | ..... | ..... | ..... |
| Essex | 1 | 12 | 8 | 8 | ..... | ..... | ..... | ..... |
| Gloucester | 7 | 238 | 24 | 24 | ..... | ..... | 2 | ..... |
| Hudson | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hunterdon | 84 | 3,211 | 472 | 379 | 37 | 50 | 4 | 3 |
| Mercer | 19 | 764 | 121 | 107 | ..... | 3 | 3 | 8 |
| Middlesex | 6 | 283 | 39 | 37 | ..... | 1 | 1 | ..... |
| Monmouth | 27 | 976 | 156 | 125 | 1 | 6 | 9 | 16 |
| Morris | 3 | 102 | 13 | 12 | ..... | ..... | 1 | ..... |
| Ocean | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Passaic | 1 | 29 | 5 | 5 | ..... | ..... | ..... | ..... |
| Salem | 6 | 157 | 35 | 31 | 3 | 1 | ..... | ..... |
| Somerset | 25 | 1,022 | 132 | 122 | ..... | 5 | 2 | 5 |
| Sussex | 11 | 1,285 | 166 | 150 | 3 | 10 | 3 | ..... |
| Union | 1 | 40 | 4 | 4 | ..... | ..... | ..... | ..... |
| Warren | 3 | 198 | 30 | 14 | ..... | 9 | ..... | 7 |
| State | 211 | 8,768 | 1,283 | 1,094 | 46 | 85 | 27 | 39 |

The goal of the brucellosis program is eradication of the disease, which is a major factor in abortions, breeding problems, mastitis and poor production, as well as a health hazard to those who care for the animals. Recently, a more tangible reason for eradication appeared. Six states and several cities in other states have passed laws or regulations requiring that milk for such areas must be produced in brucellosis-free herds. This movement is gaining momentum among public health officials. New Jersey's brucellosis program is designed to enable dairymen in the State to prepare for compliance with laws or regulations which will inevitably be passed by the municipalities supplied by the State's milk producers.

### *Personnel*

In mid-December, Dr. Walter L. Mackey began an extended leave of absence to accept a position with the Federal government in Washington, D. C. Dr. Raymond E. Kerlin was appointed chief of the Bureau of Brucellosis Con-

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trol. Dr. F. Benjamin Duke resigned as supervisor of brucellosis control in Hunterdon County on April 8, 1952 and was succeeded by Dr. Chester W. Paulus Jr. Dr. G. Robert Muller, supervisor of brucellosis control in the six southern counties, left for military service on May 7, 1952.

On July 9, 1951, Dr. William C. Carter became supervisor of brucellosis control in Burlington and Ocean counties, and on August 15, 1951 Dr. Fred J. Wolfe was assigned to Warren County and parts of two adjacent counties. Drs. H. C. King, E. A. Carbrey and H. R. McKinney of the U. S. Bureau of Animal Industry, carried out brucellosis control work in their respective territories.

STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 66 | $ 9,687.69 |
| Grade Animals | 188 | 13,988.44 |
| Registered and Grade | 254 | $23,676.13 |
| Average State Indemnity Paid Per Head: | | |
| Registered Animal | | $146.78 |
| Grade Animal | | 74.41 |
| Registered and Grade | | 93.21 |

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 66 | $14,905.79 |
| Grade Animals | 188 | 39,014.41 |
| Registered and Grade | 254 | $53,920.20 |
| Average Salvage Received Per Head: | | |
| Registered Animal | | $225.85 |
| Grade Animal | | 207.52 |
| Registered and Grade | | 212.28 |

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
July 1, 1951 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 66 | $ 3,256.33 |
| Grade Animals | 188 | 4,694.12 |
| Registered and Grade | 254 | $ 7,950.45 |
| Average Federal Indemnity Paid Per Head: | | |
| Registered Animal | | $49.34 |
| Grade Animal | | 24.97 |
| Registered and Grade | | 31.30 |
| Total amount received by owners for reactors (Sum of salvage, Federal and State indemnity) July 1, 1951 to June 30, 1952 | | $85,546.78 |
| Average amount received per head | | $336.80 |

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## REACTORS TO THE TEST FOR BRUCELLOSIS APPRAISED, THEIR APPRAISED VALUE, AND THE TOTAL AND AVERAGE AMOUNTS RECEIVED BY OWNERS FROM SALVAGE, STATE AND FEDERAL INDEMNITY

July 1, 1951 to June 30, 1952

| County | Reactors Appraised | | | Appraised Value | | | Total Amount Paid to Owners (Salvage, State and Federal Indemnity) | | | Average Amount Paid Owners Per Head | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total |
| antic | ..... | 2 | 2 | $ ..... | $ 850.00 | $ 850.00 | $ ..... | $ 579.67 | $ 579.67 | $ ..... | $289.84 | $289.84 |
| gen | ..... | 2 | 2 | ..... | 775.00 | 775.00 | ..... | 727.79 | 727.79 | ..... | $363.91 | $363.91 |
| lington | 12 | 26 | 38 | 5,610.00 | 9,895.00 | 15,505.00 | 4,730.52 | 6,794.12 | 11,524.64 | 394.21 | 261.32 | 303.28 |
| nden | ..... | 1 | 1 | ..... | 390.00 | 390.00 | ..... | 280.50 | 280.50 | ..... | 280.50 | 280.50 |
| e May | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| nberland | 5 | 6 | 11 | 2,410.00 | 2,745.00 | 5,155.00 | 1,939.53 | 1,792.30 | 3,731.83 | 387.91 | 298.72 | 339.26 |
| ex | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ucester | 5 | 25 | 30 | 2,930.00 | 10,505.00 | 13,435.00 | 2,292.09 | 8,177.96 | 10,470.05 | 458.42 | 327.12 | 349.00 |
| dson | ..... | 1 | 1 | ..... | 380.00 | 380.00 | ..... | 273.54 | 273.54 | ..... | 273.54 | 273.54 |
| nterdon | 8 | 25 | 33 | 4,000.00 | 9,830.00 | 13,830.00 | 3,505.09 | 7,676.62 | 11,181.71 | 438.14 | 307.07 | 338.84 |
| rcer | 5 | 30 | 35 | 2,510.00 | 11,530.00 | 14,040.00 | 1,844.66 | 9,624.97 | 11,469.63 | 368.93 | 320.83 | 327.70 |
| ddlesex | ..... | 1 | 1 | ..... | 375.00 | 375.00 | ..... | 225.00 | 225.00 | ..... | 225.00 | 225.00 |
| nmouth | 6 | 3 | 9 | 3,600.00 | 1,025.00 | 4,625.00 | 3,064.98 | 943.56 | 3,908.54 | 510.83 | 281.19 | 434.28 |
| rris | 3 | 7 | 10 | 1,265.00 | 3,225.00 | 4,490.00 | 968.75 | 2,184.69 | 3,153.44 | 322.92 | 312.10 | 315.34 |
| an | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| saic | ..... | 1 | 1 | ..... | 400.00 | 400.00 | ..... | 271.48 | 271.48 | ..... | 271.48 | 271.48 |
| em | 2 | 14 | 16 | 715.00 | 6,165.00 | 6,880.00 | 702.30 | 4,451.63 | 5,153.93 | 351.15 | 317.97 | 322.12 |
| nerset | 1 | 3 | 4 | 425.00 | 1,160.00 | 1,585.00 | 418.50 | 843.20 | 1,261.70 | 418.50 | 281.07 | 315.43 |
| sex | 18 | 32 | 50 | 9,390.00 | 12,905.00 | 22,295.00 | 7,947.95 | 10,110.59 | 18,058.54 | 441.55 | 315.96 | 361.17 |
| ion | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| rren | 1 | 9 | 10 | 550.00 | 4,235.00 | 4,785.00 | 435.44 | 2,839.35 | 3,274.79 | 435.44 | 315.48 | 327.48 |
| State | 65 | 188 | 254 | $33,405.00 | $76,390.00 | $109,795.00 | $27,849.81 | $57,696.97 | $85,546.78 | $421.97 | $306.90 | $336.80 |

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## REACTORS TO THE TEST FOR BBUCELLOSIS APPRAISED, THE AMOUNT OF SALVAGE RECEIVED AND THE STATE AND FEDERAL INDEMNITY PAID

July 1, 1951 to June 30, 1952

| ounty | Reactors Appraised | | | Amount of Salvage Received | | | Amount of State Indemnity Paid | | | Amount of Federal Indemnity Paid | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total |
| ntic | ..... | 2 | 2 | $ ..... | $ 379.67 | $ 379.67 | $ ..... | $ 150.00 | $ 150.00 | $ ..... | $ 50.00 | $ 50.00 |
| gen | ..... | 2 | 2 | ..... | 565.92 | 565.92 | ..... | 116.25 | 116.25 | ..... | 45.62 | 45.62 |
| lington | 12 | 26 | 38 | 2,330.52 | 4,194.12 | 6,524.64 | 1,800.00 | 1,950.00 | 3,750.00 | 600.00 | 650.00 | 1,250.00 |
| den | ..... | 1 | 1 | ..... | 180.60 | 180.50 | ..... | 75.00 | 75.00 | ..... | 25.00 | 25.00 |
| e May | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| berland | 5 | 6 | 11 | 1,095.51 | 1,192.30 | 2,287.81 | 612.69 | 450.00 | 1,062.69 | 231.33 | 150.00 | 381.33 |
| ex | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ucester | 5 | 25 | 30 | 1,292.09 | 5,677.96 | 6,970.05 | 750.00 | 1,875.00 | 2,625.00 | 250.00 | 625.00 | 875.00 |
| son | ..... | 1 | 1 | ..... | 173.54 | 173.54 | ..... | 75.00 | 75.00 | ..... | 25.00 | 25.00 |
| terdon | 8 | 25 | 33 | 1,905.09 | 5,176.62 | 7,081.71 | 1,200.00 | 1,875.00 | 3,075.00 | 400.00 | 625.00 | 1,025.00 |
| cer | 5 | 30 | 35 | 944.66 | 6,648.27 | 7,592.93 | 675.00 | 2,226.70 | 2,901.70 | 225.00 | 750.00 | 975.00 |
| dlesex | ..... | 1 | 1 | ..... | 125.00 | 125.00 | ..... | 75.00 | 75.00 | ..... | 25.00 | 25.00 |
| mouth | 6 | 3 | 9 | 1,864.98 | 543.56 | 2,408.54 | 900.00 | 225.00 | 1,125.00 | 300.00 | 75.00 | 375.00 |
| ris | 3 | 7 | 10 | 368.75 | 1,484.69 | 1,853.44 | 450.00 | 525.00 | 975.00 | 150.00 | 175.00 | 325.00 |
| un | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| aic | ..... | 1 | 1 | ..... | 171.48 | 171.48 | ..... | 75.00 | 75.00 | ..... | 25.00 | 25.00 |
| n | 2 | 14 | 16 | 302.30 | 3,051.63 | 3,353.93 | 300.00 | 1,050.00 | 1,350.00 | 100.00 | 350.00 | 450.00 |
| erset | 1 | 3 | 4 | 218.50 | 543.20 | 761.70 | 150.00 | 225.00 | 375.00 | 50.00 | 75.00 | 125.00 |
| ex | 18 | 32 | 50 | 4,347.95 | 6,966.60 | 11,314.55 | 2,700.00 | 2,345.49 | 5,045.49 | 900.00 | 798.50 | 1,698.50 |
| n | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| en | 1 | 9 | 10 | 235.44 | 1,939.35 | 2,174.79 | 150.00 | 675.00 | 825.00 | 50.00 | 225.00 | 275.00 |
| State | 66 | 188 | 254 | $14,805.79 | $39,014.41 | $53,920.20 | $9,687.69 | $13,988.44 | $23,676.13 | $3,256.33 | $4,694.12 | $7,950.45 |

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STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 1,097 | $101,446.30 |
| Grade Animals | 3,019 | 136,687.03 |
| Registered and Grade | 4,116 | $238,133.33 |

Average State Indemnity Paid Per Head:

| | |
|---|---|
| Registered Animal | $92.48 |
| Grade Animal | 45.28 |
| Registered and Grade | $57.86 |

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 1,097 | $101,321.87 |
| Grade Animals | 3,019 | 278,293.48 |
| Registered and Grade | 4,116 | $379,615.35 |

Average Salvage Received Per Head:

| | |
|---|---|
| Registered Animal | $92.36 |
| Grade Animal | 92.18 |
| Registered and Grade | $92.23 |

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1952

| Class of Cattle | Animals | Amount Paid |
|---|---|---|
| Registered Animals | 1,091* | $ 46,423.09 |
| Grade Animals | 3,025 | 64,293.24 |
| Registered and Grade | 4,116 | $110,716.33 |

Average Federal Indemnity Paid Per Head:

| | |
|---|---|
| Registered Animal | $42.55 |
| Grade Animal | 21.25 |
| Registered and Grade | $26.90 |

*One claim was paid during the fiscal year 1945-46 involving six animals paid on a registered basis by the State and on a grade basis by the Federal government.

| | |
|---|---|
| Total amount received by owners for reactors (Sum of salvage, Federal and State Indemnity) December 16, 1940 to June 30, 1952 | $728,485.01 |
| Average amount received per head | $176.98 |

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## REACTORS TO THE TEST FOR BRUCELLOSIS APPRAISED, THEIR APPRAISED VALUE, THE TOTAL AND AVERAGE AMOUNT RECEIVED BY OWNERS FROM SALVAGE, STATE AND FEDERAL INDEMNITY

December 16, 1940 to June 30, 1952

| | Reactors Appraised | | | Appraised Valuation | | | Total Amount Paid to Owners (Salvage, State and Federal Indemnity) | | | Average Amount Paid Owners Per Head | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| unty | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Totals |
| ıtic | 1 | 73 | 74 | $ 185.00 | $ 9,640.00 | $ 9,825.00 | $ 156.97 | $ 8,612.53 | $ 8,769.50 | $156.97 | $117.98 | $118.51 |
| en | 5 | 24 | 29 | 1,255.00 | 6,800.00 | 8,055.00 | 1,149.90 | 6,071.49 | 7,221.39 | 229.98 | 252.98 | 249.01 |
| ington | 90 | 159 | 249 | 25,920.00 | 36,015.00 | 61,935.00 | 22,616.39 | 29,715.97 | 52,332.36 | 251.29 | 186.89 | 210.17 |
| den | 12 | 21 | 33 | 3,740.00 | 4,035.00 | 7,775.00 | 3,396.88 | 3,357.16 | 6,754.04 | 283.07 | 159.86 | 204.67 |
| May | .. | 63 | 63 | .. | 7,295.00 | 7,295.00 | | 6,618.39 | 6,618.39 | | 105.05 | 105.05 |
| berland | 58 | 196 | 254 | 17,120.00 | 37,970.00 | 55,090.00 | 16,074.73 | 34,878.14 | 50,952.87 | 277.15 | 177.95 | 200.60 |
| x | .. | 15 | 15 | .. .. | 1,400.00 | 1,400.00 | ..... | 1,305.92 | 1,305.92 | | 87.06 | 87.06 |
| cester | 20 | 131 | 151 | 6,775.00 | 31,890.00 | 38,665.00 | 5,656.62 | 28,173.11 | 33,829.73 | 282.83 | 215.06 | 224.04 |
| son | .. | 2 | 2 | .. | 730.00 | 730.00 | | 557.53 | 557.53 | .. | 278.77 | 278.77 |
| erdon | 131 | 189 | 320 | 39,190.00 | 50,420.00 | 89,610.00 | 32,439.49 | 41,528.08 | 73,967.57 | 247.63 | 219.73 | 231.15 |
| er | 100 | 380 | 480 | 26,815.00 | 74,035.00 | 100,850.00 | 22,703.70 | 66,511.11 | 89,214.81 | 227.04 | 175.03 | 185.86 |
| llesex | 86 | 598 | 684 | 14,245.00 | 78,235.00 | 92,480.00 | 12,788.69 | 71,006.55 | 83,795.24 | 148.71 | 118.74 | 122.51 |
| nouth | 64 | 104 | 168 | 16,525.00 | 18,475.00 | 35,000.00 | 14,789.76 | 16,824.38 | 31,614.14 | 231.09 | 161.77 | 133.18 |
| is | 157 | 318 | 475 | 40,124.00 | 58,167.00 | 98,291.00 | 33,841.63 | 48,719.74 | 82,561.37 | 215.55 | 153.21 | 173.81 |
| n | .. .. | 9 | 9 | | 1,885.00 | 1,885.00 | .. .. | 1,740.20 | 1,740.20 | | 193.35 | 193.36 |
| aic | 6 | 50 | 56 | 1,460.00 | 8,190.00 | 9,650.00 | 1,357.82 | 7,032.72 | 8,390.54 | 226.30 | 140.65 | 149.83 |
| n | 69 | 257 | 326 | 18,855.00 | 41,585.00 | 60,440.00 | 17,530.31 | 37,050.77 | 54,581.08 | 254.05 | 144.17 | 167.43 |
| rset | 146 | 244 | 390 | 37,680.00 | 39,490.00 | 77,170.00 | 31,740.98 | 33,572.59 | 65,313.57 | 217.40 | 137.59 | 167.47 |
| ex | 84 | 75 | 159 | 23,795.00 | 23,307.50 | 47,102.50 | 20,398.25 | 19,280.31 | 39,678.56 | 242.84 | 257.07 | 249.55 |
| n | .. | 9 | 9 | .. | 1,265.00 | 1,265.00 | | 1,180.15 | 1,180.15 | .. .. | 131.13 | 131.13 |
| en | 68 | 102 | 170 | 14,775.00 | 18,630.00 | 33,405.00 | 12,549.14 | 15,536.91 | 28,086.05 | 184.55 | 152.32 | 165.21 |
| State | 1,097 | 3,019 | 4,116 | $288,459.00 | $549,459.50 | $837,918.50 | $249,191.26 | $479,273.75 | $728,465.01 | $227.16 | $158.75 | $176.98 |

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## REACTORS TO THE TEST FOR BRUCELLOSIS APPRAISED, THE AMOUNT OF SALVAGE RECEIVED AND THE STATE AND FEDERAL INDEMNITY PAID

December 16, 1940 to June 30, 1952

| | Reactors Appraised | | | Amount of Salvage Received | | | Amount of State Indemnity Paid | | | Amount of Federal Indemnity Paid | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| nty | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Total | Reg. | Gr. | Totals |
| ic | 1 | 73 | 74 | $ 28.95 | $ 4,453.28 | $ 4,482.23 | $ 78.02 | $ 2,679.17 | $ 2,757.19 | $ 50.00 | $ 1,480.08 | $ 1,530.08 |
| n | 5 | 24 | 29 | 441.48 | 3,941.79 | 4,383.27 | 471.49 | 1,565.87 | 2,037.36 | 236.93 | 563.83 | 800.76 |
| ıgton | 90 | 159 | 249 | 9,513.80 | 16,970.45 | 26,484.25 | 9,223.75 | 9,048.80 | 18,272.55 | 3,878.84 | 3,696.72 | 7,575.56 |
| en | 12 | 21 | 33 | 1,149.88 | 1,757.69 | 2,907.57 | 1,647.00 | 1,099.31 | 2,746.31 | 600.00 | 500.16 | 1,100.16 |
| May | | 63 | 63 | | 3,490.81 | 3,490.81 | | 1,920.17 | 1,920.17 | | 1,207.41 | 1,207.41 |
| erland | 58 | 196 | 254 | 7,185.71 | 20,625.69 | 27,811.40 | 6,342.12 | 9,987.42 | 16,329.54 | 2,546.90 | 4,265.03 | 6,811.93 |
| | | 15 | 15 | | 846.86 | 846.86 | | 276.55 | 276.55 | | 182.51 | 182.51 |
| ester | 20 | 131 | 151 | 2,859.03 | 17,435.66 | 20,294.69 | 1,979.90 | 7,773.15 | 9,753.05 | 817.69 | 2,964.30 | 3,781.99 |
| on | | 2 | 2 | | 357.53 | 357.53 | | 150.00 | 150.00 | | 50.00 | 50.00 |
| rdon | 131 | 189 | 320 | 12,622.89 | 25,305.37 | 37,928.26 | 14,067.80 | 11,633.83 | 25,701.63 | 5,748.80 | 4,588.88 | 10,337.68 |
| r | 100 | 380 | 480 | 9,272.76 | 40,825.81 | 50,098.57 | 9,270.45 | 17,721.91 | 26,992.36 | 4,160.49 | 7,963.39 | 12,123.88 |
| esex | 86 | 598 | 684 | 5,413.59 | 39,829.37 | 45,242.96 | 4,458.20 | 19,235.48 | 23,693.68 | 2,916.90 | 11,941.70 | 14,858.60 |
| outh | 64 | 104 | 168 | 6,930.69 | 10,101.74 | 17,032.43 | 5,260.19 | 4,522.18 | 9,782.37 | 2,598.88 | 2,200.46 | 4,799.34 |
| s | 157 | 318 | 475 | 11,553.59 | 24,524.71 | 36,078.30 | 15,218.21 | 16,902.70 | 32,120.91 | 7,069.83 | 7,292.33 | 14,362.16 |
| | | 9 | 9 | | 954.91 | 954.91 | | 573.70 | 573.70 | | 211.59 | 211.59 |
| ic | 6 | 50 | 56 | 511.86 | 3,698.87 | 4,210.73 | 565.95 | 2,229.02 | 2,794.97 | 280.01 | 1,104.83 | 1,384.84 |
| | 69 | 257 | 326 | 8,050.06 | 23,307.24 | 31,357.30 | 6,601.42 | 9,038.81 | 15,640.23 | 2,878.83 | 4,704.72 | 7,583.55 |
| set | 146 | 244 | 390 | 12,054.67 | 17,897.47 | 29,952.14 | 13,414.60 | 10,503.21 | 23,917.81 | 6,271.71 | 5,171.91 | 11,443.62 |
| | 84 | 75 | 159 | 9,092.47 | 12,494.83 | 21,587.30 | 7,773.96 | 4,966.34 | 12,740.30 | 3,531.82 | 1,819.14 | 5,350.96 |
| | | 9 | 9 | | 687.14 | 687.14 | | 324.41 | 324.41 | | 168.60 | 168.60 |
| en | 68 | 102 | 170 | 4,640.44 | 8,786.26 | 13,426.70 | 5,073.24 | 4,535.00 | 9,608.24 | 2,835.46 | 2,215.65 | 5,051.11 |
| tate | 1,097 | 3,019 | 4,116 | $101,321.87 | $278,293.48 | $379,615.35 | $101,446.30 | $136,687.03 | $238,133.33 | $46,423.09 | $64,293.24 | $110,716.33 |

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## HERDS AND ANIMALS IN HERDS OPERATING UNDER THE BRUCELLOSIS CONTROL PLANS AND THOSE CERTIFIED BRUCELLOSIS-FREE

June 30, 1952

| County | PLAN A | | PLAN B | | PLAN D | | Total | Total |
|---|---|---|---|---|---|---|---|---|
| | Herds | Animals | Herds | Animals | Herds | Animals | Herds | Animals |
| **Atlantic** | 119 | 405 | 2 | 212 | ..... | ..... | 121 | 617 |
| Certified | 101 | 351 | ..... | ..... | ..... | ..... | 101 | 351 |
| **Bergen** | 45 | 489 | 5 | 147 | ..... | ..... | 50 | 636 |
| Certified | 30 | 288 | ..... | ..... | ..... | ..... | 30 | 288 |
| **Burlington** | 197 | 5,014 | 75 | 4,498 | 1 | 85 | 273 | 9,597 |
| Certified | 70 | 2,193 | 3 | 197 | ..... | ..... | 73 | 2,390 |
| **Camden** | 83 | 746 | 1 | 34 | 3 | 131 | 87 | 911 |
| Certified | 35 | 505 | ..... | ..... | ..... | ..... | 35 | 505 |
| **Cape May** | 88 | 496 | ..... | ..... | ..... | ..... | 88 | 496 |
| Certified | 83 | 485 | ..... | ..... | ..... | ..... | 83 | 485 |
| **Cumberland** | 432 | 2,516 | 37 | 1,523 | 3 | 225 | 472 | 4,264 |
| Certified | 319 | 1,975 | 2 | 101 | ..... | ..... | 321 | 2,076 |
| **Essex** | 20 | 265 | 1 | 234 | ..... | ..... | 21 | 499 |
| Certified | 14 | 247 | ..... | ..... | ..... | ..... | 14 | 247 |
| **Gloucester** | 334 | 2,564 | 28 | 657 | 1 | 59 | 363 | 3,280 |
| Certified | 198 | 1,483 | ..... | ..... | ..... | ..... | 198 | 1,483 |
| **Hudson** | 3 | 29 | ..... | ..... | ..... | ..... | 3 | 29 |
| Certified | 2 | 3 | ..... | ..... | ..... | ..... | 2 | 3 |
| **Hunterdon** | 454 | 9,026 | 134 | 4,775 | 5 | 269 | 593 | 14,070 |
| Certified | 230 | 5,357 | 3 | 231 | ..... | ..... | 233 | 5,588 |
| **Mercer** | 264 | 4,011 | 29 | 1,114 | 2 | 309 | 295 | 5,434 |
| Certified | 97 | 2,245 | 2 | 133 | ..... | ..... | 99 | 2,378 |
| **Middlesex** | 124 | 921 | 23 | 3,145 | ..... | ..... | 147 | 4,066 |
| Certified | 76 | 772 | 2 | 187 | ..... | ..... | 78 | 959 |
| **Monmouth** | 279 | 3,443 | 10 | 766 | 3 | 234 | 292 | 4,443 |
| Certified | 199 | 2,793 | 1 | 176 | ..... | ..... | 200 | 2,969 |
| **Morris** | 192 | 2,615 | 44 | 3,343 | 4 | 571 | 240 | 6,529 |
| Certified | 119 | 1,976 | 1 | 27 | ..... | ..... | 120 | 2,003 |
| **Ocean** | 121 | 424 | 19 | 465 | ..... | ..... | 140 | 889 |
| Certified | 101 | 271 | ..... | ..... | ..... | ..... | 101 | 271 |
| **Passaic** | 14 | 176 | 2 | 55 | 1 | 79 | 17 | 310 |
| Certified | 9 | 66 | ..... | ..... | ..... | ..... | 9 | 66 |
| **Salem** | 121 | 2,052 | 39 | 1,458 | 2 | 114 | 162 | 3,624 |
| Certified | 54 | 1,148 | ..... | ..... | ..... | ..... | 54 | 1,148 |
| **Somerset** | 226 | 5,642 | 26 | 781 | 4 | 203 | 256 | 6,626 |
| Certified | 148 | 3,920 | 1 | 147 | ..... | ..... | 149 | 4,067 |
| **Sussex** | 142 | 4,981 | 71 | 4,811 | 8 | 390 | 221 | 10,182 |
| Certified | 59 | 1,813 | 6 | 1,111 | ..... | ..... | 65 | 2,924 |
| **Union** | 30 | 205 | 1 | 3 | ..... | ..... | 31 | 208 |
| Certified | 19 | 134 | 1 | 3 | ..... | ..... | 20 | 137 |
| **Warren** | 97 | 2,593 | 44 | 1,840 | 6 | 356 | 147 | 4,789 |
| Certified | 42 | 1,108 | ..... | ..... | ..... | ..... | 42 | 1,108 |
| State | 3,385 | 48,613 | 591 | 29,861 | 43 | 3,025 | 4,019 | 81,499 |
| Certified | 2,005 | 29,133 | 22 | 2,313 | ..... | ..... | 2,027 | 31,446 |

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AGGLUTINATION TESTS CONDUCTED IN THE DIVISION LABORATORY ON ANIMALS IN HERDS UNDER SUPERVISION FOR THE CONTROL OF BRUCELLOSIS

July 1, 1951 to June 30, 1952

| County | Tests Made | Nega-tive | Posi-tive | Sus-picious | Samples Not Tested | | |
|---|---|---|---|---|---|---|---|
| | | | | | Ins. Sera | Hemo-lyzed | Broken |
| Atlantic | 639 | 570 | 15 | 52 | .... | .... | 2 |
| Bergen | 1,065 | 967 | 26 | 66 | .... | 3 | 3 |
| Burlington | 9,456 | 8,235 | 416 | 797 | 4 | 2 | 2 |
| Camden | 958 | 873 | 29 | 54 | 1 | .... | 1 |
| Cape May | 491 | 467 | 1 | 23 | .... | .... | .... |
| Cumberland | 5,194 | 4,563 | 186 | 408 | 2 | 32 | 3 |
| Essex | 472 | 448 | 2 | 19 | .... | .... | 3 |
| Gloucester | 4,346 | 3,917 | 172 | 250 | 1 | 4 | 2 |
| Hudson | 79 | 68 | 2 | 9 | .... | .... | .... |
| Hunterdon | 13,556 | 12,187 | 407 | 939 | 2 | 18 | 3 |
| Mercer | 5,936 | 5,267 | 170 | 497 | 2 | .... | .... |
| Middlesex | 6,559 | 6,318 | 19 | 222 | .... | .... | .... |
| Monmouth | 5,751 | 5,387 | 59 | 298 | .... | 7 | .... |
| Morris | 5,599 | 4,982 | 214 | 396 | 3 | 1 | 3 |
| Ocean | 394 | 315 | 38 | 41 | .... | .... | .... |
| Passaic | 634 | 533 | 36 | 65 | .... | .... | .... |
| Salem | 3,976 | 3,514 | 159 | 303 | .... | .... | .... |
| Somerset | 6,910 | 6,385 | 89 | 431 | 1 | 4 | .... |
| Sussex | 13,018 | 11,587 | 319 | 1,102 | 2 | .... | 8 |
| Union | 201 | 187 | 2 | 12 | .... | .... | .... |
| Warren | 3,966 | 3,488 | 135 | 339 | 4 | .... | .... |
| State | 89,200 | 80,258 | 2,496 | 6,323 | 22 | 71 | 30 |

| | |
|---|---|
| Per cent negative | 89.98 |
| Per cent positive | 2.80 |
| Per cent suspicious | 7.09 |
| Per cent not tested | .13 |

SUMMARY — BLOOD SAMPLES DRAWN FROM CATTLE — ROUTINE BRUCELLOSIS TESTS

| Veterinarians Bleeding | July 1, 1951 to June 30, 1952 | |
|---|---|---|
| | Lots | Animals |
| New Jersey Division of Animal Industry | 964 | 15,693 |
| U. S. Bureau of Animal Industry | 1,360 | 26,413 |
| Accredited Practitioners (State Expense) | 2,859 | 48,014 |
| Accredited Practitioners (Tests at Owner's Expense) | 1,277 | 12,929 |
| Totals | 6,460 | 103,049 |

SUMMARY — BLOOD SAMPLES DRAWN FROM INSHIPPED CATTLE — BRUCELLOSIS TESTS

| | | |
|---|---|---|
| New Jersey Division of Animal Industry | 940 | 9,217 |
| U. S. Bureau of Animal Industry | 198 | 1,882 |
| Accredited Practitioners (State Expense) | 1 | 7 |
| Accredited Practitioners (Dealer or Owner Expense) | 204 | 4,490 |
| Totals | 1,343 | 15,596 |

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SUMMARY — BLOOD SAMPLES DRAWN FROM GOATS — ROUTINE BRUCELLOSIS TESTS

| | | |
|---|---|---|
| New Jersey Division of Animal Industry | 46 | 267 |
| U. S. Bureau of Animal Industry | 77 | 284 |
| Accredited Practitioners (State Expense) | 82 | 1,431 |
| Accredited Practitioners (Tests at Owner's Expense) | 2 | 12 |
| Totals | 207 | 1,994 |

SUMMARY — MISCELLANEOUS BLOOD SAMPLES DRAWN — ROUTINE BRUCELLOSIS TESTS

| | | |
|---|---|---|
| New Jersey Division of Animal Industry | 2 | 183 pigs |
| | 1 | 1 horse |
| Accredited Practitioners (Test at Owner's Expense) | 21 | 169 pigs |
| | 4 | 8 horses |
| Totals | 23 | 352 pigs |
| | 5 | 9 horses |

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## CALFHOOD VACCINATIONS REPORTED

July 1, 1951 to June 30, 1952

| County | Plan A | | Plan B | | Plan C | | Plan D | | | | Totals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lots | Calves | Lots | Calves | Lots | Calves | Lots | Calves | Heifers | Adults | Lots | Calves | Heifers | Adults |
| tlantic | 7 | 44 | 2 | 58 | .... | .... | .... | .... | .... | .... | 9 | 102 | .... | .... |
| ergen | 8 | 35 | 3 | 6 | 5 | 19 | .... | .... | .... | .... | 16 | 60 | .... | .... |
| urlington | 127 | 546 | 65 | 358 | 357 | 1,978 | 3 | 10 | 5 | .... | 552 | 2,892 | 5 | .... |
| amden | 25 | 103 | 1 | 8 | 26 | 104 | 3 | 25 | .... | .... | 55 | 240 | .... | .... |
| ape May | 2 | 8 | .... | .... | 3 | 3 | .... | .... | .... | .... | 5 | 11 | .... | .... |
| umberland | 66 | 245 | 36 | 166 | 44 | 170 | 4 | 15 | .... | .... | 150 | 596 | .... | .... |
| ssex | 7 | 37 | 5 | 43 | 3 | 9 | .... | .... | .... | .... | 15 | 89 | .... | .... |
| loucester | 81 | 310 | 27 | 105 | 51 | 181 | 4 | 25 | 8 | .... | 163 | 621 | 8 | .... |
| udson | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| unterdon | 397 | 1,352 | 217 | 848 | 659 | 1,974 | 7 | 26 | 11 | .... | 1,280 | 4,200 | 11 | .... |
| ercer | 143 | 505 | 33 | 110 | 145 | 520 | 12 | 59 | 14 | .... | 333 | 1,194 | 14 | .... |
| iddlesex | 31 | 177 | 32 | 295 | 90 | 259 | 1 | .... | 1 | .... | 154 | 731 | 1 | .... |
| onmouth | 165 | 685 | 25 | 152 | 136 | 470 | 4 | 36 | 2 | .... | 330 | 1,343 | 2 | .... |
| orris | 85 | 250 | 61 | 390 | 93 | 309 | 11 | 141 | 13 | 28 | 250 | 1,090 | 13 | 28 |
| cean | 9 | 33 | 15 | 60 | 4 | 27 | .... | .... | .... | .... | 28 | 120 | .... | .... |
| assaic | 7 | 9 | 5 | 15 | 4 | 7 | 4 | 14 | .... | 6 | 20 | 45 | .... | 6 |
| alem | 93 | 323 | 45 | 215 | 240 | 922 | 3 | 16 | .... | .... | 381 | 1,476 | .... | .... |
| omerset | 225 | 892 | 44 | 206 | 201 | 597 | 4 | 16 | 9 | 25 | 474 | 1,711 | 9 | 25 |
| ussex | 192 | 733 | 107 | 757 | 610 | 2,117 | 22 | 104 | 27 | .... | 931 | 3,711 | 27 | .... |
| nion | 14 | 26 | 2 | 11 | 11 | 33 | 1 | .... | .... | 2 | 28 | 70 | .... | 2 |
| arren | 87 | 294 | 49 | 215 | 366 | 1,556 | 10 | 27 | 6 | 26 | 512 | 2,092 | 6 | 26 |
| State | 1,771 | 6,607 | 774 | 4,018 | 3,048 | 11,255 | 93 | 514 | 96 | 87 | 5,686 | 22,394 | 96 | 87 |

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## HERDS AND ANIMALS IN THE HERDS UNDER BRUCELLOSIS CONTROL PLANS INCORPORATING THE USE OF CALFHOOD VACCINATION

To June 30, 1952

| County | Plan A | | Plan B | | Plan C | | Plan D | | Totals | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Herds | Cattle | Herds | Cattle | Herds | Cattle | Herds | Cattle | Herds | Cattle |
| Atlantic | 6 | 52 | 1 | 162 | ... | ... | ... | ... | 7 | 214 |
| Bergen | 3 | 210 | 2 | 66 | 4 | 121 | .. | . | 9 | 397 |
| Burlington | 109 | 4,099 | 61 | 4,133 | 333 | 11,610 | 2 | 165 | 505 | 20,007 |
| Camden | 25 | 527 | 2 | 59 | 21 | 513 | 3 | 131 | 51 | 1,230 |
| Cape May | 10 | 63 | .. | .. | 3 | 3 | ... | .. | 13 | 66 |
| Cumberland | 82 | 1,438 | 31 | 1,276 | 50 | 1,243 | 2 | 144 | 165 | 4,101 |
| Essex | 2 | 215 | 1 | 234 | 2 | 34 | .. | | 5 | 483 |
| Gloucester | 72 | 1,729 | 13 | 368 | 44 | 1,009 | 2 | 114 | 131 | 3,220 |
| Hudson | .. | .. | .. | .. | .. | .. | .. | .. | .... | .... |
| Hunterdon | 387 | 8,006 | 124 | 4,787 | 698 | 12,987 | 5 | 419 | 1,214 | 26,199 |
| Mercer | 134 | 3,676 | 20 | 948 | 99 | 2,305 | 2 | 290 | 255 | 7,219 |
| Middlesex | 35 | 752 | 14 | 2,113 | 122 | 1,329 | | | 171 | 4,194 |
| Monmouth | 125 | 2,266 | 13 | 713 | 160 | 2,301 | 3 | 224 | 301 | 5,504 |
| Morris | 74 | 1,968 | 26 | 2,234 | 101 | 2,286 | 1 | 239 | 205 | 6,727 |
| Ocean | 17 | 191 | 11 | 396 | 8 | 343 | ... | ... | 36 | 930 |
| Passaic | 5 | 99 | 2 | 49 | 4 | 28 | 1 | 79 | 12 | 255 |
| Salem | 70 | 1,812 | 33 | 1,158 | 241 | 6,700 | 2 | 121 | 346 | 9,791 |
| Somerset | 153 | 4,514 | 29 | 986 | 205 | 3,509 | 2 | 5 | 390 | 9,014 |
| Sussex | 113 | 4,599 | 53 | 3,550 | 547 | 18,174 | 10 | 438 | 723 | 26,761 |
| Union | 15 | 135 | ... | .... | 7 | 54 | 1 | 6 | 23 | 195 |
| Warren | 75 | 2,281 | 42 | 2,093 | 433 | 12,940 | 4 | 194 | 554 | 17,508 |
| State | 1,512 | 38,632 | 478 | 25,325 | 3,086 | 77,489 | 40 | 2,569 | 5,116 | 144,015 |

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## LOTS, CALVES, HEIFERS AND ADULTS VACCINATED FOR BRUCELLOSIS CONTROL
July 1, 1946 to June 30, 1952

| County | Lots Vaccinated | Calves Vaccinated | Heifers Vaccinated | Adults Vaccinated |
|---|---|---|---|---|
| Atlantic | 19 | 113 | 4 | ---- |
| Bergen | 48 | 265 | 8 | |
| Burlington | 3,021 | 14,386 | 32 | 83 |
| Camden | 191 | 764 | 16 | 84 |
| Cape May | 18 | 35 | | |
| Cumberland | 734 | 2,743 | 7 | 7 |
| Essex | 94 | 522 | 15 | |
| Gloucester | 720 | 2,475 | 11 | 13 |
| Hudson | | | | |
| Hunterdon | 6,233 | 19,160 | 42 | 156 |
| Mercer | 1,657 | 5,950 | 39 | 205 |
| Middlesex | 709 | 3,430 | 7 | 9 |
| Monmouth | 1,705 | 6,483 | 92 | 133 |
| Morris | 1,209 | 5,377 | 19 | 325 |
| Ocean | 166 | 536 | ---- | |
| Passaic | 64 | 181 | | 7 |
| Salem | 1,842 | 6,499 | 2 | 24 |
| Somerset | 2,587 | 8,384 | 16 | 83 |
| Sussex | 4,204 | 16,201 | 158 | 188 |
| Union | 99 | 205 | 4 | 8 |
| Warren | 2,973 | 11,281 | 25 | 74 |
| State | 28,292 | 105,020 | 497 | 1,399 |

## CALVES VACCINATED FOR BRUCELLOSIS
July 1, 1946 to June 30, 1952

| County | 1946-47 | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Totals |
|---|---|---|---|---|---|---|---|
| Atlantic | | | 3 | 25 | 13 | 102 | 143 |
| Bergen | 19 | 18 | 69 | 53 | 46 | 60 | 265 |
| Burlington | 1,898 | 1,982 | 2,206 | 2,565 | 2,842 | 2,892 | 14,386 |
| Camden | 82 | 88 | 94 | 115 | 145 | 240 | 764 |
| Cape May | | | 1 | 4 | 19 | 11 | 35 |
| Cumberland | 251 | 381 | 451 | 546 | 518 | 596 | 2,743 |
| Essex | 86 | 99 | 76 | 78 | 94 | 89 | 522 |
| Gloucester | 239 | 304 | 353 | 364 | 594 | 621 | 2,475 |
| Hudson | | | | | | | |
| Hunterdon | 2,261 | 2,732 | 3,005 | 3,298 | 3,664 | 4,200 | 19,160 |
| Mercer | 979 | 905 | 845 | 935 | 1,092 | 1,194 | 5,950 |
| Middlesex | 507 | 456 | 521 | 625 | 590 | 731 | 3,430 |
| Monmouth | 780 | 828 | 1,136 | 1,207 | 1,189 | 1,343 | 6,483 |
| Morris | 814 | 890 | 758 | 853 | 972 | 1,090 | 5,377 |
| Ocean | 37 | 93 | 88 | 84 | 114 | 120 | 536 |
| Passaic | 32 | 24 | 19 | 26 | 35 | 45 | 181 |
| Salem | 723 | 835 | 1,010 | 1,179 | 1,276 | 1,476 | 6,499 |
| Somerset | 1,109 | 1,245 | 1,349 | 1,470 | 1,499 | 1,711 | 8,384 |
| Sussex | 1,920 | 2,204 | 2,368 | 2,913 | 3,085 | 3,711 | 16,201 |
| Union | 22 | 34 | 23 | 22 | 34 | 70 | 205 |
| Warren | 1,622 | 1,694 | 1,808 | 1,942 | 2,123 | 2,092 | 11,281 |
| State | 13,381 | 14,813 | 16,183 | 18,305 | 19,944 | 22,394 | 105,020 |

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# DIVISION LABORATORY REPORT

July 1, 1951 to June 30, 1952

## BLOOD TESTS MADE FOR BRUCELLOSIS ON INSHIPPED ANIMALS

| | |
|---|---|
| Samples received | 15,596* |
| Samples broken (not set) | 5 |
| Tests set | 15,591* |
| Tests read | 15,591* |
| Samples positive | 83 |
| Samples negative | 15,508* |

*This figure includes titre-carrying calfhood vaccinates eligible for entry.

## BLOOD TESTS MADE FOR BRUCELLOSIS ON ANIMALS IN HERDS UNDER SUPERVISION

| | |
|---|---|
| Samples received | 101,840 |
| Samples broken (not set) | 28 |
| Insufficient sera (not set) | 26 |
| Tests set | 101,786 |
| Tests read | 102,007 |
| Samples positive | 2,544 |
| Samples highly suspicious | 1,233 |
| Samples slightly suspicious | 5,636 |
| Samples negative | 92,468 |
| Samples hemolyzed | 100 |
| Samples contaminated | 26 |

## BLOOD TESTS MADE FOR BRUCELLOSIS OF VACCINATED CATTLE

| | |
|---|---|
| Samples received | 3,457 |
| Samples broken (not set) | 4 |
| Tests set | 3,453 |
| Tests read | 3,461 |
| Samples positive | 100 |
| Samples highly suspicious | 53 |
| Samples slightly suspicious | 257 |
| Samples negative | 3,051 |

## MILK RING (ABR) TEST FOR BRUCELLOSIS

| | |
|---|---|
| Samples received | 1,292 |
| Samples broken (not set) | 28 |
| Samples sour (not set) | 42 |
| Samples tested | 1,222 |
| Samples positive | 46 |
| Samples suspicious | 76 |
| Samples negative | 1,100 |

## BLOOD TESTS MADE FOR PULLORUM DISEASE OF POULTRY

| | |
|---|---|
| Samples received | 88,347 |
| Tests set | 88,347 |
| Tests read | 88,347 |
| Samples positive | 479 |
| Samples negative | 87,848 |
| Samples hemolyzed | 20 |

## HOTIS TESTS MADE FOR MASTITIS ON MILK SAMPLES OF ANIMALS

| | |
|---|---|
| Animals tested | 258 |
| Quarter samples tested | 1,017 |
| Streptococci infected quarters | 114 |
| Staphylococci infected quarters | 19 |
| Negative quarters | 883 |
| Quarters disclosing other organisms | 1 |

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## BACTERIOLOGICAL, MICROSCOPIC AND POST MORTEM EXAMINATIONS

| Animal | Specimens Received | Specimen Received | Condition Suspected | Laboratory Findings |
|---|---|---|---|---|
| Bovine | 18 | Feed samples | Anthrax | Negative |
| Bovine | | Spleen and kidney | Anthrax | Negative |
| Bovine | 50 | Ears | Anthrax | Negative |
| Bovine | 12 | Blood samples | Anthrax | Negative |
| Bovine | 1 | Ear and blood sample | Anthrax | Negative |
| Bovine | 1 | Sample dried blood | Anthrax | Negative |
| Bovine | | Muscle tissue | Anthrax | Negative |
| Bovine | | Muscle tissue and spleen | Anthrax | Confirmed |
| Bovine | | Heart and liver | Anthrax | Confirmed |
| Bovine | | Shin muscle | Anthrax | Confirmed |
| Bovine | | Spleen | Anthrax | Confirmed |
| Bovine | | Intestinal lymph nodes | Anthrax | Confirmed |
| Bovine | | Liver and spleen | Anthrax | Confirmed |
| Bovine | 18 | Ears | Anthrax | Confirmed |
| Bovine | 24 | Feti | Brucella, vibrio and trichomonads | Negative |
| Bovine | 4 | Feti | Brucella and vibrio | Negative |
| Bovine | | Placenta and fetus | Brucella, vibrio and trichomonads | Negative |
| Bovine | | Stomach contents and spleen of fetus | Brucella and vibrio | Negative |
| Bovine | 3 | Feti | Brucella and vibrio | Confirmed Brucella abortus |
| Bovine | | Placental fluid | Vibrio fetus | Confirmed |
| Bovine | 2 | Placenta | Brucella, vibrio and trichomonads | Negative |
| Bovine | 36 | Milk samples | Brucella | Negative |
| Bovine | 29 | Quarter milk samples | Brucella | Negative |
| Bovine | 1 | Uterine sample | Brucella and vibrio | Negative |
| Bovine | | Brisket from right front leg | Blackleg | Malignant Edema |
| Bovine | | Lung | Tuberculosis | Negative |
| Bovine | | Glands | Tuberculosis | Negative |
| Bovine | | Feces | Tuberculosis | Negative |
| Bovine | | Hairs from calf | Mange and ringworm | Negative |
| Bovine | 3 | Milk samples | Pathogenic organism | E. coli |
| Bovine | | Blood and tissue | Pathogenic organisms | Negative cultures |
| Bovine | 6 | Semen | Pathogenic organisms | Unable to recover pathogenic organisms |

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| | | | | |
|---|---|---|---|---|
| Bovine | | Pus from abscess on right jaw | Pathogenic organisms | Unable to recover pathogenic organisms |
| Bovine | | Muscle tissue | Blackleg | Negative cultures |
| Bovine | 2 | Milk samples | Pathogenic organisms | Negative cultures |
| Avian | 3 | Bantams | S. pullorum | Confirmed |
| Avian | 234 | Birds | S. pullorum | Negative |
| Avian | 3 | Chicks | S. pullorum | Cecal coccidiosis |
| Avian | 4 | Chicks | S. pullorum | Confirmed |
| Avian | 82 | Birds | S. pullorum | Confirmed |
| Avian | 6 | Turkeys | S. pullorum | Confirmed |
| Avian | 2 | Birds | Bronchitis | Bronchitis and roundworms |
| Avian | 3 | Birds | Blue comb | Confirmed |
| Avian | 4 | Birds | Leukosis | Confirmed |
| Avian | 4 | Chicks | Newcastle Disease | Typical symptoms Newcastle disease |
| Avian | 1 | Bird | Air-sac disease | Confirmed |
| Avian | 2 | Birds | Air-sac and corysa | Negative |
| Avian | 3 | Poults | Paratyphoid | Confirmed |
| Avian | 2 | Birds | Parasites and ova | Few cecal worms. No pathogenic bacteria recovered |
| Avian | 5 | Birds | Unknown | Cecal coccidiosis |
| Avian | 29 | Chicks | Unknown | Coccidiosis |
| Avian | 9 | Chicks | Unknown | Newcastle Disease and coccidiosis |
| Avian | 12 | Birds | Unknown | Fowl typhoid |
| Avian | 2 | Poults | Unknown | Blackhead |
| Avian | 4 | Chicks | Unknown | Blackhead |
| Avian | 7 | Birds | Unknown | Kidney damage |
| Avian | 26 | Birds | Unknown | Undetermined |
| Avian | 2 | Turkeys | Unknown | Undetermined |
| Avian | 2 | Pullets | Unknown | Undetermined |
| Avian | 6 | Poults | Unknown | Mycosis of crop |
| Avian | 2 | Birds | Unknown | Leukosis and typhoid |
| Avian | 5 | Pullets | Unknown | Roundworms and tapeworms |
| Avian | 5 | Pullets | Unknown | Fowl leukosis |
| Avian | 7 | Cockerels | Unknown | Roundworms |
| Avian | 4 | Birds | Unknown | Leukosis, coccidiosis and roundworms |
| Avian | 24 | Chicks | Unknown | Unabsorbed yolks |
| Avian | 4 | Pullets | Unknown | Roundworms |
| Avian | 6 | Birds | Unknown | Laryngotrachetis, tapeworms and roundworms |
| Avian | 5 | Chicks | Unknown | Epidemic tremor |

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| | | | | |
|---|---|---|---|---|
| Avian | 4 | Birds | Unknown | Perosis |
| Avian | 4 | Birds | Unknown | Roundworms and cecal worms |
| Avian | 4 | Poults | Unknown | Unabsorbed yolks and paratyphoid |
| Avian | 1 | Pigeon | Unknown | Canker of mouth |
| Bovine | 1 | Brain | Listerellosis | Negative |
| Bovine | 1 | Muscle tissue | Unknown | Undetermined |
| Bovine | | Blood, stomach, liver, brain | Pathogenic organisms | Grossly contaminated |
| Bovine | | Lung and kidney | Pathogenic organisms | Grossly contaminated |
| Cavy | 1 | Rabbit | Unknown | Pneumonia |
| Deer | 1 | Ear | Anthrax | Negative |
| Equine | 4 | Urine | Pregnancy | Negative |
| Equine | 2 | Urine | Pregnancy | Positive chemical reaction to Cuboni test |
| Equine | 32 | Cervical swabs | Breeding purposes | Negative |
| Equine | 2 | Ears | Anthrax | Negative |
| Equine | 1 | Ear | Anthrax | Confirmed |
| Equine | 1 | Spleen | Anthrax | Confirmed |
| Porcine | 1 | Pig | Unknown | Salmonella choleraesuis recovered |
| Porcine | 1 | Pig | Listerellosis | Negative |
| Porcine | 1 | Ear | Anthrax and erysipelas | Negative |
| Porcine | 1 | Liver | Tuberculosis | Negative |
| Porcine | | Ear, spleen and liver | Anthrax | Negative |
| Porcine | 4 | Pigs | Unknown | Negative |
| Porcine | 2 | Ears | Anthrax | Negative |
| Porcine | | Pus from abscess | Pathogenic organisms | Hemolytic streptococcus recovered |
| Porcine | 1 | Spleen | Anthrax | Confirmed |
| Porcine | 1 | Blood sample | Brucella | Negative |
| Porcine | 2 | Pigs | Parasites and ova | Trichomonads, strongyloids balantidium coli trichuris suis and metastrongylas |
| Porcine | | Kidney, ileocecal valve, spleen | Unknown | Undetermined |
| Ovine | 1 | Ear and spleen | Anthrax | Negative |
| Ovine | 1 | Ear | Anthrax | Negative |
| Ovine | 1 | Spleen | Anthrax | Negative |
| Ovine | 1 | Brain, ewe | Listerellosis | Negative |
| Rodent | 1 | Spleen mink | Anthrax | Confirmed |

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# *Report of the Division of Markets*

WARREN W. OLEY, *Director*

The fiscal year 1951-52 started with the possibility of a cease-fire in Korea. The first reaction was a drop in commodity prices, on the theory that if the fighting ended, demand would fall and inflationary pressures subside. The drop did not apply to many farm products grown in New Jersey. Fruits and vegetables sold at slightly lower prices than in the summer of the preceding year, but egg prices were considerably higher. Eggs, the most important single farm product, sold well throughout the first half of the present fiscal year. Early in the winter, when broiler prices fell and eggs that usually went to the hatcheries were sent to market, egg prices dropped. The prices during the last half of the year have ranged from 10 to 14 cents below the previous year's corresponding prices.

In this country there has been a long-range shift, dating back to pre-World War I days, to the higher grade, health-protecting foods such as milk, eggs, green leafy vegetables, fruits and meat at the expense of fats and such carbohydrates as white bread and potatoes. This shift, in general, has strengthened farming in New Jersey, although it has been detrimental to the white potato industry. Potato consumption has fallen off at least 25 per cent per capita throughout the country, but the consumption of the health-protecting foods mentioned has greatly increased. These are the farm products that make up more than two-thirds of the value of all agricultural production in New Jersey.

Considerable expansion has developed in egg grading work. The use of official grades by a number of egg marketing agencies and by individual producers resulted in the employment of a senior inspector to supervise the work of licensed candlers employed by this group. The inspector assigned to this work was transferred from the fresh egg law project, and the cost to the State is offset by fees collected which are based on volume of sales of the graded product. This program will be more fully discussed under the poultry service project.

Progress has also been made in the standardization of packages. In cooperation with the Division of Weights and Measures of the Department of Law and Public Safety, a standard for asparagus crates was promulgated. The standard crate requirements were put into operation July 1, 1951. While

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little use was made of this crate for the shipment of the 1951 crop, the requirements were enforced for all shipments of the 1952 crop.

As in former years, the Division has worked closely with all other State agencies which have common interests. It also cooperated in many lines of work with the State College of Agriculture and the State Agricultural Extension Service. Relations with the Federal Department of Agriculture and with marketing divisions or bureaus of other states have been pleasant and profitable. The Division has also cooperated with commodity groups, such as the State Poultry Association, State Horticultural Society, State Potato Association, cattle breeds associations, and marketing associations. Some State associations have special industry committees, and it is with such committees that marketing work has been quite effective.

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## BUREAU OF MARKET REPORTING AND COOPERATIVES

The Bureau has a two-fold responsibility. It operates a crop and market information service which supplies New Jersey producers with information on conditions of crops in New Jersey and in competing areas, together with the price and supply conditions in the terminal markets. The Bureau also attempts to supply potential buyers with information on commodities which are being offered for sale in order to attract these buyers to markets in New Jersey. The second project, which deals with cooperative work, is comparatively new for the Bureau; the work was formerly carried on by the director of the Division.

### DAILY PRICE REPORTING

Daily price reporting includes information on the amount of certain commodities offered for sale in the nearby New York and Philadelphia terminal markets and on the price ranges based on containers and grades which are offered. The New York report is placed on the leased wire of the U. S. Department of Agriculture and taken off at Philadelphia. In Philadelphia, the information on both the New York and Philadelphia markets is assembled and the Bureau receives the information by calling Philadelphia over the State-leased telephone wire. This method of accumulating the information in Trenton is a little slower than the former method of calling New York directly shortly before 9:00 a.m. However, the markets which use the information and which call the Bureau for it do not need the information before 10:30 a.m. By using the new system, the work has been continued to the satisfaction of those receiving the information at a saving to the State.

Producers in New Jersey have many opportunities to receive price information by radio that is not available to producers in many other parts of the country. The sales on the terminal markets are practically completed by 5:00 a.m. and the information on early prices is available in broadcasts by 6:00 a.m. from New York, and in the Philadelphia area at noon. One of the cooperative employees in the Philadelphia market is commentator of this program. In addition to the daily telephone calls, the Bureau receives mimeographed sheets prepared for public distribution at the New York and Philadelphia offices, which form the basis of statistical summaries on the changing market conditions of the principal New Jersey commodities.

### DAILY POTATO DESTINATION REPORTING

During the active harvest of the New Jersey white potato crop, a daily distribution reporting service is offered to the dealers and to the USDA Market News Office. Starting about the middle of July, calls are made daily through field offices in Hightstown, Bridgeton and the Bureau office in Trenton

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to potato dealers in the Central and South Jersey areas. From these dealers, the Bureau obtains the number of trucks and sacks which have been sent to other states during the preceding 24 hours. This information is summarized in the Trenton office and mailed first-class to the cooperating dealers and to the Market News Office of the USDA in Philadelphia where it is placed on the leased telegraph wire for broadcast throughout the United States.

The New Jersey Department of Agriculture, through the Division of Markets and this Bureau, was the first to inaugurate such a program. The USDA has carried on a similar rail reporting service in cooperation with the Association of American Railroads for years, but the trend has been toward trucks as a means of transporting farm products. Since the start of this service to Jersey shippers, the Federal government has attempted similar reports on commodities in other areas. The New Jersey movement of potatoes is now almost 100 per cent by truck.

## WEEKLY MARKET REPORTS

### *Weekly Market Review*

An important weekly report put out by this Bureau is the Weekly Market Review, a four-page publication covering market information on feeds and grains, livestock sales, poultry and egg sales, fruit and vegetable sales and milk prices. Feed and grain prices and the condition of the market are obtained from the Philadelphia commercial exchange. One page is devoted entirely to egg prices and factual information which would affect the egg market, such as the egg receipts in New York City and the amount placed in storage. The sales at the cooperative auction markets are reported, including the number of cases at the sale, the high, low and average for large whites and browns, medium whites and browns of AA and A quality, and pullets and peewees. This particular part of the report is widely accepted as the basis of trading between buyers and producers during on-the-farm sales. Historically, prices at the auction markets have been higher than those in the terminal markets, and where the Review with its up-to-date reports of auction sales has been the basis of sale, it has meant additional income to the producers.

The Review also includes the grade prices of candled and cartoned eggs sold by the New Jersey Poultry and Egg Cooperative Marketing Association. Through the efforts of staff members, the prices of candled and cartoned eggs have been added to the prices reported by Urner-Barry, a daily publication which is received by most members of the egg trade. The prices as reported on poultry have been more indicative of true values since prices based on grades at the Flemington market, where a poultry grading service is maintained, have been available. Figures obtained from other markets and on

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livestock show such a wide range that the prices are not too valuable to the producer. However, these prices are carried in the Review in the absence of any better report.

As far as fruits and vegetables are concerned, only the major commodities being offered currently are included, primarily because of a comparison of the price level in Philadelphia and New York for the same commodity and the same quality. On the fourth page, a running summary is continued which includes prices of the corresponding week in the previous year, the prices a week old, and the price during the present week. This information is carried on grains, feed ingredients, hay, eggs, fowl and broilers, fruits and vegetables. In addition, through the cooperation of the Office of Milk Industry, prices of Class I Fluid Milk, Class II Fluid Cream and Class II-A Manufacturing are carried for the producers' use, to round out the information available in the Weekly Market Review.

*Market Conditions Reports*

Market Conditions reports were issued on eight principal commodities. The reports include crop information as well as market conditions. Also included, when they have a bearing on the production or present marketing of the crop, are digests of government regulations, ceiling price information, support price information, and changes in types of containers which tend to return a greater amount of money to the grower.

Eight reports were issued on sweet potatoes. These covered production figures for competing areas of the 1951 crop as well as the current price during the harvesting and marketing season. Early in the season, in view of the small national crop estimated at about 35 million bushels, compared with 58 million bushels in 1950 and a ten-year average of about 61 million bushels, it was felt that New Jersey growers were selling their crops at prices below the market potential. How well the growers received this information is not known, but many of those who stored their crops, rather than sell them at harvest time, received much better prices during the winter and spring months. In January, a report of the U. S. Department of Agriculture's acreage goal was included in the sweet potato conditions report. The USDA has placed a goal for sweet potato production at 46 million bushels for 1952.

One report was issued on onions. This included information on the acreage, yield and indicated production in New Jersey and in the early states competing with New Jersey. The early summer group of states planted about 5,500 acres, compared with 4,300 acres the previous year, and a 6,800-acre average. New Jersey has the largest acreage in this group, with 3,100 acres for harvest. In 1951 the nearest competitor to New Jersey in the early summer group had 900 acres.

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Two reports were issued on peaches, covering production, current market prices and shipping point information on those states competing with New Jersey. The peach crop marketed in 1951 was well above that of 1950, but not as large as the 1949 crop or the ten-year average. Prices obtained by growers in New Jersey were only a few cents above the prices received in 1950.

Nine reports were issued on strawberries. These covered an anticipated acreage report for 1952 which was issued during October 1951. Strawberries are an important cash crop in New Jersey, but are extremely vulnerable to insects, diseases and weather conditions. Weather conditions during the 1952 harvest season caused the immature berries to show a considerable amount of decay before they were ready for harvest, and later in the deal, many berries were destroyed due to the extensive rains and tremendous heat. All in all, the season was generally not too favorable although prices were fairly high.

Three reports were issued on lettuce, covering the usual crop and market information. Here again the weather played an important part in the total supplies of lettuce. Some early planted lettuce in Connecticut and other northern sections matured within a few days of the maturing date for the South Jersey crop.

In 1951, the national apple crop was estimated at about 117 million bushels, which was below the 1950 estimate and above the ten-year average. However, the crop in the North Atlantic states, which supplies most of the New Jersey market, had an indicated production of about 2½ million bushels above the 1950 production. The production in the western states was about 10 million bushels less. In the East, particularly in the New England states, there was considerable scab infestation of such intensity that some blocks of apples were abandoned and large amounts were discarded at harvest time as not marketable. This helped to hold the market at a fairly high level, because the fruit that was being held in storage was of comparatively good quality.

One report was issued on asparagus during the spring of 1952 when this crop was being harvested and marketed. Production was delayed considerably during the first two or three weeks due to cool weather, and the hot weather toward the end of the season caused damage due to spreading tips. This shortened the market season. Prices did not vary too much during the period, although part of the time they were sufficiently low to make it profitable for Canadian importers to purchase the grass on a grade basis for consumption in Canada.

Twenty-nine reports were issued on white potatoes. Although these reports were not too valuable to New Jersey growers after the first of October, except for references to seed stock, they kept growers informed on potato marketing activities in other states. During most of the fiscal year 1951-52 (about 90 per cent of the marketing of the New Jersey crop) prices

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remained at a level barely above the cost of production. Most of the crop was sold after being harvested, graded, packed and loaded at a figure of around $1.70 per 100 pounds.

During October, prices advanced until they reached $3.25 on October 16. As it became more apparent that there would be a scarcity of potatoes, the price continued to climb until it was above what the Office of Price Stabilization considered should be the ceiling price for white potatoes. Consequently, OPS placed white potatoes under ceiling price regulations in January. In some cases, this necessitated a rollback of prices from the current market levels. As had so often happened during World War II when a ceiling price applied to fruits and vegetables, black market operations and tie-in sales with other commodities became more prevalent, and all kinds of subterfuges were used to circumvent the price regulations. In June, OPS withdrew ceiling price regulations on white potatoes primarily because there was a bill in the Senate which would eliminate potatoes from control at the expiration of the then applicable date of June 30. Later, the Defense Production Act was extended by Congress and signed by the President, but fruits and vegetables were eliminated from price controls.

When restrictions were removed, the price jumped from the allowable OPS ceiling to between $7 and $8.50, a price comparable to the black market price which included tie-in sales and under-the-counter considerations. This attracted the normal supply of potatoes to the regular distributive channels, and the markets were temporarily over-supplied, causing a price decline. The general price level, as the year ended, was about $5-5.50 for potatoes sold in competitive states that harvest immediately prior to New Jersey. It remains to be seen now whether potatoes in New Jersey and Long Island, where most of the supplies are located that will be sold during July, August and September 1952 in the northeast and southern Atlantic states, will be marketed in an orderly manner to assure the growers of prices which will be well above the production costs.

### *New Jersey Truck Crop News*

The New Jersey Truck Crop News was issued cooperatively with the Trenton office of the USDA Bureau of Agricultural Economics and the Trenton Weather Bureau of the U. S. Department of Commerce. Approximately 2,000 persons receive the Truck Crop News, which is mailed under the franking privilege of the U. S. Department of Agriculture at no cost to New Jersey. Of the 2,000, approximately 700 are prospective buyers of New Jersey commodities, and this information is sent to them in an effort to stimulate their purchases of New Jersey-grown commodities. The crop information is assembled by members of the staff of the BAE and the Division of Markets,

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while the Weather Bureau supplies the weather information. As this report is seasonal, begun in May and ending in October, it covers parts of two fiscal years. At the start of the 1952 spring issue, it was found that funds available to the BAE for personnel had been reduced, and one of the statisticians assigned to the collection of crop information had to be dropped. This caused a change in the work load of the Division, and another member of the staff was assigned to part-time work collecting crop information.

### *Auction News*

The Auction News is a promotional sheet mailed weekly during the heavy marketing season between May and October. It identifies various cooperative auction markets located in the principal produce areas of the State with the New Jersey-grown commodities offered for sale during the week. The postage expense and the cost of the paper and envelopes are paid by The Cooperative Marketing Associations in New Jersey, Inc. The editorial and clerical work is done by members of this Bureau.

Associated with this weekly promotional sheet was a calendar, which was issued monthly from June through September 1951. This was a rather long-range promotional endeavor which identified the commodities offered during the month with the auctions at which they were available. The calendar has been discontinued for 1952 as a result of the vote of the auctions, with the recommendation that the money involved be used for trade paper advertising during July and August 1952. The auction market associations in New Jersey paid the cost of printing and mailing the calendar during the time that it was authorized.

### *Annual Potato Summary*

The Annual Potato Summary was prepared for printing in circular form, published and mailed out in the spring. This record of the important phases of the potato crop has been carried on since 1928. It is the only complete record of the New Jersey crop and is used by many statisticians, research workers, railroad executives, and bag manufacturers as well as growers. Included in the summary are a comparison of rail shipments by years, the distribution of the crop by states, which includes both rail and truck shipments, types of containers and the percentage of the crop marketed in each, and a summary of crop harvesting and marketing conditions during the years.

## SERVICE WORK WITH COOPERATIVES

The Division has worked with marketing cooperatives ever since the Bureau of Markets was developed more than 30 years ago. As the years have passed, the importance of cooperative marketing to New Jersey agriculture has steadily increased. As the services of cooperatives have increased, so have

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the demands on Division personnel. As in former years, work in advisory capacities and in direct aid in solving problems has continued. This aid will be summarized in commodity sections of this report. The Division has also assisted purchasing and service types of cooperatives.

At the time of the development of a bureau to handle market reporting, the service and regulatory work of cooperatives concerned with legal requirements as found in the cooperative law was added to the responsibilities of the Bureau chief, and the title changed to Bureau of Market Reporting and Cooperatives.

Formerly, the director of the Division devoted considerable time to helping marketing cooperatives get started by making surveys as to the advisability of a cooperative in a particular area, drawing up articles of incorporation and by-laws and organization meetings, and meeting with the boards of directors of the various cooperatives to discuss problems peculiar to their organizations. When the cooperative work was assigned to this Bureau, there was no complete list of the cooperatives in the State. A long list of names was compiled from contacts with members of cooperatives, county agents and other growers. The names on this list were carefully checked with the names recorded in the Secretary of State's office. Some organizations previously thought of as cooperatives actually were not incorporated as such.

The first attempt to get some idea of the amount of business done by the cooperatives in the State was made in 1949 in the form of a questionnaire sent to the cooperatives of record at their last known address. Many of these were returned because the cooperative had been out of business for some time. However, from the 88 which reported, it was learned that the cash value of the business performed during 1948 amounted to about $66,000,000 in marketing for members, about $18,500,000 in purchases for members and an additional $750,000 provided in service.

This amount of business was carried on by about 1,200 employees, accounting for a total payroll of almost $3,000,000. The value of the property and equipment used by these cooperatives was about $5,250,000. State and Federal taxes accounted for about $95,000, and in addition over $36,000 was contributed to social security funds, about $23,000 toward unemployment compensation, and income taxes withheld accounted for about $124,000. An incomplete return on the total amounts of patronage dividends accounted for $668,000 returned to the members.

The 88 cooperatives had 730 directors, which ranged from 3 to 29 per organization. The number of members was approximately 72,000 and this number naturally includes some duplication, as a single person may be a member of three or four cooperatives. The list of non-members served, of course, does not overlap in this respect as much as the member list, and the

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number of non-members was 19,000. This review of statistics emphasizes the impact of the cooperatives on New Jersey agriculture. This includes the marketing of fruits and vegetables, eggs, poultry, livestock and grains in the selling field; the purchasing of such important items as fertilizer, feeds, seeds, equipment and machinery; services such as artificial insemination, dairy herd improvement and others. Additional work and studies have been started with these cooperatives because of their importance to more than one phase of New Jersey agriculture. The work is general in scope and broadly includes, as far as this Bureau is concerned, an attempt to keep the cooperatives legal, strong, and appreciative of the problems which they may encounter.

The first attempt to improve the Department's service was the inauguration of a news sheet, "New Jersey Cooperative News," which is published every two months. This is the media for an exchange of information by the cooperatives. Also noted are unsuccessful programs which should be avoided by other cooperatives without proper investigation. Other items of interest have included an analysis of the Revenue Act of 1951, which has prompted many cooperatives to re-examine their articles of incorporation, by-laws and financial structure in order to continue to be exempt from the payment of Federal income taxes. The News also carried an analysis of the New Jersey cooperative law so that directors and members will have a better idea of their duties, obligations and restrictions.

Because of the problems involved under the new Revenue Act and also because of the service that can be rendered by the Department, representatives of the Division of Markets have been asked to attend committee meetings and directors' meetings of 15 cooperatives in an advisory capacity, because it is obvious that changes should be made in by-laws, certificates of incorporation, and in capital structure so that the cooperatives continue in line with existing legal requirements. In some cases, changes have had to be extensive and several conferences have been needed. At these conferences not only directors but accountants and legal counsel have participated.

In the amendment to the Agricultural Cooperative Association Act (Chapter 13, Title 4, Revised Statutes), there was a provision for dissolution of cooperatives. Under this provision, the Secretary of the Department of Agriculture certified to the Secretary of State the names of 60 cooperatives for dissolution by proclamation. Those which were included in the list had been out of business, some for as long as 20 years, and the action taken by the Department was merely a formality. The cooperatives whose names were submitted were carefully investigated by the Bureau before action was taken.

The Bureau now has a list of 114 active cooperatives, all of which have filed the required copies of their annual audit with the Secretary of Agriculture.

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## DAIRY PRODUCTS MARKETING

The objective of the dairy products marketing project is to aid in the development of a practical milk marketing program for the State. The major activity of the program is the supervision of the production and distribution of milk under the New Jersey official grades and the expansion of the sale of such milk. These grades represent an effort on the part of the Division of Markets to recognize and identify nearby-produced milk of definite quality standards. Other activities include cooperation with the Office of Milk Industry, the New Jersey Dairymen's Council and other agencies, and assistance to livestock auction associations in the supervision and operation of livestock sales by auctions.

The fiscal year ending on June 30, 1952, was a difficult period for dairy farmers, but no solution appeared as the year closed. New Jersey milk was about the only farm product which did not fluctuate during the year in accordance with the retail price. The wholesale blend price paid to the dairymen decreased in some counties because of the increasing availability of Class 1-C milk from out-of-state sources. Consequently, many producers did not receive the full Class I price set by the New Jersey Office of Milk Industry.

During most of the fiscal year, until Congress curtailed the activities of the Office of Price Stabilization in regard to farm products, particularly milk, that agency was adamant about its rulings as to price increases. Only certain dealers were granted increases, while for competitors no increase was approved in many instances. Consequently, confusion existed due to unequal retail prices among competing dealers.

In addition, in October 1951 after a 48-hour strike, dealers were forced into a higher wage agreement with union drivers and plant workers. Those dealers who were unionized claimed, with justification, that the one-half cent allowed by the OPS would not cover this item alone. Consequently, no raise was allowed for the New Jersey producer, whose costs both for labor and materials were mounting steadily. The 82nd Congress, in its final sessions, eliminated this control of milk and dairy products, but too late to have any effect on the fiscal year just ended.

A major factor in the crucial situation now prevailing in the New Jersey milk marketing picture is the proposal by the U. S. Department of Agriculture to amend the milk marketing order regulating the handling of milk in the New York-New Jersey Metropolitan Area. In the notice calling for the hearing held in Newark on June 2, 1952, the area was defined as including 13 counties in New Jersey and four in southern New York, including two on Long Island.

Since 1939, the Metropolitan Bargaining Agency, composed of dealers

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selling milk in New York City and surrounding areas, has been anxious to include metropolitan New Jersey with New York in one large marketing order. This has been resisted by all New Jersey interests who have been satisfied with State control.

The defense against the imposition of a Federal Marketing Order on New Jersey has been supported by every segment of the New Jersey dairy industry except about 400 members of the Dairymen's League Cooperative Association who reside in New Jersey. The opposition has been led largely by the United Milk Producers and the New Jersey Dairymen's Council. They have taken the stand that New Jersey dairy interests seek no regulation and desire no interference by the Federal government in the present regulation of milk by the New Jersey Office of Milk Industry.

The case presented by New Jersey is to the effect that if there is going to be regulation of the milk industry, such regulation should be proposed and enforced by agencies that are responsible to the citizens of New Jersey. The dairymen object to being forced into a Federal order, the ultimate control of which is determined by the vote of those who have little interest in New Jersey other than to seek its choice markets.

One important phase of milk marketing during recent years has been a reduction in interest in a quality program. Milk marketing under control measures, and the resultant economic factors involved, seems to have come to the point where the chief criterion of good milk is a low bacteria count. This is deplorable as both New York and New Jersey have for years been known as the home of a good, palatable product. The unclassified and surplus supplies that are invading New Jersey markets at lower prices are steadily destroying the reputation earned throughout the many years of quality control in New York City and New Jersey. A strong quality control program, backed by leaders of the industry, might be inaugurated to restore the quality for which this region has always been noted. As with all farm products, a superior article brings the top price, and this principle applies to milk especially.

## NEW JERSEY OFFICIAL GRADES

The New Jersey official grades have, since 1931, been the outstanding effort made for quality control by any milk marketing agency. With few exceptions, each year more milk has been marketed under the provisions of the New Jersey official grades. The gain last year, while small, is remarkable, as premium milks have shown a decrease during the year. The trend has been under a controlled market, toward a "one grade" basis, with the lowest grade as the standardized product. The fact that there were 112,724 quarts of milk sold daily under New Jersey official grade supervision indicates that a market for high quality milk could be developed in the normal competitive manner.

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Under a controlled market, it has been almost impossible to secure more co-operating dealers, as price is now the main objective in procuring additional supplies, and the temptation to cut cost with cheap out-of-State milk is almost irresistible. The Division of Markets has endeavored to cooperate with all its dealers in securing milk that will meet its standards, but where such milk is available, the price is almost always prohibitive.

At the close of the fiscal year, 23 dealers were processing 112,724 quarts of milk daily under the New Jersey official grades program. Of these 23 dealers, one distributes raw milk only and 22 pasteurized milk only. Only a small percentage of milk is sold as raw.

Among the 23 dealers operating under the supervision of the Department of Agriculture, 14 are purchasing dealers, 5 producer-dealers and 4 both produce and purchase milk. A total of 357 producers is involved in the production of this milk.

When the New Jersey official grades were established, a rigid herd inspection system was introduced, which at the present time serves as a model for several other inspection agencies, both in New Jersey and in other states. During the fiscal year ending June 30, 1952, there were 21,329 cows examined in accordance with the grade regulations.

PHYSICAL EXAMINATION OF COWS
July 1951 to June 1952

| County | Herd Examinations | Animal Examinations | Animals Passed | Animals Isolated | Animals Condemned |
|---|---|---|---|---|---|
| Camden | 1 | 14 | 14 | .... | .... |
| Cumberland | 2 | 36 | 36 | .... | .... |
| Essex | 4 | 99 | 99 | .... | .... |
| Gloucester | 1 | 14 | 14 | .... | .... |
| Hunterdon | 231 | 7,079 | 6,980 | 95 | 4 |
| Mercer | 41 | 1,110 | 1,078 | 32 | .... |
| Middlesex | 1 | 16 | 16 | .... | .... |
| Monmouth | 2 | 61 | 60 | 1 | .... |
| Morris | 67 | 2,291 | 2,280 | 11 | .... |
| Salem | 34 | 843 | 822 | 21 | .... |
| Somerset | 284 | 7,878 | 7,768 | 109 | 1 |
| Sussex | 45 | 1,614 | 1,607 | 7 | .... |
| Warren | 7 | 274 | 274 | .... | .... |
| Totals | 770 | 21,329 | 21,048 | 276 | 5 |

| | Number | Per Cent |
|---|---|---|
| Herds in which all animals were passed | 591 | 76.75 |
| Herds in which animals were excepted | 179 | 23.25 |
| Animals passed | 21,048 | 98.68 |
| Animals isolated | 276 | 1.30 |
| Animals condemned | 5 | .02 |

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Another requirement of the New Jersey official grades is the physical examination of all employees on farms producing New Jersey Grade A Raw Milk and of employees in bottling plants handling the New Jersey grades of milk. Each man taking the medical examination was required to be examined by a physician once during the year and pronounced safe to handle milk. When the individual had met these requirements, a card of identification was furnished to that effect. There were 283 milk handlers' cards issued during the year. Laboratory examinations of specimens submitted by physicians in connection with physical examinations were made by the State Department of Health.

The importance of microscopic analysis of milk samples in determining causes of defect is amply demonstrated by the methods used in policing the New Jersey official grades. While this work is more complete, and incidentally more expensive, than ordinary methods of control, the results justify the extra effort. During the 21 years of this close microscopic supervision of the milk qualifying for New Jersey official grades, not one case of infectious disease has been traceable to the milk supply. During the year, 4,717 samples were collected for analysis.

## LIVESTOCK AUCTION MARKETS

The trend of sales in the livestock auctions in New Jersey indicates that the saturation point may have been reached, although a slight gain has been registered, particularly in the latter part of 1951. During the first six months of 1952, there was a definite reaction toward lower prices. During the fiscal year, 164,669 head of livestock were sold for a gross value of $13,040,665.32, with an increase in volume of 1.77 per cent over the previous year and an increase of only 1.24 per cent in gross receipts over the previous year. This compares with an increase of 38.99 per cent in gross receipts in 1950-51 over the previous fiscal year.

For a number of years, the price situation has been abnormal at the livestock auction markets. That prices are seeking a normal level is encouraging over a long range view, as the abnormal prices have undoubtedly taken from the farms a large number of heifers that should not have gone to the markets, but should have been raised for replacements. Cull animals that have reached the limit of their usefulness will still find a ready market and return to the farmer a price far above any he can secure by other marketing methods. With conservative management, livestock markets will return adequate dividends for many years to come.

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LIVESTOCK AUCTION MARKETS
July 1951 to June 1952

| | Head | Value |
|---|---|---|
| Flemington | 29,591 | $1,830,780.32 |
| Hackettstown | 43,698 | 3,721,003.61 |
| Mount Holly | 3,947 | 157,237.62 |
| New Egypt | 13,270 | 1,541,094.26 |
| Sussex | 36,970 | 2,827,042.75 |
| Woodstown | 37,193 | 2,963,506.76 |
| Totals | 164,669 | $13,040,665.32 |

## SPECIAL SERVICES

Monthly meetings have been held with the New Jersey Official Grades Milk Dealers Association. A number of promotional programs were discussed at these meetings, but due to existing conditions and the demands on the time of member-dealers, little progress has been made. However, there is an active interest in the association, and the outlook is encouraging, provided the present situation is stabilized.

The supervisor of dairy products standardization again served as a member of the program committee of the New Jersey Dairymen's Council and has attended every meeting of the Council during the year.

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## BUREAU OF FRUIT AND VEGETABLE SERVICE

The Bureau of Fruit and Vegetable Service deals generally with all activities connected with the marketing of fresh fruits and vegetables produced in New Jersey. The phases of work include: aid in the establishment and development of outlet facilities such as local auction markets and terminal markets in large adjacent cities; city market and consumer educational and promotional work to create greater demand for New Jersey products; assistance to growers and shippers in better grading and packaging to promote greater returns; and supervision of inspection and grading of fresh fruits and vegetables, under Federal or State standards, shipped to markets or delivered to processing plants.

It is important that a close relationship be maintained with producers so that the Division of Markets can assist in the ever-changing conditions that affect the marketing of some of the most important crops. It is the policy of the Division to keep abreast of all government regulations that affect the marketing of New Jersey crops to keep producers and shippers correctly informed. This relationship was maintained during this fiscal year, as in past years.

The service rendered by this Bureau within the Division of Markets is mainly the inspection and certification of New Jersey produced fresh fruits and vegetables, in accordance with Federal and/or State standards, to be marketed in the fresh form or used for processing. In New Jersey, the inspection service is operated under a three-way cooperative agreement between the U. S. and the New Jersey departments of agriculture and the New Jersey Agricultural Society. The responsibility of each organization is outlined in the agreement. The Federal and State departments are jointly responsible for the proper interpretation and application of grades, and general supervision of the conduct of the work. The Federal Department is responsible for training and supplying personnel as needed. The New Jersey Agricultural Society is responsible for collecting fees for services and paying costs of operation, including salaries and expenses of personnel employed as recommended by the chief of the Bureau and the director of the Division.

This arrangement was instituted in 1945 and has proved satisfactory to all parties. The amount of work has varied from year to year, influenced greatly by crop production and various types of controls and regulations. The agreement provides an area of mutual understanding between State and Federal governments, in which each party makes available a national and state service. Neither could render this service so effectively on a separate basis.

During the fiscal year shipping point inspections on all commodities, except for processing, amounted to only about 58 per cent of the last fiscal

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year. This was due mainly to a reduction in acreage and production of white potatoes, and discontinuance of Federal price support. While there was a material reduction of inspections of white potatoes, there was an increase of inspections on other commodities, such as apples, green corn and onions. Inspections on commodities other than white potatoes amounted to 237 per cent of the last fiscal year.

In the field of raw products for processing, the volume of commodities has continued to increase. This service has become increasingly important each year, and especially in the post-war period when the freezing of fruits and vegetables has grown phenomenally. This growth has been matched by the improvement in the quality of service performed by application of established inspection principles and procedure, and development of better training and visual aids. Much time and study is being given to improved mechanical devices which may eliminate or accurately check the human element, which is subject to error.

The many loads of raw products brought to inspection stations throughout the production areas in the State have given the service an opportunity to assist growers in carrying out better harvesting and marketing practices. The tactful observation by the inspector that the grower's percentage of high quality tomatoes, asparagus, peppers, carrots and other commodities could be materially increased by careful harvesting and handling has been of great value to the producers.

## PURPOSE OF INSPECTION

The shipping point inspection service is set up to aid in the orderly marketing of fresh fruits and vegetables. Commercial carlot, trucklot, warehouse and storage inspection at point of origin is made available through the shipping point inspection service. While not all cars and trucklots are inspected by this permissive service, sales of fruits and vegetables are generally based on U. S. Standards and official inspection and certification. This service provides an unbiased official certification at a reasonable cost upon the basis of which sales may be made to buyers at distant points within the United States and in foreign countries. It offers proof of compliance with State and Federal regulations and laws, export requirements and government purchase contracts.

Banks usually require some such certification before authorizing credit, and controversies between carriers, storage companies, shippers and buyers are customarily decided in accordance with the facts shown on the certificates covering such products as may be involved in disputes. It furnishes information to growers, shippers and receivers that enables them to trade on a basis of mutual understanding through uniform standards. The Bureau of Fruit

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and Vegetable Service, through the shipping point inspection service, assists New Jersey growers and shippers not only by inspection and certification, but also by giving advice on proper grading, packaging, loading and handling practices.

In the field of raw products for processing, most processors in New Jersey contract with growers for such products as asparagus and tomatoes, while some contract for apples, carrots, sweet potatoes, green tomatoes and red peppers. Contracts are based on Federal or State standards and prices are fixed between grower and processor in advance of the season. Each load delivered is sampled and samples are graded by inspectors supervised by Bureau personnel. The results obtained on the graded sample are applied to the entire load, thus determining the value of each load delivered. The price received by the grower is directly proportionate to the quality delivered.

In the application of this method of purchase, delivery of superior quality to the processor results in lower preparation cost of the finished product, giving the consumer a better product and lowering operational costs to the processor. This is reflected in setting higher contract prices which increases returns to all producers of such commodities. This system tends to encourage growers to produce and deliver a high quality raw product.

## CERTIFYING FRESH PRODUCE

### *Apples*

The inspection and certification of apples in New Jersey was a 12-month operation during this fiscal year. The total of 796 inspections for the year covered 365,648 bushels, an increase of 562 inspections and 247,759 bushels over last year. Inspections ranged from a low of two in July, 1951, covering only 840 bushels, to a high in November of 159 inspections, covering approximately 80,000 bushels.

Two government purchase programs—the Export Subsidy Program and the Surplus Removal Program—were largely responsible for the increase in volume inspected during this fiscal year. Under each, inspection was mandatory.

The Export Subsidy Program was first instituted in 1946 by an agreement between the governments of the United States and Great Britain. The program was designed to stimulate and promote greater movement of American apples into foreign markets. The terms of the original agreement provided that the U. S. Department of Agriculture would subsidize the purchase of fresh apples in this country by the British Government by an amount equal to one-half the current market value, provided such amount did not exceed $1.25 per bushel F.A.S. (Free Alongside Ship) at the United States port of

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export. The program was highly successful and was later extended to cover pears. It was also made available to a long list of other foreign countries.

The terms of the program have remained much the same through the years of operation. Briefly, it requires that all apples be certified by Federal-State inspectors as meeting the program specifications. These specifications provide for acceptable varieties, sizes and grades; they also require that all lots meet the U. S. Standards for Export and the provisions of the Export Apple and Pear Act. They also specify acceptable types of containers and packs. Purchasing was begun this year in August and discontinued March 31, 1952.

The Surplus Removal Program is a continuation of an old government purchase program originally instituted to aid growers by removing such surplus commodities from normal marketing channels. It operated as the Federal Surplus Commodity Corporation and covered the purchase of fruits and vegetables in times of distress, particularly during the depression years. In the past few years, purchases under this program have been confined to apples. Distribution has been curtailed to such outlets as the School Lunch Program, State hospitals and institutions and worthwhile charitable organizations. Funds for the purchase of apples under this program are provided under Section 32 (funds allocated to the Commodity Credit Corporation) and the established State Production and Marketing Administration offices are made responsible for the administration of the program within the individual producing states.

The terms under the Surplus Removal Program have varied from year to year. Each season the program begins with an announcement from the State PMA office. This season the announcement was made on October 3, 1951 and stated the terms under which apples would be purchased, including the period of time covered, grades, sizes, varieties, type of pack and prices. It also required, with certain reservations, that apples purchased meet the specifications of the U. S. Standards for Export. This year purchasing was begun the first week in October and was discontinued December 31, 1951 because of lack of interest on the part of the producers. Growers were generally convinced that their storage holdings did not indicate a surplus, and general market conditions provided better prices than those being offered under the Surplus Removal Program.

Another outlet for New Jersey apples this fiscal year was the Army Quartermaster Department, which supplies food to armed forces training bases at home and abroad as well as to the fighting forces in Korea, and other countries in which service men may be deployed.

During the harvesting and packing season each year certain growers pack under continuous inspection. Apples are inspected at time of packing and

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each package is identified by a State Lot Number and placed in storage. Inspection certificates are issued on the identifying number. This provides the grower with invaluable information when he later offers his apples for sale.

According to a summary of apple inspections made this fiscal year and the distributive purposes for which they were made, 85 lots containing 38,592 bushels on the Surplus Removal Program, 256 lots containing 81,675 bushels on the Export Subsidy Program, 171 lots containing 71,163 bushels were exported through normal commercial export channels, 70 lots containing 41,739 bushels moved by the Quartermaster Corps and 213 lots containing 132,029 bushels inspected at packing houses, in storages or for domestic commercial shipment.

### *Green Corn*

In 1945 the Cooperative Growers' Association, Inc., in Beverly, entered into an agreement with several large chain store organizations to deliver field-fresh green corn each day to stores located within convenient truck-hauling distances. The program was successful and has been continued each year. The original purpose of the program was not only to assist in the movement of the tremendous volume from Burlington County, but to supply consumers with field-fresh corn. The volume moved each year has fluctuated considerably, depending upon the production. The program has become essential to the green corn industry in Burlington County, and all present indications point to a progressive enlargement from year to year.

The growers participating in the program begin their daily harvesting operations around midnight. Light is supplied by spotlights attached to their tractors. The corn harvested in the early morning hours is graded, packed, inspected, loaded and shipped between 3:30 a. m. and 5:00 a. m. The loaded semi-trailer trucks make deliveries to chain super-markets in Philadelphia and nearby areas. When the stores open for the daily business, they are able to offer to the housewife corn which is as field-fresh as possible. Corn destined for distant shipments is packed and loaded almost all day and into the night, with time out during the hottest part of the day.

Most seasons only one inspector is needed to certify the grade of each lot. This year, two men were assigned during peak movement. These men were on the job by 3:30 a. m. and often worked until 11:00 p. m., with only a few hours off each afternoon. Only experienced men are assigned, working under the supervision of the Bureau of Fruit and Vegetable Service.

The volume of this year's crop was greater than any previous year. Quality also was the best ever. During the growing season, moisture was sufficient to develop the ears fully, and growers followed a dusting program

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which resulted in complete control of worms and borers. Most of the lots shipped graded U. S. Fancy, and only one lot fell below the U. S. No. 1 grade.

Green corn was also sold by the market to receivers other than those participating in the "field-fresh" program. These lots were shipped outside of the areas considered as nearby, and shipments were made throughout the day with no set hours for delivery.

The shipping season for green corn is extremely short in comparison with most other crops. This makes it mandatory to move a tremendous volume within approximately three weeks and everyone connected with the deal must work almost continuously during the harvesting season.

This fiscal year the season began on July 5 and, from the standpoint of commercial importance, ended August 4, 1951. During July, 87 lots were inspected and certified out of a total of 92 lots for the season. Volume amounted to 50,794 packages. During the 1950 season, 67 lots were certified, covering 22,658 packages. Packages consisted of open-mesh sacks, bushel baskets and wire-bound crates, each containing from 50 to 55 ears.

### *White Potatoes*

Unlike the growing season of 1950, when weather conditions were ideal for the growing of potatoes, the 1951 growing season was beset with general drought conditions, with intermittent periods of rain which did not produce a sufficient amount of moisture for vigorous vine growth and good yields. Production figures in the Department's Annual Potato Summary for 1951 show that average production was 62 bushels per acre less than in 1950, when the yield per acre was 329 bushels, an all-time high for New Jersey. The crop was further reduced by a decline in acreage of approximately 10,000 acres.

Again this fiscal year, potato shipments were regulated under a Federal Marketing Agreement and Order, but the Federal Price Support Program was discontinued. Briefly, a Federal Marketing Agreement and Order permits growers and shippers of a product in a given area to control the commercial marketing of their own crop by setting up measures regarding minimum grades and sizes, with certain reservations as specified in the order. A committee, composed of growers and shippers and chosen by members of the group which they represent, is charged by the U. S. Secretary of Agriculture with the responsibility of enforcing the provisions of the agreement.

In New Jersey the potato marketing committee consisted of eight growers and four dealers, each with an alternate. The committee recommended that for the crop of 1951-52, the areas in New Jersey to be regulated be permitted to ship into commercial markets only potatoes conforming to certain grades and sizes. The requirements made by the committee and approved by the

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Secretary of the U. S. Department of Agriculture became mandatory under the marketing order.

Grades and sizes permitted to be sold commercially this crop year included U. S. No. 1 or better, and U. S. Commercial, with 85 per cent U. S. No. 1 quality; with minimum size for these grades of not less than 2 inches in diameter; also, U. S. No. 1—Size B. Size B potatoes range from 1½ to 2 inches in diameter. The order specified that the above grades and sizes meet the specifications as prescribed and defined in the U. S. Standards for Potatoes, including the tolerances listed. Under the order, inspection and certification was mandatory on all potatoes of the above grades and sizes in shipments of lots in excess of 3,000 pounds.

Certain other grades and sizes were permitted to be moved without inspection when going into channels of trade other than commercial domestic markets, including export, processing, livestock feed and seed. The movement of potatoes in the above channels was controlled by the marketing committee: however, they were permitted to move only under a "certificate of privilege" issued by the committee. Potatoes moving in the following channels were exempt from all control regulations: Ungraded potatoes moving to grading sheds or storage houses within the production area, and shipments sold to the Federal government under programs authorized by the Secretary of Agriculture.

Shortly after the 1951-52 season got under way, it was obvious to New Jersey shippers that their potatoes were being well received. During the heavy digging and shipping season prices were not high, but were consistently above prices for potatoes from competing areas. Orders were repeated, and New Jersey shippers continually broadened their field of distribution. Most of the markets that had been lost under several years of Government support programs were regained. Compliments on quality from members of the trade in all markets handling New Jersey potatoes were communicated to New Jersey shippers.

No doubt, the Marketing Agreement was a good thing for the potato industry in New Jersey. However, without a staff of some 45 experienced inspectors employed by the State Agricultural Society to inspect and certify each shipment in accordance with the U. S. Standards, it is possible that the deal would have been much less successful.

Prices began to show an upturn early in September and continued to rise slowly for high quality stock. During October, prices to growers advanced about 50 per cent. Stocks cleaned up quite fast and prices continued to advance. The Marketing Agreement controls expired for the crop year at the end of December, but there was no stock of any consequence remaining in New Jersey storages.

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Early in January 1952, OPS announced that because white potatoes were the single most important vegetable crop in the United States and rising prices of this crop threatened adversely the accomplishment of the aims of the Defense Production Act of 1950, as amended, a ceiling price for white potatoes at all levels except retail was established, effective January 19, 1952.

The regulation came too late to affect growers and shippers in New Jersey, but it met tremendous opposition from the potato industry throughout the nation. In spite of the opposition, OPS attempted to enforce the regulation, resulting in a confused situation, with most potatoes going into black market channels and legitimate dealers closing shop. The U. S. Senate voted to remove ceilings from all fresh fruits and vegetables. Before the House acted upon the bill, OPS decided it would be impossible to enforce the regulation, and enforcement was discontinued before the bill became law on June 6.

During 1950-51, the shipping point inspection service in New Jersey inspected and certified 18,429 lots of potatoes covering 8,057,418 hundredweights. This fiscal year, 9,989 lots were inspected covering 2,893,563 hundredweights.

## CANNERY CROPS

### *Asparagus*

The grading and certification of asparagus for processing entails the use of more personnel than any other single operation in this Bureau. The reason is obvious when it is understood how competitive processors are in their bids for contracts with the producers.

In order to secure contracts, most processors attempt to reduce time and effort on the part of their growers in making deliveries. In this connection, many receiving stations are established at strategic locations throughout the producing areas. The establishment of these stations makes it convenient for growers in a given area to make short hauls, thereby saving considerable time. Other things being equal, growers are inclined to contract with the processor who has a receiving station most convenient to them.

As in past seasons, most contracts between processors and growers this year were based on the New Jersey Standards for Green Asparagus for Processing. Contracts deviated from the actual specifications only in diameter and length of spears. The standards are written with a proviso which permits such a deviation, provided that such change is stated in contracts between producers and processors. For the past several years, contracts have specified

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a maximum length of 7 inches and a minimum diameter of three-eighths of an inch, determined at the base of the spear. Contract specifications relating to length of green color, freshness and quality factors were unchanged from those contained in the grade. Growers were paid for all asparagus meeting the following specifications: N. J. No. 1 quality, 7 inch spears with not less than 4½ inches of green color, ⅜-inch minimum diameter at base.

The percentage of pay weight was determined for each lot delivered. Samples were taken from each lot upon delivery and graded by the inspectors. Analysis of the samples determines the percentages of pay weight, off-grade and butts. Such percentages are applied to the entire lot from which the sample is taken and establishes the value based upon the contract price. No payment is made to growers for asparagus below N. J. No. 1 quality or for butts (that part of the spear in excess of the maximum specified length).

Approximately 17,000 acres of asparagus were contracted to processors this season, an increase of about 1,000 acres over last year. The increase in acreage was offset by a lower yield and generally poorer quality, mainly due to adverse weather throughout the season. There were 27 receiving stations throughout the producing areas operated by five processors and eight brokers. Fifty inspectors were assigned to grading.

Although most asparagus is contracted on the basis of the New Jersey Standards, considerable volume is delivered on grower-canner contracts without any particular reference to the standards. The terms of the contracts state specifically what the acceptable quality shall be, enabling the inspectors to grade in accordance with the specifications as stated. This type of contract has gradually lost favor, and this season receipts were greatly diminished.

In the spring of 1951, under contracts based on the New Jersey Standards, 47,934,356 pounds of asparagus were graded for processing. Of this amount, an average of 74 per cent conformed to grade and size specifications for which growers were paid at contract prices. An average of 7 per cent was below the grade and size specifications for pay weight, and an average of 18 per cent was classified as butts.

This season, under the same contracts, 44,388,836 pounds were graded. An average of 73 per cent met grade and size specifications; 8 per cent was below grade and size specifications, and 19 per cent was classified as butts.

Under canner-grower contracts a comparison of the two seasons was as follows: For the 1951 season inspectors graded 7,912,956 pounds with averages of 86 per cent pay weight, 3 per cent contract culls and 11 per cent butts.

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For the 1952 season, 3,767,846 pounds were graded with averages of 89 per cent pay weight, 1 per cent culls and 10 per cent butts.

There were approximately 1,000 more acres of asparagus contracted for processing this year than last. Under all contracts during the season of 1951, a total of 55,847,312 pounds of asparagus was graded. This year, the total was 48,156,682 pounds or 7,690,630 less than a year ago.

The greatest single factor affecting the production and quality of asparagus is weather. Asparagus grows slowly or not at all during cold and rainy weather, and rapidly during hot and dry weather. It needs plenty of moisture and temperatures ranging between 70° and 80° for best growth. Also, the two most prevalent factors affecting the quality of asparagus for processing are directly or indirectly attributable to weather. Insect damage, caused almost entirely by the asparagus beetle, cannot be controlled effectively unless weather is just right for dusting. Unless growers are prepared and ready to take to the fields with dusting equipment as soon as conditions become favorable, serious damage may result from beetle infestation. Even a few hours will make a material difference. Thus, it can be said that quality insofar as beetle damage is concerned is indirectly affected by weather.

On the other hand, spreading tips, another prevalent factor affecting quality, is caused by too rapid growth in periods of hot, dry weather. Growers can do little to control this defect, since spears which are too short to be cut one day will grow and spread before they can be cut the next day. This would not occur with sufficient moisture and moderate temperatures.

Weather conditions during the entire season in the spring of 1951 were generally good and growers did an excellent job of controlling beetles. Moisture was ample and temperatures remained generally favorable for good growth. The result was reflected in high yield and good quality.

At the beginning of the 1952 season, adverse weather took command. Throughout May, temperatures were too low to stimulate good growth and excessive rain prevented control of beetles. Therefore, volume was considerably below normal for May deliveries, and quality was comparatively poor, due mainly to beetle damage. Following the excessive rain and subnormal temperatures in May, the weather during June was hot and dry. Growers were successful in combating and controlling beetles, but the hot weather caused too rapid growth and quick spreading of tips.

Both production and quality were below normal for the entire season. Most processors closed operations a week to ten days earlier than usual, and no one was able to secure sufficient supplies to meet his pre-season anticipated pack.

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DELIVERIES AND AVERAGE GRADES OF ASPARAGUS FOR PROCESSING
BASED ON NEW JERSEY STANDARDS
1952

| Week Ending | Loads Inspected | Total Pounds | N. J. No. 1 3/8 Inch Min. | PER CENT N. J. No. 2, N. J. No. 1 Small and Culls | Butts |
|---|---|---|---|---|---|
| April 26 | 387 | 220,150 | 61 | 15 | 24 |
| May 3 | 2,544 | 2,068,832 | 72 | 9 | 19 |
| 10 | 4,745 | 5,998,824 | 72 | 10 | 18 |
| 17 | 4,252 | 5,762,558 | 73 | 8 | 19 |
| 24 | 4,503 | 4,985,760 | 75 | 8 | 17 |
| 31 | 5,045 | 5,863,742 | 74 | 6 | 20 |
| June 7 | 5,303 | 6,145,228 | 74 | 6 | 20 |
| 14 | 5,399 | 5,677,388 | 72 | 8 | 20 |
| 21 | 4,983 | 4,428,330 | 68 | 11 | 21 |
| 28 | 3,528 | 2,700,722 | 70 | 11 | 19 |
| July 5 | 749 | 537,302 | 68 | 12 | 20 |
| Season | 41,438 | 44,388,836 | 73 | 8 | 19 |

DELIVERIES AND AVERAGE GRADES OF ASPARAGUS FOR PROCESSING
BASED ON CANNER-GROWER CONTRACTS
1952

| Week Ending | Loads Inspected | Total Pounds | Pay Weight | PER CENT Contract Culls | Butts |
|---|---|---|---|---|---|
| April 26 | 14 | 10,404 | 82 | .... | 18 |
| May 3 | 254 | 190,774 | 88 | .... | 12 |
| 10 | 559 | 626,824 | 89 | .... | 11 |
| 17 | 485 | 456,790 | 90 | .... | 10 |
| 24 | 269 | 151,980 | 98 | .... | 2 |
| 31 | 329 | 171,666 | 99 | .... | 1 |
| June 7 | 612 | 661,232 | 88 | .... | 12 |
| 14 | 637 | 657,798 | 88 | .... | 12 |
| 21 | 573 | 507,348 | 85 | 1 | 14 |
| 28 | 478 | 303,960 | 88 | .... | 12 |
| July 5 | 58 | 29,070 | 95 | .... | 5 |
| Season | 4,268 | 3,767,846 | 89 | 1 | 10 |

## *Tomatoes*

From the standpoint of quality and average yield per acre, the 1951 cannery tomato crop was the most successful since the inception of the grading service in New Jersey. The beginning of the season was similar to that of most tomato seasons. Early deliveries are usually comparatively low in quality, due mainly to discolored radial stem cracks generally occurring on the crown-set fruit, and to poorly colored tomatoes picked prematurely by pickers who had not adjusted their sights from market to cannery color or had not received proper instructions in picking tomatoes for processing.

Such was the case this year when the season opened the last week in July, with only a small volume of relatively low quality stock being delivered to

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processors in Salem and Cumberland counties. Volume increased slowly during the first week in August, accompanied by an improvement in quality. Starting with the second week in August, volume deliveries increased rapidly and continued steadily to the season's peak during the last week in the month. After September 1, both volume and quality began to drop lower. The amount was almost unnoticeable during the first week, but thereafter tapered off more rapidly.

Weather conditions were favorable throughout the growing and harvesting season. There was little rain in the heavy producing areas and, at times, temperatures were too high for the good of the crop. However, there was no material loss of fruit due to hot weather, and the absence of rain made it possible for growers to harvest and deliver their entire production.

Twelve processors purchased tomatoes on the basis of the U. S. Standards for Tomatoes for the Manufacture of Strained Tomato Products. Grading service was performed by Federal-State inspectors stationed at 17 receiving stations located throughout the main production areas. One other processor had only part of his receipts graded in accordance with the above standards for statistical purposes. His contract was based on a flat rate per ton, and prices to growers were not affected by the results of grading.

The total volume graded was 215,875 tons and the season's average grades were 70 per cent U. S. No. 1, 28 per cent U. S. No. 2, and 2 per cent culls. The 1950 crop figures show a total volume graded of 195,697 tons, with average grades of 69 per cent U. S. No. 1, 29 per cent U. S. No. 2, and 2 per cent culls.

The 1951 average yield of 9.84 tons per acre was the highest ever recorded for New Jersey.

SUMMARY 1951 CANNERY TOMATO SEASON AND COMPARISON WITH PREVIOUS TEN YEARS

| Seasons | Total Tons | U. S. No. 1 (Per cent) | U. S. No. 2 (Per cent) | Culls (Per cent) |
|---|---|---|---|---|
| 1951 | 215,875 | 70 | 28 | 2 |
| 1950 | 195,697 | 69 | 29 | 2 |
| 1949 | 147,076 | 63 | 34 | 3 |
| 1948 | 132,561 | 60 | 36 | 4 |
| 1947 | 204,395 | 62 | 35 | 3 |
| 1946 | 107,737 | 65 | 33 | 2 |
| 1945 | 73,549 | 64 | 33 | 3 |
| 1944 | 112,801 | 68 | 31 | 1 |
| 1943 | 149,786 | 66 | 32 | 2 |
| 1942 | 179,363 | 55 | 42 | 3 |
| 1941 | 220,655 | 63 | 35 | 2 |

## *Other Cannery Crops*

Although asparagus and tomatoes are the two main crops for processing upon which the grading service is requested, 693 tons of red sweet peppers,

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494 tons of green tomatoes, 2,758 tons of carrots and 182 tons of sweet potatoes were also graded. These products were graded on the basis of the U. S. Standards for Processing for the respective commodity.

*Other Vegetables*

This season, the program under which local brokers have bought and shipped asparagus to Canada for processing for the past several years broke down almost completely. One reason for this was lower than normal production which kept market prices generally at a level above which Canadian buyers could pay and pack profitably. The other reason was the hot, dry weather, which caused quality to drop below the minimum Canadian import requirements for fresh asparagus. During May and June, 1951, 46 shipments of asparagus were made containing 68,765 crates. These were inspected and certified for grade and compliance with Canadian regulations governing imports. This season (1952) in the same two months only 10 lots containing 13,622 crates were certified for Canadian shipment.

In addition to the main products for fresh market or processing covered in detail in this report, shipments and storage lots of such products as cabbage, cucumbers, peaches, sweet peppers and sweet potatoes were also inspected and certified. A total of 69 lots was inspected covering 31,103 packages. Federal-State inspectors were also stationed at several of the fruit and vegetable auction markets for inspection and arbitration purposes.

While the main project of this Bureau is the inspection and certification of New Jersey produced fruits and vegetables for intra or interstate shipment, it is also responsible for making inspections at the request of receivers at various New Jersey terminals. Most of these requests are on potatoes. Most of the potatoes inspected during this fiscal year were reshipped by the Quartermaster Corps to nearby armed service bases. However, many inspections are made on incoming potatoes to be sold for seed to New Jersey growers.

Three full-time inspectors, in addition to the chief of the Bureau, are Federal Collaborators under Letter of Authorization. This authorization from the U. S. Department of Agriculture entitles them to make inspections on interstate shipments of produce arriving in New Jersey terminals. It also entitles them to certify the products inspected on a straight Federal certificate rather than the Federal-State type used for shipping point work.

During this fiscal year, these men made 108 terminal inspections on such products as apples, bananas, cantaloupes, celery, grapefruit, grapes, honeydew melons, lettuce, onions, oranges, potatoes, rutabagas and watermelons. Some of these products were inspected for delivery to State hospitals and institutions.

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TEN-YEAR RECORD OF SHIPPING POINT INSPECTIONS BY PRODUCTS

| | 1942-43 | 43-44 | 44-45 | 45-46 | 46-47 | 47-48 | 48-49 | 49-50 | 50-51 | 51-52 |
|---|---|---|---|---|---|---|---|---|---|---|
| Apples | 609* | 151 | 408 | 47 | 349 | 213 | 100 | 789 | 234 | 796 |
| Asparagus | .... | .... | 16 | 6 | 44 | 3 | 50 | 93 | 46 | 10 |
| Beans | 7 | 2 | 3 | 1 | .... | .... | .... | .... | 1 | .... |
| Beets | 3 | 6 | 3 | 17 | .... | .... | .... | .... | 1 | .... |
| Cabbage | 1 | 3 | 22 | 14 | 4 | 13 | 3 | 8 | 5 | 4 |
| Carrots | 3 | 16 | 4 | 3 | 2 | 5 | 5 | 6 | .... | .... |
| Cauliflower | .... | .... | .... | .... | .... | 1 | 5 | 2 | .... | .... |
| Celery | .... | .... | 1 | 2 | 6 | 11 | 5 | 2 | .... | .... |
| Corn | .... | .... | 1 | 51 | 82 | 100 | 91 | 37 | 67 | 92 |
| Cucumbers | .... | 6 | 8 | 3 | 1 | 2 | 3 | 8 | .... | 1 |
| Eggplant | .... | 1 | 12 | 3 | .... | .... | .... | .... | .... | .... |
| Lemons | .... | .... | .... | .... | 1 | 1 | .... | 1 | .... | .... |
| Lettuce | 1 | .... | 20 | 2 | 4 | 1 | 4 | 1 | 2 | .... |
| Onions | 2 | .... | 3 | 26 | 10 | 38 | 36 | 28 | 15 | 42 |
| Onions, green | .... | .... | .... | .... | .... | .... | 10 | .... | .... | .... |
| Parsley | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... |
| Parsnips | .... | .... | 11 | 7 | .... | .... | .... | .... | .... | .... |
| Peaches | 1 | 1 | 3 | 7 | 3 | .... | .... | 1 | 1 | 5 |
| Peppers | .... | 17 | 52 | 50 | 12 | 78 | 36 | 48 | .... | 5 |
| Potatoes | 2,941 | 5,206 | 2,827 | 5,994 | 11,333 | 14,066 | 12,586 | 10,454 | 18,429 | 9,989 |
| Radishes | .... | .... | 1 | .... | .... | 1 | 7 | 3 | .... | .... |
| Rhubarb | .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... |
| Rutabagas | .... | .... | .... | 2 | .... | .... | .... | .... | .... | .... |
| Spinach | 30 | 1 | 13 | 17 | .... | 1 | .... | 2 | .... | .... |
| Squash | .... | .... | 7 | 1 | .... | .... | .... | 1 | 6 | .... |
| Sweet Potatoes | 19 | 47 | 178 | 20 | 41 | 5 | 33 | 5 | 26 | 12 |
| Tomatoes | .... | .... | .... | .... | .... | 6 | .... | 1 | 1 | .... |
| Turnips | .... | 1 | 2 | 21 | 15 | 2 | .... | 1 | .... | .... |
| Mixed fruits and vegetables | .... | .... | .... | .... | .... | 357 | 684 | 550 | .... | .... |
| Mixed vegetables | 4 | 9 | 77 | 65 | 31 | 210 | 155 | 128 | 3 | .... |
| Totals | 3,621 | 5,467 | 3,672 | 6,361 | 11,938 | 15,114 | 13,813 | 12,170 | 18,837 | 10,956 |

*Includes 97 certificates issued on "cider apples according to contract."

## MARKET ACTIVITIES

There have been no new developments in fruit and vegetable markets during the year. The cooperative work with nine shipping point auctions and three city markets has continued on the same basis as in former years. Cordial relations exist with the operators of other city markets in the State. No services have been rendered by Division personnel to these other markets.

The market system for fruits and vegetables described in the previous year's report under this heading has continued to serve the public in New Jersey in a satisfactory manner. At the present time, there appears to be no need for additional wholesale markets. Those operating in the State are strategically located to serve producing areas and at the same time are convenient to the wholesale buyers. The Trenton Farmers' Market, which sells at retail to consumers, still serves as a model for the retail type of market. In the future, a similar market, owned and operated by farmers, might be located in one or more cities in the metropolitan area. Camden is served by a retail

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farmers' market operated by the city, and Perth Amboy served by a privately operated farmers' market.

Continued improvements were made during the year at the city markets, especially at the country shipping point markets. Buyers have been consulted regularly through meetings and by the market managers. Suggestions by the buyers have been given full consideration, and where deemed practical, have been put into effect. These have consisted of more inspection by graders supplied by the Bureau, and some changes in packages used by the farmer-members. Some slight changes in hours of sale have been made at the request of buyers. During the year the Garden State Branch of the United Fresh Fruit and Vegetable Association has been quite active in New Jersey, and some of the auction associations have joined the Branch with the intention of working more closely with this national dealers' association.

The Bureau works closely with the organizations or associations operating farmers' markets. The weekly reports from 11 of these markets have been made regularly as in former years. This material is used in a number of ways. The figures are used to determine the volume of commodities and prices in promotional and statistical work, and to supplement the information of the Bureau of Agricultural Economics of the USDA. Representatives of the Division work with directors, committees and managers of the associations, and attend all annual meetings and most of the directors' meetings and special meetings on request. The result of such endeavors is reflected in the success and new developments in these associations.

*Shipping Point Auction Markets*

As in former years, the report on these markets covers the calendar year rather than a State fiscal year. This is necessary in order to present a true picture of activities. Therefore, the entire marketing season of 1951 and information on the first six months of 1952 is given.

Prices for all fruits and vegetables were slightly higher in 1951 than in 1950, but the gain in price was more than offset by increased production costs. Growers experienced a much better financial return in the 1952 crop year. The average price for all commodities at the auctions was 17.75 per cent higher during the spring of 1952 than the prices during the first six months of 1951. The increase would have been even higher but for the slightly lower returns for asparagus, which made up almost one-half of the total value of the sales in the spring of 1952.

Some idea of the situation reflecting returns to growers in the spring of 1952 can be obtained by the statistics on four commodities sold on these markets which accounted for 77 per cent of the total volume and 87 per cent of gross value at the auctions.

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The markets handled 106,784 bushels or crates of spring greens—dandelion greens, broccoli-rabe, turnip tops, spinach and other leaf vegetables. The volume was about 5 per cent over that of the spring of 1951, and the price averaged $1.63, compared with $1.03 in 1951.

Asparagus, which sold at a lower figure, is the most important spring vegetable. In the spring of 1952, sales amounted to 434,190 crates (30 pounds) with gross receipts totaling $1,699,318.71. Returns to growers were 7.7 cents per crate lower than in 1951. There were 229,852 crates of lettuce sold, 17,561 crates less than in 1951. Prices averaged 7.7 cents per crate higher than in 1951.

The strawberry crop amounted to only about two-thirds of the volume marketed in 1951. However, prices were much better. In May and June this year, the auctions handled the equivalent of 82,898 crates (24 quarts) each as compared with 121,866 crates last year. The price per quart averaged 31.1 cents this year, compared with 23.5 cents last year. The packages used for strawberries have changed. When these markets were organized 20 to 25 years ago, all strawberries were sold in a 32-quart crate. In a few years, this changed to a 24-quart crate. In recent years, the trend has been to smaller packages, and the bulk of strawberry shipments are now made in 16-quart crates. In the spring of 1952, 113,744 of the 16-quart crates and only 7,069 of 24-quart crates were used.

SUMMARY OF SALES AT FRUIT AND VEGETABLE AUCTION MARKETS

| Market | Season of 1951 Packages Sold | Season of 1951 Value of Sales | Season of 1950 Packages Sold | Season of 1950 Value of Sales |
|---|---|---|---|---|
| Beverly | 324,319 | $317,776.43 | 302,788 | $299,898.36 |
| Beverly Consigned and Special | 341,000 | 602,873.00 | 413,918 | 493,568.07 |
| Cedarville | 810,492 | 1,444,805.73 | 731,536 | 1,293,523.79 |
| Glassboro | 359,643 | 611,241.02 | 433,401 | 755,194.81 |
| Hammonton | 238,458 | 683,856.15 | 150,082 | 441,895.32 |
| Hightstown | 319,801 | 372,156.41 | 326,449 | 329,888.00 |
| Hightstown Special Sales | 30,597 | 51,784.95 | 65,152 | 103,084.75 |
| Landisville | 512,174 | 799,551.08 | 444,732 | 602,995.35 |
| Landisville Consigned and Special | 98,983 | 148,698.00 | 130,485 | 186,590.00 |
| Pedricktown | 162,831 | 484,289.91 | 148,729 | 395,467.74 |
| Swedesboro | 866,456 | 2,015,557.00 | 830,190 | 1,722,919.62 |
| Vineland | 897,891 | 1,276,490.70 | 767,308 | 1,094,592.58 |
| Totals—by auction | 4,492,065 | $8,005,724.43 | 4,135,215 | $6,936,475.67 |
| —all sales | 4,962,645 | $8,809,080.38 | 4,744,770 | $7,709,718.49 |

Average price per package (by auction), 1951 $1.782
Average price per package (by auction), 1950 $1.677
Per cent of increase in price per package, all commodities 1951 over 1950 6.26
(In addition to markets listed, other markets may have had special sales, no record of which is available in Division of Markets office.)

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The supervisor of fruit and vegetable standardization has devoted the greater part of his time to these important shipping point auction markets. He has also worked with the buyers on the markets and aided in solving several problems that have arisen over farmer and buyer differences.

He has helped increase the use of new packages designed to meet market demand. Among these are the standardized asparagus crate, the wire-bound crate for packaging sweet potatoes, which may eventually replace the bushel hamper, a special lug box for market tomatoes which is needed for long distance shipment of tomatoes, the 16-quart wire-bound strawberry crate, and a standardized eastern lettuce crate.

### *City Farmers' Markets*

There has been no change in city markets, and as they now operate they provide adequate outlets for farmers desiring to use this type of facility. The Division has continued to cooperate closely with the management of these markets. Visits to the markets have been made by Department personnel and aid given to managers, principally through advice or in obtaining requested information.

As in former years, the Division has received regularly weekly statistical information from the farmer-owned market in Newark and from the municipal market in Atlantic City. A summary of 20 years' activities covering the Atlantic City Market was developed for the use of the county agricultural agent in Atlantic County and for the manager of the Market. The weekly reports from the Newark market were made available to the Trenton office of the Bureau of Agricultural Economics. The Federal Bureau summarized the material according to all fruits and vegetables sold, and used the material in supplementing its figures on volume of sales and prices obtained by New Jersey farmers.

The Atlantic City Market sold fewer farmers' loads in 1951 than in 1950. Volume of sales of fruits and vegetables and of eggs was lower, but sales of poultry were considerably higher. During the year, 410,010 bushels of produce were handled, compared with 514,944 bushels in 1950-51. Only 130,148 dozens of eggs were sold, compared with 150,801 dozens in 1950-51. There were 113,180 pounds of poultry handled, compared with 96,621 pounds in 1950-51. Total value of all sales was $790,856.38, compared with $985,602.75 in 1950-51.

Sales at Newark were also lower this past year. There were 5,162,369 bunches of vegetables sold compared with 7,038,843 bunches in 1950-51.

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PRINCIPAL COMMODITIES SOLD AT FRUIT AND VEGETABLE AUCTION MARKETS

VOLUME IN 1951 WITH 1950 COMPARISONS

| Commodity | Unit | 1951 | 1950 |
|---|---|---|---|
| Apples | Bushels | 24,780 | 16,981 |
| Peaches | Bushels | 254,811 | 262,316 |
| Blackberries | Crates, 24 quarts | 6,955 | 5,197 |
| Blueberries and huckleberries | Crates, 12 pints | 88,520 | 41,710 |
| Raspberries | Crates, 12 pints | 26,520 | 23,635 |
| Strawberries | Crates, 24 quarts | 122,753 | 69,826 |
| Asparagus | Crates, doz. bunches | 419,350 | 419,389 |
| Beans, lima | Bushels | 52,405 | 67,697 |
| Beans, snap | Bushels | 121,855 | 127,717 |
| Beets | Bushels | 18,965 | 13,563 |
| Broccoli-rabe | Bushels | 62,992 | 42,485 |
| Cabbage | Bushels | 45,412 | 56,910 |
| Cantaloupes | Bushels | 26,284 | 35,138 |
| Carrots | Dozen bunches | 4,412 | 1,555 |
| Carrots | Bushels | 320 | 2,329 |
| Cauliflower | Crates, 1½ bushels | 5,527 | 9,177 |
| Corn, sweet | Bushels or sacks | 119,217 | 117,116 |
| Cucumbers and pickles | Bushels | 235,468 | 196,054 |
| Dandelion | Bushels | 37,227 | 33,732 |
| Eggplants | Bushels | 113,229 | 95,467 |
| Lettuce | Crates, 2 dozen | 246,990 | 217,987 |
| Okra | Climax baskets, 12 qts. | 41,274 | 36,081 |
| Onions | Sacks, 50 lbs. | 176,770 | 161,625 |
| Parsley | Bushels | 18,454 | 25,416 |
| Peppers | Bushels | 747,608 | 643,581 |
| Potatoes, sweet | Bushels | 301,721 | 303,752 |
| Potatoes, white | Sacks, 100 lbs. | 48,983 | 81,802 |
| Radishes | Bushels | 12,584 | 11,734 |
| Rape | Crates | 12,445 | 23,995 |
| Scallions | Bushels | 4,698 | 6,529 |
| Spinach | Bushels | 6,086 | 5,531 |
| Squash | Bushels | 38,755 | 28,883 |
| Tomatoes | Climax baskets | 862,941 | 799,173 |
| Watermelons | | 13,005 | 12,610 |
| Miscellaneous | Packages | 271,732 | 162,788 |

Packaged fruits and vegetables totaled 1,189,655, compared with 1,539,424 the previous year. The agricultural areas in the northeast section of the State are being built up rapidly, and many farms formerly supplying the Newark market are now entirely built up or are much smaller in acreage. This is also true throughout the Passaic River valley and in other parts of Essex, Passaic and Bergen counties supplying the Paterson Market.

The Trenton Farmers' Market had an excellent season. The large volume of consumers patronizing this retail market taxed its facilities, especially on Friday nights. Some merchants of household goods in Trenton who cater to farmers have established small stores on property owned by the market association. These merchants recognize the parking problems in Trenton. Under conditions at the market, parking near the store is no problem and sales at

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the market store have been substantial. The market, because of the increased revenue from non-farmer members, has had to give up its exemption from Federal income tax.

*Miscellaneous Activities*

The Bureau, through the work of its supervisor of fruit and vegetable standardization, has continued to work closely with the College of Agriculture in instructing vocational agricultural classes in the proper packing of apples. This has culminated each year in local apple packing contests and in the State contest of Vo-Ag pupils during Farmers Week. At this event, the supervisor again conducted the contest and judged the work of contestants.

The Cooperative Marketing Associations in New Jersey, Inc. continued to serve marketing interests as in former years. While the association represents livestock and poultry and egg groups, its greatest activity is in the fruit and vegetable auction service. The association holds its annual business meeting and dinner each year in November, and the fruit and vegetable section holds monthly meetings throughout the spring and summer months. The organization finances the publication, *Auction News*, referred to under the report devoted to Market Reporting and Cooperatives, and also advertising in trade papers. During the year, it sponsored the selection and presentation of a Vegetable Queen to represent New Jersey at the annual meeting of the Vegetable Growers' Association of America, held in December in Atlantic City. This section also held its annual dinner for auction buyers in March. The State association sponsored the Cooperative Interests Dinner during Farmers Week.

The Bureau continued to aid individual farmers in general or specific marketing problems, and it also has cooperated with other agencies in matters pertaining to marketing.

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## BUREAU OF POULTRY SERVICE

The past year was the twenty-ninth since the poultry improvement plan was undertaken and the twenty-first since poultry products cooperative marketing under State supervision was successfully inaugurated in New Jersey. During the year, the highest records in achievement were established for both of these principal projects of the Bureau of Poultry Service.

Poultry Standardization—There were 956,768 birds certified in 701 flocks in 18 counties, with 119 hatcheries cooperating. The number of birds participating was 13.8 per cent greater than the previous record high of 840,768 birds in 1950-51. The fact that approximately 30 million chicks and poults—three out of every four hatched in New Jersey last year—were produced from flocks under Bureau supervision, provides a statistical measure of the value of this service project.

Egg Grading and Inspection—There were 1,240,986 cases marketed through seven marketing associations, five of which are under official grading programs. Also, the Bureau supervised inspection of 314,177 cases in nine candling-cartoning projects under the Federal-State grading program. The year closed with 16 independent marketing projects participating in the newly expanded State consumer grading program, with a total of 236,550 cases. Recently admitted to the official grading program under a special plan, one bargaining cooperative increased the total by 141,699 cases inspected during the past six months. Therefore, the egg sales volume of projects cooperating with the Bureau was 1,791,713 cases, 41.1 per cent greater than in 1950-51, the previous record year.

The greater volume of work in poultry standardization was handled without an increase in staff. With the exception of supervisory expense, the project continued on a self-supporting basis, and will again return a small earned balance to the State treasury.

The poultry products standardization and marketing projects, especially in the greatly expanded consumer grades inspection work, had grown so large that last year one State inspector was added to the staff. The fee system set up early in the year proved adequate to finance completely the increased service to the industry.

The State-paid staff of the poultry standardization or improvement project includes the supervisor and one full-time inspector, with one seasonal assistant. Their efforts are multiplied many times, without public expense, through the work of 98 certified flock selectors, 93 pullorum testing agents, 119 hatchery owners, and 701 breeders who are participants in the N.J.-U.S. Poultry and Turkey Improvement Plans. These privately or self-employed persons are trained by and are responsible to the Department, and the results

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of their work are recognized for official ratings within the regulations prescribed by the State Board of Agriculture.

Similarly, in the poultry products marketing projects, the small State-employed staff supervises many privately-employed inspectors who are responsible to the Department. The departmental staff consists of a supervisor who directs the work of the four inspectors assigned to fresh egg law enforcement, and one inspector supervising the new consumer grading program. Also, there are 35 licensed egg and poultry inspectors, 19 of whom are employed by six cooperative marketing associations under the State grades, four are State graders in four privately-owned companies, two are licensed Federal-State graders engaged in one cooperative association, and 10 are inspectors in privately-owned candling projects on the Federal-State grading program, which is also administered in New Jersey by the State Department of Agriculture. The application of grades by these qualified and State-supervised persons is officially recognized for product quality certification. The results of the work of these licensed agents are subject to further control through State inspections at wholesale and retail points of distribution.

Many services beyond the specified regulatory and marketing functions were also performed by the Bureau staff. Special requests of producers, distributors and consumers were accommodated by staff members incidental to their regular lines of work. All personnel cooperated in related activities of other branches of State, Federal and other states' governments, and with research, educational, health, promotional, regulatory and commercial agencies.

## POULTRY STANDARDIZATION

The Division of Markets carries on the poultry breed improvement program. The New Jersey program is coordinated with that of the U. S. Department of Agriculture and with other states. The National Poultry Improvement Plan has been in operation in New Jersey 17 years, replacing the original State program established in 1923. The National Turkey Improvement Plan has operated for nine years.

There were 956,768 birds enrolled in 701 flocks during 1951-52. A total of 396,734 birds (40.8 per cent) were inspected by the State staff, and the balance by field agents. The latter are assisted and their work is closely checked by the Bureau of Poultry Service inspector and two Division of Animal Industry men. One temporary Poultry Service inspector, employed September through February, assisted in handling the 116,000-bird increase, 13.8 per cent more than in 1950-51.

The use of privately-employed flock selecting agents and pullorum testers was continued. The supervisor of poultry standardization supervised the work of 107 field agents, qualified for flock selection or pullorum testing, and some qualified for both.

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Ten additional hatcheries joined the program, increasing the number of participants to 119, the largest number ever enrolled.

The steady progress toward control of pullorum disease, noted in previous years' reports, was maintained during 1951-52. In New Jersey, only a few breeding flocks remain whose owners have been unable to attain official health ratings well under the minimum pullorum rating of less than 1 per cent tolerance.

The State Board of Agriculture's permission to give official recognition to Pullorum-Clean ratings attained through work of testing agents expires this year. As a result of this change in the method of classifying flocks, the number of birds in the Pullorum-Clean classification increased from 383,601 in 1949-50 to 714,571 in 1951-52. The work of the agents has been so satisfactory, and the benefits to flock health improvement so great, that the continuation of the policy on a permanent basis will be recommended to the Board.

The relatively large breeding flock has become typical of those now enrolled under State supervision. Few small breeding flocks remain; their owners have eliminated themselves through lack of improvement. Because of chick customers' insistence upon efficient performance, there is a growing demand by hatcherymen for pedigreed males to head breeding flocks.

The classifications used this season were:

| Breeding Stages | Pullorum Classes |
|---|---|
| N.J.-U.S. Register of Merit | N.J.-U.S. Pullorum-Controlled |
| N.J.-U.S. Record of Performance | N.J.-U.S. Pullorum-Passed |
| N.J.-U.S. Certified | N.J.-U.S. Pullorum-Clean |
| N.J.-U.S. Approved | |

## *Extent of Program*

Poultry Table 1

| N.J.-U.S. Improvement Plans | 1951-52 | 1950-51 | Per cent Changes in 1952 |
|---|---|---|---|
| Flocks cooperating | 701 | 673 | + 4.2 |
| Breeders | 956,768 | 840,768 | +13.8 |
| Hatcheries cooperating | 119 | 109 | + 9.2 |
| Hatchery capacity cooperating | 10,514,364 | 9,816,430 | + 7.1 |
| Hatchery capacity in New Jersey | 14,430,000 | 13,250,000 | + 8.9 |
| Birds in pullorum classes only | 1,989 | 1,537 | +29.4 |
| Birds in Approved stages | 758,450 | 677,645 | +11.9 |
| Birds in Certified stages | 196,329 | 161,586 | +21.5 |
| Birds in ROP Trapnest | 3,921 | 4,033 | — 3.95 |
| Birds qualified in Register of Merit | 352 | 312 | +12.8 |
| Birds qualified for Honor Roll | 259 | 241 | + 7.46 |
| Females in ROP breeding pens | 2,028 | 1,682 | +20.5 |
| ROP chicks produced | 70,722 | 63,178 | +11.9 |
| ROP chicks and cockerels sold | 13,107 | 9,654 | +35.7 |
| ROP chicks and cockerels entering New Jersey | 6,358 | 4,554 | +39.5 |
| ROP cockerels leg banded | 11,569 | 10,121 | +14.3 |
| Percentage of birds reacting to the pullorum test | 0.046 | 0.141 | |
| Flock inspections | 508 | 548 | — 7.3 |
| Hatchery inspections | 157 | 173 | — 9.2 |
| ROP inspections | 32 | 35 | — 8.57 |

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Tables 2 and 3 give the classification and distribution of birds under supervision, and the number of birds banded by breeds and by counties. Cumberland County continues to hold its first position in numbers of breeding birds, followed by Monmouth, Ocean, Hunterdon and Mercer, in that order.

White Leghorns again predominate, accounting for two-thirds of all varieties enrolled in the State program. This is economically indicative of the preference for white-shelled eggs in the New Jersey marketing area. A growing interest in broilers is evident in a numerical increase in heavy varieties in hatching egg flocks. New Hampshires and Rhode Island Reds went up in numbers, the former significantly; 41 per cent to 137,742 birds by comparison with last year and continuing as the second most popular breed in hatching egg flocks. Plymouth Rocks, both Barred and White, decreased in number. Greater interest is being shown in Cornish stock; males of this variety are being crossed on other varieties to produce the recently popularized broad-breasted broilers.

The first attempt in New Jersey to improve interior egg quality through Record of Performance family breeding was started during the 1950-51 year. At the close of the present year, all five of the ROP breeders have either made interior egg quality studies of their families or are planning to do so, with the advice and technical assistance of the Bureau staff. Such work is being encouraged officially because it is closely related to the market quality problems alluded to in other parts of this report.

Participation in the turkey program totaled 13,070 birds in 1951-52, a fractional per cent increase.

The 11th annual qualification and examination day for flock selectors and pullorum testers was held in Trenton. Instructors from the poultry department of the College of Agriculture cooperated with the Division of Markets and the Division of Animal Industry in presenting the program. Fifteen persons were qualified by examination and field tests after instruction emphasizing breed improvement and pullorum disease control. Selecting agents operated only in the Approved and Certified breeding stages. Testing agents operated in all pullorum stages.

One Federal supervisor visited the State last year. At the close of the year, a national conference was held in Dallas, Texas, and two staff members and one breeder, the State's official delegate, attended.

Staff members continued to cooperate in the program of the New Jersey Poultry Breeders' Association, which helps disseminate information on breed improvement.

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## Poultry Table 2

### CLASSIFICATION AND DISTRIBUTION OF BIRDS UNDER SUPERVISION IN THE POULTRY STANDARDIZATION PROGRAM

NUMBER OF BIRDS

| County | Flocks | N.J.-U.S. Certified | | | N.J.-U.S. Approved | | | N.J.-U.S. | | | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pullorum Controlled | Pullorum Passed | Pullorum Clean | Pullorum Controlled | Pullorum Passed | Pullorum Clean | Pullorum Controlled | Pullorum Passed | Pullorum Clean | |
| antic | 30 | 2,875 | .... | 8,181 | 835 | 6,658 | 19,967 | .... | .... | .... | 38,516 |
| rgen | 8 | .... | .... | 633 | .... | .... | 6,463 | .... | .... | .... | 7,096 |
| clington | 28 | .... | .... | 9,666 | .... | .... | 20,326 | .... | .... | .... | 29,992 |
| nden | 1 | .... | .... | .... | .... | .... | 32 | .... | .... | .... | 32 |
| pe May | 7 | .... | .... | .... | .... | 1,300 | 16,196 | .... | .... | .... | 17,496 |
| mberland | 201 | .... | .... | 126,343 | 498 | 11,150 | 97,702 | .... | .... | .... | 235,693 |
| ucester | 26 | .... | 1,324 | 19,389 | .... | 253 | 22,998 | .... | .... | .... | 43,964 |
| nterdon | 67 | .... | .... | 170 | .... | 26,341 | 66,388 | .... | .... | 453 | 93,352 |
| rcer | 40 | .... | .... | 188 | 190 | 2,295 | 66,337 | .... | .... | 1,126 | 70,136 |
| ddlesex | 27 | .... | .... | 2,561 | .... | 3,104 | 47,173 | .... | .... | .... | 52,838 |
| nmouth | 84 | .... | 8,757 | 1,051 | 17,254 | 48,749 | 79,054 | .... | .... | 364 | 155,229 |
| rris | 2 | .... | .... | 1,267 | .... | .... | 553 | .... | .... | .... | 1,820 |
| ean | 71 | .... | .... | 12,720 | 13,057 | 75,285 | 39,430 | .... | .... | .... | 140,492 |
| ssaic | 13 | .... | .... | .... | 3,833 | 536 | 1,677 | .... | .... | 46 | 6,092 |
| em | 59 | .... | .... | 1,204 | 5,654 | 9,364 | 15,341 | .... | .... | .... | 31,563 |
| nerset | 20 | .... | .... | .... | 934 | 695 | 18,995 | .... | .... | .... | 20,624 |
| sex | 13 | .... | .... | .... | 1,167 | .... | 7,236 | .... | .... | .... | 8,403 |
| rren | 4 | .... | .... | .... | .... | 89 | 3,341 | .... | .... | .... | 3,430 |
| Totals | 701 | 2,875 | 10,081 | 183,373 | 43,422 | 185,819 | 529,209 | .... | .... | 1,989 | 956,768 |

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## Poultry Table 3

### NUMBER OF BREEDERS, BY COUNTIES, BREEDS AND VARIETIES

| County | S. C. White Leghorns | New Hampshires | Rhode Island Reds | Barred Rocks | White Rocks | Black Cornish | Black Minorcas | Others | Crosses | Turkeys | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlantic | 29,157 | 6,769 | .... | .... | 303 | 132 | .... | .... | 1,949 | 206 | 38,516 |
| Bergen | 3,385 | 1,507 | .... | .... | 268 | .... | .... | .... | 1,134 | 802 | 7,096 |
| Burlington | 12,677 | 5,362 | 5,252 | 1,539 | 1,255 | .... | .... | .... | 2,742 | 1,165 | 29,992 |
| Camden | .... | .... | .... | .... | .... | .... | .... | .... | .... | 32 | 32 |
| Cape May | 10,966 | 755 | 3,775 | .... | .... | .... | .... | .... | 2,000 | .... | 17,496 |
| Cumberland | 148,389 | 29,226 | 8,591 | 963 | 1,679 | 1,126 | 177 | 700 | 44,605 | 237 | 235,693 |
| Gloucester | 29,606 | 1,937 | 401 | .... | .... | .... | .... | .... | 10,059 | 1,961 | 43,964 |
| Hunterdon | 50,544 | 23,970 | 6,090 | 7,309 | 831 | 39 | .... | 453 | 2,511 | 1,605 | 93,352 |
| Mercer | 11,744 | 49,692 | .... | 740 | .... | 229 | .... | 1,126 | 6,317 | 288 | 70,136 |
| Middlesex | 48,783 | 308 | 759 | 287 | .... | 84 | .... | 174 | 436 | 2,007 | 52,838 |
| Monmouth | 139,028 | 3,020 | 1,853 | 2,041 | 340 | .... | .... | 1,422 | 5,484 | 2,041 | 155,229 |
| Morris | 1,820 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1,820 |
| Ocean | 125,725 | 956 | .... | 418 | .... | .... | .... | 3,574 | 9,819 | .... | 140,492 |
| Passaic | 1,584 | 2,850 | .... | .... | 464 | .... | .... | 46 | 247 | 901 | 6,092 |
| Salem | 13,837 | 5,279 | .... | 315 | 2,139 | .... | .... | .... | 9,993 | .... | 31,563 |
| Somerset | 14,188 | 2,909 | 332 | 2,417 | .... | 86 | .... | 188 | 469 | 35 | 20,624 |
| Sussex | 3,134 | 1,540 | 1,048 | .... | .... | .... | .... | .... | 1,872 | 809 | 8,403 |
| Warren | 787 | 1,662 | .... | .... | .... | .... | .... | .... | .... | 981 | 3,430 |
| Totals | 645,354 | 137,742 | 28,101 | 16,029 | 7,279 | 1,696 | 177 | 7,683 | 99,637 | 13,070 | 956,768 |

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Several lots of N.J.-U.S. ROP hatching eggs or chicks were air-shipped to Chile, Iran, and other countries through the U. S. Point IV Program (Technical Assistant Mission) during the past season, the Division cooperating with breeders in the necessary certification and also in expediting transportation.

## MARKET ACTIVITIES

### *Cooperative Marketing*

Despite the fact that new egg marketing groups and independent dealers have been increasing in numbers during the past decade competing for supplies of poultry products, the original cooperative marketing groups, popularly known as the "egg auctions," have continued their steady gain in volume of sales. Another historically high record was set in 1951-52 by these markets, which have operated successfully for more than 20 years on the pattern laid out by the Division of Markets, and with the advice and service of the staff.

These egg auctions dependably supply basic information in weekly reports. Similar information is not available from the marketing groups, which became allied with the Department more recently and with whom the Department's principal function is in grades supervision. This section should be considered in terms of the Grading and Inspection Section for a more complete understanding of the services of the State in relation to egg marketing, both cooperatively and by proprietary firms. The egg auctions in Flemington, Hightstown, Mount Holly and Vineland are under State inspection supervision and those in Paterson and Hackettstown operate on market grades.

This year, the total of 1,180,320 cases of eggs sold on these markets was about 11 per cent greater than in 1950-51, the previous high year. Total value of eggs handled by these markets was $18,436,264.21, which was 4.2 per cent more than the previous year. The average auction price per case of eggs, regardless of quality or size, was $15.62 (52.06 cents per dozen) about 5.7 per cent lower than the 1950-51 average of 55.23 cents per dozen.

Selling factors vary considerably among the several markets, and direct comparisons of prices received are not advised. However, this annual report always includes the individual markets' averages as a matter of interest. Hightstown commanded the highest annual average price of $15.74 per case. Flemington's annual average price was $15.73; Vineland, $15.62; Mount Holly, $15.19; Paterson, $15.17; and Hackettstown, $14.42. These average prices are for all eggs of all sizes and qualities.

The five cooperative live poultry auctions sold a total of 6,882,213 pounds of poultry, 5.08 per cent more than the previous year. The total value of

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live poultry was $1,865,931.95, which was 1.4 per cent lower than the previous year. The five auctions' 1951-52 average-per-pound price of 27.11 cents was 6.3 per cent lower than the 1950-51 average. The Mount Holly average price per pound again was the highest, 29.36 cents. Flemington averaged 27.34 cents; Hackettstown, 26.20 cents; Hightstown, 25.86 cents; Paterson, 24.96 cents per pound for all varieties and qualities of live poultry items. Vineland's live poultry auction remained closed.

The Vineland and South Jersey Cooperative Egg Auction and Poultry Association, Inc., discontinued selling eggs at auction in October 1951. The great volume received at this market, often exceeding 10,000 cases per week, required a method that would permit a more even flow of eggs in and out of the egg room for the more efficient use of manpower. Long before any change was made, experience had shown that there was a limit to the quantity of eggs that should be offered at public auction if prices were to be maintained at a satisfactory level. For several years, a volume sufficient to satisfy the needs of attending buyers was sold at auction; the balance of the volume was sold "off the auction."

In the new sales procedure at Vineland, values are determined by weighing numerous factors that influence prices, such as volume at hand, demand, trend and tone of other markets, and quantity of eggs involved in each transaction.

Table 4, "Summary of Egg and Poultry Auction Markets," shows the volume and value of sales at each of the cooperative markets, and the total of all sales for the fiscal year.

Poultry Table 4

SUMMARY OF EGG AND POULTRY AUCTION MARKETS
July 1, 1951 to June 30, 1952

| Market | Cases of Eggs | Value of Eggs | Crates of Poultry | Pounds of Poultry | Value of Poultry | Total Value |
|---|---|---|---|---|---|---|
| Flemington | 362,903 | $5,710,199.28 | 65,263 | 3,336,478 | $912,346.35 | $6,622,545.63 |
| Hackettstown | 22,296 | 321,532.01 | 9,541 | 536,146 | 140,472.86 | 462,004.87 |
| Hightstown | 152,975 | 2,408,008.86 | 22,174 | 1,180,060 | 305,191.05 | 2,713,199.91 |
| Mount Holly | 54,950 | 834,715.11 | 21,582 | 1,164,447 | 341,898.93 | 1,176,614.04 |
| Paterson | 56,145 | 876,731.56 | 12,194 | 665,082 | 166,022.76 | 1,042,754.32 |
| Vineland | 531,051 | 8,285,077.39 | .... | .... | .... | 8,285,077.39 |
| Totals | 1,180,320 | $18,436,264.21 | 130,754 | 6,882,213 | $1,865,931.95 | $20,302,196.16 |

Average price per case, 1951-52 $15.62

Average price per pound of live poultry, 1951-52 $0.271

Average price per case, 1950-51 $16.57

Average price per pound of live poultry, 1950-51 $0.289

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Table 5, "Average Price Per Dozen Eggs on Six New Jersey Auction Markets," provides a comparison of seasonal values, and comparisons of the past year with the previous year, and also with prewar 1939, on a monthly basis.

Poultry Table 5

AVERAGE PRICE PER DOZEN EGGS ON SIX NEW JERSEY AUCTION MARKETS

| | | For Comparison | |
|---|---|---|---|
| | 1951 | 1950 | 1939 |
| July | $0.6320 | $0.5225 | $0.2647 |
| August | .6421 | .4845 | .2678 |
| September | .6305 | .5234 | .2948 |
| October | .5652 | .5294 | .3029 |
| November | .6509 | .5668 | .3118 |
| December | .5538 | .6603 | .2453 |
| | 1952 | 1951 | 1939 |
| January | .4550 | .5046 | .2372 |
| February | .4128 | .5006 | .2260 |
| March | .4368 | .5462 | .2305 |
| April | .4622 | .5368 | .2218 |
| May | .4243 | .5491 | .2146 |
| June | .4763 | .6197 | .2384 |

The development of the marketing program is traced in Table 6.

Poultry Table 6

TEN YEARS OF PROGRESS IN NEW JERSEY POULTRY AND EGG AUCTION SALES

| | Cases of Eggs | Crates of Poultry | Pounds of Poultry | Total Combined Value Eggs and Poultry |
|---|---|---|---|---|
| 1951-52 | 1,180,320 | 130,754 | 6,882,213 | $20,302,196.16 |
| 1950-51 | 1,067,278 | 122,147 | 6,548,720 | 19,353,488.51 |
| 1949-50 | 1,007,268 | 123,392 | 7,170,230 | 16,035,952.60 |
| 1948-49 | 807,739 | 102,301 | 5,194,487 | 16,331,155.63 |
| 1947-48 | 724,749 | 91,445 | 4,709,002 | 14,550,468.95 |
| 1946-47 | 561,673 | 78,441 | 4,106,573 | 10,498,824.87 |
| 1945-46 | 417,851 | 49,066 | 2,571,721 | 6,092,989.74 |
| 1944-45 | 512,667 | 42,644 | 2,132,829 | 7,399,916.56 |
| 1943-44 | 668,597 | 62,667 | 3,136,619 | 8,824,088.21 |
| 1942-43 | 707,019 | 106,846 | 5,182,047 | 10,532,636.03 |
| Totals | 7,655,161 | 909,703 | 47,634,441 | $129,921,717.26 |

*Auction Markets Egg-Feed Ratio*

An annual summary of the monthly ratios of egg prices compared with feed costs is also reported. Compiled from current and past statistics, these ratios provide a measuring stick of the economic condition of the New Jersey market egg producers. The ratios are included in the Division's monthly reports and are published in *New Jersey Farm and Garden*. Economic probabilities have been predicted with a high degree of accuracy on the basis of analyses of previous years' ratios.

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The year just ended has not been encouraging, with six months of highly unfavorable egg-feed ratios, four months of good ratios, and two months of "breaking even" or possible small losses. The pessimistic shade prevailing during much of the past twelve months would seem to presage a relatively favorable immediate future for poultrymen who kept their production units at full capacity. The expected better market prices for the latter half of 1952 should create a strong demand for replacement chicks during the 1953 season.

Table 7 shows that the monthly average price of all eggs on the six New Jersey auction markets reached its highest point, 65.09 cents per dozen in November 1951. February 1952, with an average of 41.28 cents per dozen, was the lowest month. The annual average price was 52.06 cents per dozen. There was a wide range of price variation—nearly 24 cents—between high and low months, and a number of quick changes occurred from week to week. Observation of the volume figures will show that flock management is skillful in New Jersey, as evidenced by the fact that approximately as many eggs are now being marketed in the naturally short season as in the normally surplus months of spring. For the first time in the history of these markets, their total sales volume exceeded three million dozens per month, a record reached during seven months of the past fiscal year. Two of these were autumn months, October and November. Prior to March 1948, these same markets had never reached two million dozens.

The price of the average laying ration (50 per cent scratch grain and 50 per cent mash) varied only 40 cents per 100 pounds from its low to its high month, $4.58 in July and $4.98 in January, these being only normal seasonal changes. A simple annual average of 1951-52 monthly prices of the laying ration is $4.81 per 100 pounds, 44 cents higher than the 1950-51 average.

The simple annual average of the 1951-52 monthly egg-feed ratios is 9.37 dozens of eggs equal in purchasing power to 100 pounds of laying ration. This average was 8.2 dozens in 1950-51, a year of moderate prosperity for New Jersey market egg producers. The recent year was one of considerable complaint, and the egg-feed ratios bear out that the poultrymen had cause.

### *State Certified Fresh Eggs*

For the fourteenth year, supervision of inspection of State Certified Fresh Eggs was continued. Four member auction markets—Flemington, Vineland, Hightstown and Mount Holly—supply wholesale graded lots of eggs for this project, which individually inspects and cartons the eggs under State supervision. The volume purchased is determined by the volume of the

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Poultry Table 7

NEW JERSEY EGG AUCTIONS—EGG-FEED RATIO

| | | JULY | | | AUGUST | | | SEPTEMBER | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GS | | 1951 | 1950 | 1939 | 1951 | 1950 | 1939 | 1951 | 1950 | 1939 |
| Total dozens sold | | 2,285,310 | 2,048,280 | 891,300 | 2,444,910 | 2,399,040 | 900,540 | 2,522,820 | 2,463,840 | 855,660 |
| Total price paid | $ | 1,444,411 | 1,070,247 | 235,920 | 1,569,922 | 1,162,281 | 241,138 | 1,590,682 | 1,289,593 | 252,290 |
| Average price per dozen | $ | .6320 | .5225 | .2647 | .6421 | .4845 | .2678 | .6305 | .5234 | .2948 |
| ED | | | | | | | | | | |
| Average 100 lb. scratch | $ | 4.25 | 3.95 | 1.60 | 4.30 | 3.95 | 1.50 | 4.35 | 3.95 | 1.86 |
| Average 100 lb. mash | $ | 4.90 | 4.75 | 2.18 | 4.95 | 4.85 | 2.16 | 5.00 | 4.70 | 2.02 |
| Average laying ration | $ | 4.58 | 4.35 | 1.89 | 4.63 | 4.40 | 1.83 | 4.68 | 4.33 | 1.94 |
| TIOS | | | | | | | | | | |
| Dozen eggs required to buy 100 lb. feed | | 7.2 | 8.3 | 7.1 | 7.2 | 8.6 | 6.8 | 7.4 | 8.3 | 6.6 |
| Number lb. feed one dozen eggs will buy | | 13.8 | 12.0 | 14.0 | 13.9 | 11.6 | 14.6 | 13.5 | 12.0 | 15.2 |
| | | OCTOBER | | | NOVEMBER | | | DECEMBER | | |
| GS | | 1951 | 1950 | 1939 | 1951 | 1950 | 1939 | 1951 | 1950 | 1939 |
| Total dozens sold | | 3,090,660 | 2,875,050 | 995,430 | 3,053,700 | 2,915,400 | 969,330 | 2,943,900 | 2,545,770 | 1,135,350 |
| Total price paid | $ | 1,746,476 | 1,522,029 | 301,570 | 1,987,623 | 1,652,328 | 302,284 | 1,630,283 | 1,680,894 | 278,465 |
| Average price per dozen | $ | .5652 | .5294 | .3029 | .6509 | .5668 | .3118 | .5538 | .6603 | .2453 |
| ED | | | | | | | | | | |
| Average 100 lb. scratch | $ | 4.35 | 3.95 | 1.78 | 4.40 | 4.00 | 1.77 | 4.50 | 4.15 | 1.83 |
| Average 100 lb. mash | $ | 5.10 | 4.65 | 2.54 | 5.20 | 4.70 | 2.52 | 5.30 | 4.80 | 2.58 |
| Average laying ration | $ | 4.73 | 4.30 | 2.16 | 4.80 | 4.35 | 2.14 | 4.90 | 4.48 | 2.20 |
| TIOS | | | | | | | | | | |
| Dozen eggs required to buy 100 lb. feed | | 8.4 | 8.1 | 7.1 | 7.4 | 7.7 | 6.9 | 8.8 | 6.8 | 9.0 |
| Number lb. feed one dozen eggs will buy | | 11.9 | 12.3 | 14.0 | 13.6 | 13.0 | 14.6 | 11.3 | 14.7 | 11.2 |

OTE: The July-November 1950 totals and averages have been revised, since originally published, to include the volumes and values of Hacketts-wn eggs, previously omitted.

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NEW JERSEY EGG AUCTIONS—EGG FEED RATIO—Continued

| | | JANUARY | | | FEBRUARY | | | MARCH | | |
|---|---|---|---|---|---|---|---|---|---|---|
| s | | 1952 | 1951 | 1939 | 1952 | 1951 | 1939 | 1952 | 1951 | 1939 |
| otal dozens sold | | 3,217,500 | 2,755,950 | 1,099,080 | 3,182,760 | 2,630,370 | 1,085,550 | 3,318,120 | 3,088,710 | 1,372,230 |
| otal price paid | $ | 1,464,279 | 1,390,532 | 260,807 | 1,313,967 | 1,316,809 | 245,376 | 1,448,025 | 1,687,107 | 316,303 |
| verage price per dozen | $ | .4550 | .5046 | .2373 | .4128 | .5006 | .2260 | .4364 | .5462 | .2305 |
| o | | | | | | | | | | |
| verage 100 lb. scratch | $ | 4.55 | 4.30 | 1.54 | 4.50 | 4.35 | 1.54 | 4.50 | 4.40 | 1.56 |
| verage 100 lb. mash | $ | 5.40 | 4.95 | 2.04 | 5.40 | 4.90 | 2.04 | 5.30 | 4.95 | 2.06 |
| verage laying ration | $ | 4.98 | 4.63 | 1.79 | 4.95 | 4.63 | 1.79 | 4.90 | 4.68 | 1.81 |
| ios | | | | | | | | | | |
| ozen eggs required to buy 100 lb. feed | | 10.9 | 9.2 | 7.5 | 11.9 | 9.2 | 7.9 | 11.2 | 8.6 | 7.9 |
| umber lb. feed one dozen eggs will buy | | 9.1 | 10.9 | 13.3 | 8.3 | 10.8 | 12.6 | 8.9 | 11.7 | 12.7 |

| | | APRIL | | | MAY | | | JUNE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| s | | 1952 | 1951 | 1939 | 1952 | 1951 | 1939 | 1952 | 1951 | 1939 |
| otal dozens sold | | 3,215,310 | 2,924,790 | 1,213,620 | 3,373,110 | 2,980,110 | 1,388,070 | 2,761,500 | 2,391,030 | 1,117,170 |
| otal price paid | $ | 1,485,990 | 1,570,090 | 269,176 | 1,439,164 | 1,636,246 | 297,863 | 1,315,437 | 1,481,786 | 266,289 |
| verage price per dozen | $ | .4622 | .5368 | .2218 | .4243 | .5491 | .2146 | .4763 | .6197 | .2384 |
| o | | | | | | | | | | |
| verage 100 lb. scratch | $ | 4.40 | 4.35 | 1.58 | 4.45 | 4.40 | 1.64 | 4.35 | 4.30 | 1.69 |
| verage 100 lb. mash | $ | 5.30 | 4.95 | 2.11 | 5.30 | 5.00 | 2.18 | 5.30 | 4.90 | 2.18 |
| verage laying ration | $ | 4.85 | 4.65 | 1.84 | 4.88 | 4.70 | 1.91 | 4.83 | 4.60 | 1.94 |
| ios | | | | | | | | | | |
| ozen eggs required to buy 100 lb. feed | | 10.5 | 8.67 | 8.3 | 11.5 | 8.56 | 8.9 | 10.1 | 7.4 | 8.1 |
| umber lb. feed one dozen eggs will buy | | 9.5 | 11.5 | 12.1 | 8.7 | 11.7 | 11.2 | 9.9 | 13.5 | 12.3 |

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source market. Of the 79,249 cases (2,377,470 dozens) purchased—10.1 per cent more than last year—Flemington supplied 23,189 cases (29.3 per cent of the total purchased); Vineland, 43,594 cases (55.0 per cent); Hightstown, 9,423 cases (11.9 per cent); and Mount Holly, 3,839 cases (3.84 per cent). Purchases from all auctions during the past year were valued at $1,335,007.13 compared with the previous year's $1,241,943.01. The total "yield" of eggs for cartoning purposes was 2,059,939 dozens, or 86.64 per cent of the eggs purchased. The 13.36 per cent loss on reject eggs was 2.58 per cent higher than the previous year.

The yearly average price paid to the auctions by "Certified" was 56.01 cents per dozen, whereas the average price commanded by all eggs on all New Jersey auctions was 52.06 cents. The annual average markup between purchase and selling price was 11.64 cents per dozen, which was one cent higher than the previous year. The project had satisfactory earnings, although smaller than in several recent years, as shown by the annual audits filed with this Department. Table 8, "Summary of Certified Egg Project," reports the highlights of this marketing program during its fourteenth year.

Poultry Table 8

SUMMARY OF CERTIFIED EGG PROJECT

| | Dozens Sold | Dozens Sold | Monthly Average Purchase Price | Selling Price Wholesale In Cartons | Average Markup | Earnings or Loss Per Dozen |
|---|---|---|---|---|---|---|
| 1951 | 1951 | 1950 | 1951 | 1951 | 1951 | 1951 |
| July | 149,868 | 145,357 | $0.6623 | $0.7758 | $0.1135 | —$0.0133 |
| August | 156,641 | 148,254 | .7059 | .8230 | .1161 | — .0199 |
| September | 141,751 | 140,679 | .7302 | .8404 | .1102 | — .0220 |
| October | 162,670 | 154,613 | .7223 | .8321 | .1098 | — .0185 |
| November | 173,583 | 157,125 | .6985 | .8250 | .1265 | + .0164 |
| December | 181,566 | 152,424 | .5907 | .7221 | .1314 | + .0306 |
| 1952 | 1952 | 1951 | 1952 | 1952 | 1952 | 1952 |
| January | 184,290 | 164,015 | .4787 | .6011 | .1224 | + .0267 |
| February | 174,603 | 160,365 | .4249 | .5325 | .1076 | + .0153 |
| March | 183,849 | 200,090 | .4393 | .5555 | .1162 | + .0187 |
| April | 186,762 | 170,088 | .4893 | .5952 | .1059 | + .0004 |
| May | 191,397 | 153,585 | .4398 | .5571 | .1173 | + .0141 |
| June | 172,959 | 170,730 | .4760 | .5984 | .1224 | + .0106 |
| Totals | 2,059,939 | 1,917,325 | | | | |

*New Jersey Fresh Egg Law Enforcement*

The enforcement staff was not at full complement at all times during the year. A senior inspector was assigned in early spring to the newly developed fee inspection work, and the subsequent vacancy resulted in the loss of one fresh egg law inspector's work for about six months. This is

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reflected in the lower number of inspections reported in Table 9. Every effort was made to provide coverage in areas most susceptible to violations. As the fiscal year closes, the staff is complete.

Compliance with the law has been encouraging. Occasional breaks have occurred, but are largely traceable to carelessness rather than to deliberate efforts to circumvent the law. The perishable character of eggs and current methods of handling and transporting make it difficult to visualize what changes will develop to assure the consumer of getting the finest quality at all times. An egg law appears to be a satisfactory implement when enforced to meet present conditions. The carelessness of only one candler, or deliveryman, or an act by any one person in the entire chain of distribution may disrupt a well planned quality egg marketing program. New Jersey enforcement does not excuse these careless acts, but recognizes them as human faults.

Assistance is constantly being given to egg distributors in line with this policy. The problem is approached from the viewpoint that operational planning must be so arranged as to prevent errors leading to violations. During the year, the senior fresh egg law inspector made 324 visits to distributing firms for the purpose of helping set up or maintain quality egg programs.

The examples of enterprising competitors are an aid when compliance with the law is the subject of such conferences. Suggestions offered to distributors and retailers are always based on practical marketing practices which, if followed, will enable them to meet the requirements of the law, as well as to sell more eggs and serve the consuming public better. The law is available to bring into line those who hesitate to comply.

Inspections were made in 8,945 stores during the year. Violations among all stores totaled 799 or 8.93 per cent. Among chain stores the incidence of violations was 19.9 per cent. Of all violations found, 186 were considered serious enough to warrant issuing warnings; four resulted in hearings, one of which was settled without penalty, and the remaining three were assessed penalties totaling $25.

### *Grading and Inspection Service*

The project is composed of the following major functions:

Application of New Jersey Live Poultry Grades
Application of New Jersey Wholesale Grades for Eggs
Application of New Jersey Consumer Grades for Eggs
Inspection of eggs, and certifying to quality found
Inspection of eggs for institutional use
Supervision of the Federal-State egg grading service

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## Poultry Table 9

### STORES INSPECTED AND PER CENT VIOLATION, BY COUNTIES

| County | Independent Stores | | | Chain Stores | | | All Stores | | |
|---|---|---|---|---|---|---|---|---|---|
| | Stores Inspected | Violations | Per Cent Violations | Stores Inspected | Violations | Per Cent Violations | Stores Inspected | Violations | Per Cent Violations |
| Atlantic | 353 | 1 | 0.28 | 49 | 7 | 14.29 | 402 | 8 | 1.99 |
| Bergen | 456 | 113 | 24.78 | 68 | 25 | 36.76 | 524 | 138 | 26.34 |
| Burlington | 185 | 6 | 3.24 | 26 | ..... | ..... | 211 | 6 | 2.84 |
| Camden | 602 | 14 | 2.33 | 72 | 9 | 12.50 | 674 | 23 | 3.41 |
| Cape May | 179 | 2 | 1.12 | 20 | 2 | 10.00 | 199 | 4 | 2.01 |
| Cumberland | 165 | ..... | ..... | 5 | ..... | ..... | 170 | ..... | ..... |
| Essex | 1,678 | 203 | 12.10 | 150 | 61 | 40.67 | 1,828 | 264 | 14.44 |
| Gloucester | 122 | 1 | .82 | 18 | 1 | 5.56 | 140 | 2 | 1.43 |
| Hudson | 1,208 | 107 | 88.58 | 92 | 14 | 15.22 | 1,300 | 121 | 9.31 |
| Hunterdon | 32 | ..... | ..... | 11 | ..... | ..... | 43 | ..... | ..... |
| Mercer | 293 | 1 | .34 | 129 | 6 | 4.65 | 422 | 7 | 1.66 |
| Middlesex | 496 | 26 | 5.24 | 46 | 9 | 19.57 | 542 | 35 | 6.46 |
| Monmouth | 209 | 22 | 10.53 | 28 | 2 | 7.14 | 237 | 24 | 10.13 |
| Morris | 282 | 24 | 8.51 | 33 | 8 | 24.24 | 315 | 32 | 10.16 |
| Ocean | 158 | 5 | 3.17 | 17 | 4 | 23.53 | 175 | 9 | 5.14 |
| Passaic | 829 | 32 | 3.86 | 63 | 15 | 23.81 | 892 | 47 | 5.27 |
| Salem | 95 | ..... | ..... | 7 | ..... | ..... | 102 | ..... | ..... |
| Somerset | 118 | 5 | 4.24 | 13 | 1 | 7.69 | 131 | 6 | 4.58 |
| Sussex | 51 | 5 | 9.80 | 8 | ..... | ..... | 59 | 5 | 8.47 |
| Union | 475 | 50 | 10.53 | 51 | 15 | 29.41 | 526 | 65 | 12.36 |
| Warren | 45 | ..... | ..... | 8 | 3 | 37.50 | 53 | 3 | 5.66 |
| Totals | 8,031 | 617 | | 914 | 182 | | 8,945 | 799 | |

| | 1951-52 | 1950-51 |
|---|---|---|
| Total stores inspected | 8,945 | 9,521 |
| Total violations | 799 | 944 |
| Average per cent violations | 8.93 | 9.91 |

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The auction markets in Flemington, Hightstown, Mount Holly and Vineland continued using State official wholesale grades for eggs. The first three named and the Hackettstown auction also used official grades for live poultry. Qualified personnel employed by the respective auctions are licensed by this Department to conduct the inspection of eggs and live poultry. These marketing points provide an opportunity for producers to become acquainted with grade requirements and thus be able to package their product intelligently before submitting it for sale.

New Jersey consumer grades for eggs are used by 16 firms which conduct candling-cartoning projects under State supervision. Continuous inspection is maintained at these points through the use of a licensed qualified employee of the respective firms.

A newly inaugurated type of inspection service is rendered to Farmco, a producer cooperative which functions as a bargaining association, with no central point of assembly. Instead, producers are assigned to different receivers and are under contract to deliver their production to that receiver for the duration of an annually renewable contract. Previously, the contract specified certain minimum net weights per 30-dozen case for which a certain price per dozen would be paid as reflected by the New York market. Nothing was specified about quality, and any difficulty that arose on this score between dealer and producer had to be settled by action of a committee.

After approximately ten years of this arrangement, during which business relationships were frequently strained, the Farmco directors decided to use the State service for impartial inspection. As important as the problem of friction between the producers and receivers was that of the inequities in respect to quality of packs prepared by the different members. Each member was proud of his pack and was convinced that there was none better. When State inspection was instituted, it was shown that there was a wide variation, ranging from fine to low quality, yet the producers of these extreme qualities were receiving the same price.

Farmco incorporated into its new contract with receivers certain quality specifications for which its producers would be paid top price. Any producer whose lot fell below the minimum would receive less, in accordance with a graduated scale of deductions. The service in this case is again rendered through a State-licensed inspector employed by the association. All inspections are made by appointment through the association secretary so that the producer can be present, yet they are arranged so that there is no opportunity for the producer to prepare his eggs specially. Eggs purchased by a local receiver are examined at that receiver's place of business. If purchased by an out-of-state or distant receiver, the eggs are examined at a specified trucker's warehouse. The procedure enables all concerned to see

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at the conclusion of the examination exactly what was found. All figures are in percentages, which are the terms used in the contract. The inspector then prepares an official grading certificate, copies of which are distributed to the interested parties, thus completing the Department's responsibility.

The Farmco inspection program has worked well. Members have learned much about their product and about individual egg quality. It has been gratifying to see a large number of producers respond so rapidly, particularly those whose packs were well below minimum contract specifications.

Both State and Federal institutions have awarded contracts requiring shipments to be officially graded. The State inspection staff rendered this grading service on a fee basis on 130 lots of varying size and issued the required certificates.

The relationship of the State Department of Agriculture to the Federal-State egg grading service remains that of a cooperating agency as provided by official agreement. The State staff supervises the grading of eggs conforming to U. S. Consumer Grades at firms which are under contract, and examines the firms which apply for service, passing upon the qualifications of those who are licensed as graders, collecting fees and making the necessary reports to the Washington office.

Although an agreement exists between the State and Federal departments of agriculture to enable the Federal grading service to function with the assistance of State personnel, it does not recognize the State as part of the administrative organization of the service. The agreement does not stipulate that all official egg grading in New Jersey shall be under Federal-State service. However, the Federal agency has raised questions about the dual supervisory role of State personnel in charge of both the Federal-State service and the State grading service. Grade specifications in both services are identical and the end product is the same; the State egg law demands the same thing from either service. The applicant using one service does so only because he does not want the other, and there appears to be a strong preference for the State program.

The New Jersey view with respect to Federal domination was submitted by mail to all Federal-State supervisors in the Northeast, who subsequently met and discussed the situation. There was general agreement, and a meeting has been planned for the primary purpose of developing a constructive proposal representative of all interests.

The Bureau continued to assemble reports on egg candling yields and to analyze this information for the purpose of measuring the average quality of New Jersey eggs at the wholesale level. The source of the figures is a relatively large-scale candling-cartoning project under State supervision. The eggs inspected may be considered typical of commercial production in New

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Jersey. The percentage of faulty eggs rejected was higher during the past year than for any previous year, averaging about 2 per cent above 1950-51, and 3 per cent above 1949-50.

PERCENTAGES OF EGGS REJECTED DURING INDIVIDUAL INSPECTION (CANDLING)

| | 1951 | 1950 | 1949 |
|---|---|---|---|
| July | 13.76 | 11.80 | 12.21 |
| August | 14.78 | 12.42 | 12.76 |
| September | 13.67 | 10.24 | 10.28 |
| October | 14.11 | 9.44 | 8.77 |
| November | 11.13 | 8.77 | 8.07 |
| December | 10.96 | 8.78 | 8.71 |
| | 1952 | 1951 | 1950 |
| January | 11.43 | 9.02 | 9.35 |
| February | 12.28 | 10.41 | 10.44 |
| March | 13.46 | 11.51 | 10.68 |
| April | 14.44 | 11.90 | 11.63 |
| May | 14.72 | 13.39 | 11.86 |
| June | 14.37 | 13.69 | 12.20 |
| Median: | 13.3 | 11.5 | 10.5 |

The question is of concern because costs of candling are increased as yields are reduced. Bureau statistical information and theories as to the cause of the progressively lower yield have been submitted to research and extension workers. One theory is that egg quality can be permanently damaged by Newcastle disease when it occurs late, either naturally or as a result of vaccination, after the pullets reach sexual maturity. A second possible cause is egg washing, investigations of which are continuing.

Shortages of manpower and increased mechanization of poultry farms, with each mechanical process exposing fragile shells and transitory quality to new hazards, may also be factors in the above problem. The trend toward increasingly large production units without commensurate addition of labor has acted against quality improvement by reducing individual attention and product care. As an example, egg cleaning, which was formerly assigned largely to women when it was a manual operation, has been taken over by men since "mass washing" has been popularized. Dealer demands that washing be discontinued are not likely to be heeded without a revolt by farm wives who would have to return to one of the most menial chores of the poultry farm. This consideration, as well as the economic penalties resulting from the bacterial contamination of improperly washed eggs, is prompting the Department's official participation in egg washing tests. The interest of commercial agencies as well as government research has been stimulated in the search for a safe washing method adaptable to modern production units.

Among commercial research agencies with which Bureau personnel have worked on this problem are Rohm & Haas, The Klenzade Company, California Spray-Chemical Corporation, and a number of manufacturers of soaps and detergent washing compounds, and makers of egg cleaning machines of various types.

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*Special Poultry Activities*

Numerous requests for Bureau assistance in special activities related to the poultry industry were accommodated incidental to the performance of regularly assigned duties.

Several conferences with producers, dressing plant operators and poultry canners were held in an effort to improve the marketing of expended layers. New Jersey's fowl supplies are so great that seasonal surpluses constitute a marketing problem. Looking toward the future, the Bureau has proposed the closer cooperation of the interested group, establishment of a supply reporting system, and eventually the development of a cooperative plan for dressing and eviscerating the fowl for frozen storage, to be withdrawn as needed by the canners.

Potential sources of high quality poultry items to be marketed under a State grading and identification program were explored at the request of two poultry dressers with relatively large capacity and modern facilities. Growers' recent disappointing experiences with meat poultry marketing made the dressers' proposals inopportune, and no new project was launched.

The Bureau continued to work closely with the State Department of Health on matters of mutual interest such as the incubator test-out egg problem, and the possibility of setting up a State poultry dressing code which would include both sanitation and market quality inspection.

Bureau personnel conducted six large-scale demonstrations of chicken barbecue techniques and prepared and distributed a descriptive leaflet. News articles were issued, and radio and television programs were staged to promote the idea of broilers cooked in this way for large groups and family picnics.

Poultry participation in the annual Farmers Week program was especially successful. The second poultry day again featured a marketing exploratory conference and attracted a large and enthusiastic attendance. Honored with citations in the form of "golden eggs" were two leaders in poultry products marketing, John W. Bottcher of Mount Holly and Steffen Olsen of Westwood.

As a result of efforts begun several years ago by the Bureau staff, on May 1 the Urner-Barry Company, which operates a marketing reporting service, started to report prices paid by retailers for officially inspected cartoned eggs delivered to their stores. Many farmer organizations had proposed this step; however, departmental intercession in their behalf was required. The Bureau also arranged the mechanics of submitting the New Jersey quotation weekly, and vouches for its accuracy.

Local activities included judging poultry at the Cumberland County Fair and the Mercer County 4-H Fair, judging eggs at the Rutgers Poultry Science Club Egg Show and the Pennsylvania Farm Show, and serving on the board

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of election at the Vineland auction. A staff member served as manager of the Hunterdon County Baby Chick and Egg Show.

Egg grading contests in the Vo-Ag and 4-H programs were again held during Farmers Week after elimination contests in various parts of the State to obtain regional representation. Cooperation was extended to Neppco in conducting similar contests at the annual convention in Harrisburg, Pennsylvania.

The Neppco Marketing and Egg Quality School was held at Rutgers University, and the staff of the Poultry Bureau cooperated in the operation of the school.

Staff members participated in several regional programs, including the Business Management Conference for Cooperative Marketing Associations held at Luray, Virginia; the Poultry Allied Industry Conference in Philadelphia; eastern activities of the Poultry and Egg National Board; the "Teen-Egg" Cooking Contest sponsored by four New Jersey egg auction markets; and meetings of the State Poultry Association, the Jersey Chick Association, and county associations.

One issue of *Farm Service News* was devoted to information about the poultry standardization program. Listings of cooperating breeding flocks and hatcheries, with their official ratings, were published and distributed. News releases on egg and poultry subjects were prepared in cooperation with the Division of Information. Special material was supplied for agricultural and consumer radio programs. Assistance was given writers and editorial workers on poultry assignments.

After more than five years of discussion and investigation, the proposed regional egg marketing organization for the Northeastern states seemed headed toward reality as the year ended. Bureau staff members cooperated with Neppco and marketing and governmental agencies in working out this proposal. One important function will be producer representation on the New York Mercantile Exchange. The diversion of locally surplus eggs to other markets, cooperative efforts of marketing groups within the area to market medium size eggs by export, and other projects are also being considered.

The proposal of Mercantile Exchange representation for New Jersey alone has deferred to the plans of the regional agency. Bureau staff members have conferred frequently with a special committee on which all principal poultry groups of New Jersey are represented to solve mutual problems peculiar to egg marketing in this State. Although competing among themselves for the same buyers, these organizations are most concerned with out-of-state competition, and seek some practical means of continuing their traditional price premiums over other eggs.

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# *Report of the Division of Plant Industry*

HARRY B. WEISS, D.SC., *Director*

## BUREAU OF ENTOMOLOGY

### NURSERY INSPECTION

Five hundred seventy-three nurseries were inspected and certified during the year starting September 1, 1951, after they were found free of injurious insects and plant diseases. A total of 282 infestations was found in 138 nurseries, requiring cleanup and re-inspection before the issuance of nursery certificates.

### INSECT INFESTATIONS

| Insect Pests | Infestations |
|---|---|
| Rhododendron Lace Bug | 62 |
| Juniper Scale | 58 |
| Azalea Lace Bug | 39 |
| Mealy Bug | 20 |
| Spruce Gall Aphid | 20 |
| European Pine Shoot Moth | 17 |
| Oyster Shell Scale | 15 |
| Juniper Webworm | 9 |
| Holly Leaf Miner | 8 |
| Bagworm | 7 |
| Euonymus Scale | 6 |
| Pine Leaf Scale | 4 |
| Boxwood Leaf Miner | 2 |
| Lilac Borer | 2 |
| Pine Sawfly | 2 |
| Red Spider | 2 |
| White Fly | 2 |
| Borers in Azaleas | 1 |
| Black Vine Weevil | 2 |
| Lace Bug on Plane Trees | 1 |
| Leaf-Roller | 1 |
| Peach Tree Borer | 1 |
| Soft Scale | 1 |

### *Dealers' Certificates*

Certificates were issued to 69 dealers after they had signed agreements to sell stock only from sources investigated and approved by this Department.

### *Special Certificates*

A total of 353 special certificates was issued during the fiscal year ending June 30, 1952. Such certification is issued to nurserymen shipping to other states or foreign countries requiring special phytosanitary certification or to

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persons other than nurserymen desiring to move plant material out of New Jersey. Certification of this type attests to the freedom of this material from insects and diseases just prior to shipment.

*Special (Request) Inspections*

Requests are frequently received from residents of the State for information on the identity and control of insects and diseases affecting their property and calls are made where necessary. A total of 89 such inspections was made.

*Canadian Certificates*

No plant material may be shipped to the Dominion of Canada without special certification. In line with this requirement, a total of 87 inspections was made and necessary certificates issued.

*Domestic Inspections*

Of the nursery stock entering New Jersey, 100 shipments were spot inspected to check the efficiency of the inspection service at the source of origin. Three lots of infested material were intercepted and returned to their sources. These interceptions consisted of two willows from New York infected with root gall and stem canker, one persimmon from Virginia infested with borers, and 500 rose bushes from California showing from 10 to 20 per cent crown gall infection in different varieties.

*Special Corn Borer Certificates*

Certain states where the European corn borer is not present or is present only in small numbers require special certification of materials capable of carrying this insect. A total of 116 such certificates was issued.

*Phylloxera Certification*

One shipment of plant material was inspected and certified free of *Phylloxera*, in accordance with certification requirements of Holland.

*Foreign Inspections*

One inspection was made of unquarantined plant material entering New Jersey from Canada. No infestation was found.

*Dealers' Visits*

The premises of seven holders of dealers' certificates were inspected during the winter months to check on the cleanliness of held-over stock and to check sources of supply of plant material.

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*Red Stele Disease of Strawberry*

During March and April 1952, 77-1/3 acres of strawberry plants were inspected for 26 growers. Twenty-eight inspections were necessary to cover the acreage entered. Red stele infections were found in the plantings of two growers in Monmouth County. The infected area totaled 6-½ acres of Sparkle, Fairland and Monmouth varieties. The diseased Fairland bed had been growing two years from source plants from Maryland. The diseased Sparkle and Monmouth plants had been grown for several years from the growers' own source plants. In each planting the beds were one year old. These plantings were disqualified. Sparkle and Fairland have been developed because of their resistance to red stele and these findings raise the question as to whether there might be a new strain of red stele disease in New Jersey.

*Federal Census Questionnaires*

Early in January Dr. Richard P. White, executive secretary of the American Association of Nurserymen requested that the Department cooperate with the U. S. Bureau of the Census in its mail census of producers of horticultural specialties (seed, bulb, florist and nursery industries) in New Jersey by firms which did not reply to its mailed questionnaires.

Results from previous questionnaires sent out by the Bureau of the Census over a period of three years indicated that the value of horticultural specialties was much more important as a source of agricultural income than had previously been understood. Since information of this type is important, this Department agreed to cooperate with Dr. Roy V. Peel, Director, Bureau of the Census, by making any necessary field calls, to obtain a return of these questionnaires. The Bureau Chief was deputized as a special agent of the Bureau of the Census, without compensation.

Lists of 499 firms that had received the questionnaires from the Federal Bureau of the Census, but had not returned them, were received by this Department. A total of 218 firms returned their questionnaires prior to active participation by this Department. The remaining 281 firms were contacted by mail and in addition, a total of 117 visits was made by five inspectors before the returns were completed.

*Strawberry Virus*

On February 28, the Bureau chief attended a conference in Beltsville, Maryland, to consider a virus control program for strawberries. Plant pest officials from the states covered by the Eastern and Central Plant boards were present. Representatives of the New Jersey Agricultural Experiment Station, who have been working on this problem, were also present. Talks on the strawberry virus situation in the eastern United States, maintenance of

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virus-free plantings, inspection of greenhouses, indexing work and reports from various State regulatory extension and research workers were on the program.

Certain species of strawberry leaf-infesting aphids, primarily of the genus, *Capitophorus*, are recognized as vectors in the spread of strawberry virus diseases. The known vectors are established in New Jersey and extensive work is being carried on at the State Agricultural Experiment Station to ascertain the population of aphid vectors throughout the State, to index strawberry varieties, to make available virus-free stock plants and to breed resistant varieties.

At the meeting, an agreement was reached whereby the Maryland producers of plants from indexed virus-free stock would not only treat their plantings periodically, as agreed with Maryland authorities, but would treat all plants shipped to New Jersey with parathion dust just before packing, to destroy any aphids present on the plants.

The Department was represented at a conference in Beltsville and Salisbury, Maryland, May 28 and 29, which was attended by many of the states interested in strawberry viruses. At this meeting phases of indexing plants and variety tests of strawberry and other fruits were shown. Visits were made also to plantings of virus-free plants in Beltsville and the Maryland Experiment Station and to plantings considered virus-free and propagated by commercial plant growers and commercially available.

As a check on the control of aphids by the growers in Maryland, State inspectors questioned the New Jersey growers entered in the red stele certification program about anticipated importations of plants. These growers agreed to notify the Department when they imported any plants from other states so that these plants could be inspected for aphids. Five shipments from Maryland, totaling 10,500 plants, were checked. No aphids were found in the shipments, showing that these Maryland growers were living up to their agreement to treat plants before shipment to prevent introduction of additional vectors into New Jersey.

## BLUEBERRY STUNT DISEASE

This report on the seventh year of blueberry stunt certification covers the calendar year of 1951. Two inspections are made each year, one in the spring and one in the fall, when symptoms are most prevalent and conspicuous. Diseased bushes are tagged for removal and destruction within 10 days. Fields showing in excess of three-fourths of 1 per cent (0.75 per cent) at either inspection, or in excess of 1 per cent for the two inspections, are rejected and refused certification. A grower must remove all "stunted" bushes in a rejected field to retain the remaining fields as certifiable.

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*Summary of Spring Inspection (1951)*

Thirty-seven growers entered a total of 436.88 acres for inspection but withdrew 45.75 acres voluntarily. Of the 391.13 acres inspected, a total of 18.99 acres was rejected—7 acres because of diseased plants in excess of three-fourths of 1 per cent and 11.99 acres for non-removal of diseased plants within the allotted time. It was required that a total number of 351 bushes be removed from the unrejected 372.14 acres, giving an average of 0.94 stunt bushes per certifiable acre at this inspection.

*Summary of Fall Inspection (1951)*

Of the 372.14 acres eligible for fall inspection, one-half acre was withdrawn because of the removal of plants previous to this inspection and eight acres of young nursery plants were rejected because they were so overgrown with weeds that an adequate inspection was impossible. Two additional acres were rejected because the total number of bushes tagged during both spring and fall inspections exceeded the permitted tolerance of 1 per cent. It was required that 162 "stunted" bushes be removed from 361.64 acres certified. This gives an average of 0.44 stunt bushes per acre certified during the fall inspection.

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## STATISTICAL SUMMARY 1951 BLUEBERRY SEASON

| Grower | Acres Entered | Voluntarily Withdrawn Spring | Acres Inspected Spring | Acres Inspected Fall | Acres Rejected Spring | Acres Rejected Fall | Stunt Bushes Tagged (certifiable portion) Spring | Stunt Bushes Tagged (certifiable portion) Fall |
|---|---|---|---|---|---|---|---|---|
| Ahlrichs | 25.50 | | 25.50 | 25.50 | | | 13 | 9 |
| Anderson | 7.00 | | 7.00 | 7.00 | | | | |
| Applegate | 1.00 | | 1.00 | 1.00 | | | | |
| Arpin | 2.50 | | 2.50 | 2.50 | | | 1 | |
| Atlantic Blueberry Co. % Galletta Bros. | 18.00 | 17.00 | 1.00 | 1.00 | | | | |
| Beebe | 12.00 | | 12.00 | 12.00 | | | | |
| Bray | 17.66 | 5.00 | 12.66 | | 12.66[1] | | | |
| Brown | 6.00 | | 6.00 | 6.00 | | | | 2 |
| Budd | 26.00 | | 26.00 | 26.00 | | | 14 | |
| Est. of Benj. Cavileer (Mrs. B. Cavileer) | 10.14 | | 10.14 | 10.14 | | | 28 | |
| Clevenger | 10.00 | | 10.00 | 10.00 | | | 2 | |
| Cohen | 6.00 | | 6.00 | 6.00 | | | 29 | 8 |
| Cutts Bros. | 12.00 | | 12.00 | 12.00 | | | | |
| DiDonato & Son | 5.00 | | 5.00 | 5.00 | | | | |
| Galletta Bros. | 29.00 | | 29.00 | 29.00 | | | | |
| Green | 6.50 | | 6.50 | 6.50 | | | 2 | 4 |
| Haines, E. & Bro. | 15.00 | | 15.00 | 15.00 | | | | |
| Haines, H. & E. | 23.00 | | 23.00 | 23.00 | | | 7 | |
| Hamilton | 10.00 | | 10.00 | 10.00 | | | | 1 |
| Heimbach | 4.58 | | 4.58 | 1.25 | 3.33[2] | | | |
| Knapp | .75 | | .75 | .75 | | | 2 | |
| Laurel Farms, Inc. | 25.00 | 12.00 | 13.00 | 13.00 | | | 43 | 3 |
| Leach | 21.75 | 2.75 (+.50 withdrawn fall insp.) | 19.00 | 18.50 | | 2.00 | 57 | 62 |
| Lovett | 1.25 | | 1.25 | 1.25 | | | | |
| Manning | 11.00 | | 11.00 | 11.00 | | | 23 | 7 |
| Mood | 8.00 | | 8.00 | 8.00 | | 8.00[3] | | |
| Norcross | 9.00 | | 9.00 | 9.00 | | | 4 | 6 |
| O'Neill | 10.00 | | 10.00 | 10.00 | | | 4 | 6 |
| Pinkham | 15.00 | | 15.00 | 12.00 | 3.00 | | 54 | 24 |
| Pursell | 3.00 | | 3.00 | 3.00 | | | | |
| Rogers | 42.00 | 6.00 | 36.00 | 36.00 | | | 36 | 5 |
| Scammell | 10.00 | | 10.00 | 10.00 | | | | |
| Scarano | 6.50 | | 6.50 | 6.50 | | | 14 | 20 |
| Shaw | 8.25 | 3.00 | 5.25 | 5.25 | | | 12 | 1 |
| Stevenson | 6.00 | | 6.00 | 6.00 | | | 1 | |
| Volk | .50 | | .50 | .50 | | | | |
| White | 12.00 | | 12.00 | 12.00 | | | 5 | 4 |
| Totals | 436.88 | 45.75 (+.50 withdrawn fall) 46.25 | 391.13 | 371.64 (+.50) 372.14 | 18.99 | 10.00 | 351 | 162 |

[1] 4.00 rejected for high stunt
8.66 rejected for non-removal of plants
[2] 3.33 rejected for non-removal of plants
[3] 8.00 rejected, plants overgrown with weeds, impossible to inspect in fall

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Spring—37 growers—436.88 acres
45.75 " voluntarily withdrawn

391.13 " inspected
18.99 " rejected

372.14 " remaining, giving an average of 0.94 "stunted" bushes per acre; 351 bushes tagged.

Fall—371.64 acres inspected (0.50 acre withdrawn)
10.00 " rejected

361.64 " remaining, giving an average of 0.44 "stunted" bushes per acre; 162 plants tagged.

SUMMARY OF SEVEN YEARS OF BLUEBERRY STUNT INSPECTION
1945-51

| | Growers in Program | Acres Certified | Stunt Bushes found | Stunt Bushes per Acre Certified |
|---|---|---|---|---|
| 1945 | 14 | 155.25 | 698 | 4.7 |
| 1946 | 26 | 350.23 | 2,002 | 5.7 |
| 1947 | 23 | 338.88 | 813 | 2.4 |
| 1948 | 21 | 358.30 | 519 | 1.4 |
| 1949 | 34 | 364.41 | 550 | 1.5 |
| 1950 | 33 | 376.00 | 681 | 1.8 |
| 1951 | 37 | 361.64 | 513 | 1.4 |

Spring symptoms during 1951 appeared early and mostly at one time. As a result, few additional diseased bushes were found when checking for removal of previously tagged diseased bushes. On the premises of two growers, however, symptoms were complicated by a condition similar in many respects to stunt. In one case this was believed to be due to an excess of manganese in fertilizer applied to the field; the other also was believed to be nutritional. Fall symptoms were slow and protracted in their appearance so that it was necessary to reinspect several plantings inspected early in September.

### *Raspberry Plant Certification*

Eleven inspections of 10.25 acres were made for two growers desiring certification of their raspberry plantings for freedom from virus diseases. This certification is necessary for the shipment of bramble plants into states having such requirements.

### *Miscellaneous Inspections*

Three plantings of *Berberis thunbergii* V. *atropurpurea* (red barberry) were inspected for trueness-to-type at the request of Dr. L. W. Melander, pathologist, Barberry Eradication Project. U. S. Department of Agriculture.

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## POST-ENTRY QUARANTINE

Under the revised foreign plant pest act of the U. S. Department of Agriculture (Quarantine 37, revised September 1, 1948) certain plant material imported under permit from foreign countries and capable of carrying virus and other plant pathogens must be grown under quarantine and under the supervision of this Department until released as free from disease. A safe growing period for most of this material is considered to be two years. However, *Dianthus* sp. is released after an inspection for a period of one year and *Laburnum* sp. must be held for a period of three years.

### MATERIAL IMPORTED UNDER POST-ENTRY QUARANTINE

July 1, 1951-June 30, 1952

| Date of Entry 1951 | Country of Origin | Quantity and Material | Destination by Counties |
|---|---|---|---|
| September | Guatemala | 1 Quercus | Monmouth |
| | | 1 Dianthus | |
| | | 3 Jasminum | |
| | | 2 Passiflora | |
| October | Holland | 50 Dianthus | Bergen |
| | Bermuda | 5 Passiflora | Monmouth |
| November | Belgium | 10 Ribes (currant) | Atlantic |
| | | 10 Ribes (gooseberry) | |
| | Indonesia | 6 Anthurium | Bergen |
| | | 1 Passiflora vitifolia | |
| December | Japan | 13 Phoenix roebelini | Bergen |
| | Holland | 600 Acer | Morris |
| | Denmark | 500 Dianthus cuttings | Passaic |
| 1952 | | | |
| January | Holland | 300 Ilex crenata convexa | Bergen |
| | Holland | 200 Berberis thunbergii | Morris |
| March | Germany | 5 Azalea | Bergen |
| | Holland | 200 Acer | Mercer |
| | | 25 Jasminum bessianum | |
| | | 25 Rhododendron myrtifolium | |
| | | 25 Sorbus villmoriniana | |
| | England | 120 Malus | Middlesex |
| | England | 14 Daphne cneorum | Morris |
| | | 3 Daphne petraea | |
| | | 3 Vaccinium oxycoccus | |
| | England | 1 Juniperus virginiana | Passaic |
| | Holland | 100 Acer palmatum atropur-pureum | Passaic |
| | Holland | 415 Acer Schwedleri | Passaic |
| | Holland | 1,000 Rosa multiflora | Union |
| | | 1,000 Hydrangea | |
| | | 1,000 Ilex | |
| | | 1,500 Laburnum (including 352 diseased and destroyed) | |
| | Holland | 800 Acer | Union |
| | Holland | 60 Acer palmatum | Union |
| | | 25 Euonymus alatus | |
| | | 25 Hydrangea petiolaris | |
| | | 100 Juniperus pfitzeriana | |

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| | | | | |
|---|---|---|---|---|
| April | Holland | 150 | Acer | Burlington |
| | | 50 | Laburnum (including 1 diseased and destroyed) | |
| | Holland | 50 | Acer | Camden |
| | | 250 | Ilex | |
| | England | 10 | Hydrangea | Mercer |
| | | 5 | Ligustrum ovalifolium | |
| | Holland | 1,000 | Acer | Morris |
| | Holland | 100 | Berberis thunbergii | Morris |
| | Holland | 27 | Daphne | Morris |
| | | 6 | Vacciniuni | |
| | | 3 | Juniperus | |
| | Holland | 2.750 | Ilex | Monmouth |
| | Holland | 150 | Acer palmatum atropurpureum | Monmouth |
| | Holland | 79 | Laburnum | Passaic |
| | | 100 | Acer | |
| | Holland | 9 | Laburnum vossii | Somerset |
| | Holland | 425 | Acer palmatum atropurpureum | Somerset |
| | | 453 | Rosa multiflora | |
| May | Indonesia | 2 | Passiflora | Bergen |
| | Belgium | 300 | Anthuriuni | Bergen |
| June | Belgium | 40 | Hydrangea | Bergen |

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## PLANT MATERIAL RELEASED UNDER POST-ENTRY QUARANTINE

July 1, 1951-June 30, 1952

| Shipment Received from Hoboken | Country of Origin | Quantity and Material | Destination by Counties |
|---|---|---|---|
| 3/3/49 | England | 64 Sorbus | Monmouth |
| 11/17/49 | Italy | 2 Diospyros | Hudson |
| | | 2 Ficus | |
| 11/23/49 | Holland | 255 Rosa | Bergen |
| 11/28/49 | England | 12 Rosa | Essex |
| 12/10/49 | Holland | 27,250 Rosa | Bergen |
| | | 400 Hydrangea | |
| 12/10/49 | Holland | 75 Rosa | Bergen |
| | | 200 Primula | |
| 12/20/49 | Holland | 500 Acer | Somerset |
| 12/21/49 | Holland | 1,200 Euonymus | Monmouth |
| 12/29/49 | Holland | 26,000 Rosa | Bergen |
| 12/30/49 | Holland | 25 Primula | Passaic |
| 1/4/50 | Scotland | 6 Rosa | Burlington |
| 1/12/50 | Holland | 27,000 Rosa | Bergen |
| 1/13/50 | Canada | 175 Rubus | Middlesex |
| 1/19/50 | Denmark | 500 Dianthus | Union |
| 1/26/50 | Holland | 1,240 Rosa | Bergen |
| 2/20/50 | Germany | 29 Rosa | Bergen |
| 3/3/50 | Holland | 27,000 Rosa | Bergen |
| 3/3/50 | Holland | 25,000 Rosa | Bergen |
| 3/15/50 | Holland | 200 Acer | Union |
| 3/30/50 | Holland | 300 Euonymus | Somerset |
| 4/5/50 | Holland | 56 Aesculus | Passaic |
| | | 360 Daphne | |
| | | 25 Euonymus | |
| | | 300 Jasminum | |
| | | 75 Rubus | |
| | | 100 Laburnum | |
| | | 17 Hydrangea | |
| | | 3 Rosa | |
| | | 215 Prunus | |
| | | 19 Quercus | |
| 4/10/50 | Japan | 1 Juniperus | Bergen |
| 4/12/50 | Holland | 432 Hibiscus | Passaic |
| | | 392 Sorbus | |
| | | 420 Acer | |
| | | 438 Wisteria | |
| 4/12/50 | Holland | 300 Ilex | Monmouth |
| 4/13/50 | Holland | 750 Acer | Union |
| 4/18/50 | Holland | 70 Acer | Bergen |
| 4/20/50 | Holland | 250 Malus | Monmouth |
| 4/21/50 | Ireland | 24 Ilex | Monmouth |
| 5/10/50 | Belgium | 80 Anthurium | Somerset |
| 7/5/50 | Norway | 50 Hydrangea | Middlesex |
| 8/10/50 | France | 36 Dianthus | Somerset |
| 1/18/51 | Denmark | 1,000 Dianthus | Passaic |
| 4/2/51 | France | 84 Dianthus | Somerset |
| 4/9/51 | Holland | 5 Rhododendron | Bergen |
| 10/15/51 | Bermuda | 5 Passiflora | Monmouth |
| 10/18/51 | Holland | 50 Dianthus | Bergen |
| 1/16/52 | Holland | 300 Ilex | Bergen |

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A total of 235 inspections was made during the year. Included in this total were investigations to determine the facilities for growing post-entry material, regular inspections of growing material, and final inspection prior to recommending release of material grown for an adequate period of time.

During the fiscal year, 34,876 plants were released from post-entry quarantine regulation. These plants represent only 24 per cent of the original importations of 143,292 plants. Of the plants released, 29,688 were roses, surviving and satisfactory from a total importation of 133,870. The accompanying table shows surviving and released plants compared with importations. A study of the table indicates that it might be economically unwise at this time to import such materials as *Rosa*, *Primula*, *Euonymus*, *Daphne* and *Laburnum*, since survival through the post-entry quarantine period is poor. Of course, the importation of varieties or species of outstanding horticultural interest might not depend upon survival of large numbers of plants through the quarantine period. On the other hand, there are quite a few genera which came through the inspection period very well. Among them are *Dianthus*, *Aesculus*, *Jasminum*, *Hibiscus*, *Wisteria* and *Malus*. The soundness of importing many of the remaining genera might be questionable, while others were imported in such small numbers that survival rate cannot yet be judged.

| Genus of Plants | Number Surviving and Released | Number Imported |
|---|---|---|
| Acer | 1,012 | 1,940 |
| Aesculus | 54 | 56 |
| Anthurium | 48 | 80 |
| Daphne | ..... | 360 |
| Dianthus | 1,464 | 1,670 |
| Diospyros | 2 | 2 |
| Euonymus | 410 | 1,525 |
| Ficus | 2 | 2 |
| Hibiscus | 420 | 432 |
| Hydrangea | 181 | 467 |
| Ilex | 231 | 624 |
| Jasminum | 300 | 300 |
| Juniperus | 1 | 1 |
| Laburnum | ..... | 100 |
| Malus | 221 | 250 |
| Passiflora | ..... | 5 |
| Primula | 20 | 225 |
| Prunus | 74 | 215 |
| Quercus | 3 | 19 |
| Rhododendron | ..... | 5 |
| Rosa | 29,688 | 133,870 |
| Rubus | 85 | 250 |
| Sorbus | 245 | 456 |
| Wisteria | 415 | 438 |

All imported materials were fumigated with methyl bromide to destroy insect life. Although a few plants were destroyed because of suspicion of

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virus and other diseases, most of the materials were eliminated because they failed to make proper growth. The poor general condition of the plants at receipt was most often responsible for this.

### ALFALFA WEEVIL, *Hypera postica* Gyll.

In the spring of 1952, the nearby states of Maryland and Delaware reported the presence of alfalfa weevil, an insect of economic importance in the western and southwestern United States, but one long considered unable to become established in the northeastern part of the country.

Plans were made for a cooperative survey with the State Agricultural Experiment Station in New Brunswick to determine whether or not the insect was present in this State. This Department furnished a field man to scout alfalfa fields and other likely areas. The Experiment Station agreed to receive the collections and identify the material. The work was begun on May 20, 1952, and specimens of the insect were found for the first time on June 17. By the end of that month, alfalfa weevil had been collected from 11 locations as follows: Cumberland County, Bridgeton and Millville; Salem County, Quinton, Salem, Hancocks Bridge, Pennsville, and Woodstown; Gloucester County, Swedesboro, Mullica Hill, and Mickleton; and Atlantic County, Atlantic City.

The survey will be extended to determine the boundaries of the infestation in New Jersey and to aid in assembling data on the life history of the pest so that proper control measures might be recommended.

### EUROPEAN CORN BORER SURVEY

The annual survey to determine the status of the European corn borer population in New Jersey was begun late in September and completed during October. The regular nursery inspectors were used in this work, which is conducted in cooperation with the U. S. Department of Agriculture. Ten fields of standing corn in each county were examined, except in Essex and Union where five each were examined and Hudson where none was examined. The average number of borers per 100 plants was then determined for each county.

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RESULTS OF THE EUROPEAN CORN BORER SURVEY

| County | Average Number of Borers per 100 Plants 1950 | 1951 |
|---|---|---|
| Atlantic | 39 | 68 |
| Bergen | 119 | 58 |
| Burlington | 39 | 161 |
| Camden | 138 | 433 |
| Cape May | 60 | 88 |
| Cumberland | 18 | 118 |
| Essex-Union | 58 | 62 |
| Gloucester | 53 | 185 |
| Hunterdon | 9 | 13 |
| Mercer | 124 | 29 |
| Middlesex | 65 | 115 |
| Monmouth | 17 | 36 |
| Morris | 18 | 6 |
| Ocean | 6 | 50 |
| Passaic | 49 | 91 |
| Salem | 14 | 44 |
| Somerset | 10 | 29 |
| Sussex | 39 | 25 |
| Warren | 25 | 4 |
| State mean comparable counties (19) | 48 | 85 |

On the basis of this survey, the Federal Bureau of Entomology and Plant Quarantine has supplied an estimate of loss in grain corn through infestations by this insect. In the tabulation below, the loss is given by percentages and bushels of reduced yields, as compared with estimated production based upon the December estimate of the Bureau of Agricultural Economics.

LOSS IN GRAIN CORN FROM EUROPEAN CORN BORER

| County | Estimated Production in 1951 (Bushels) | Loss Per cent | Loss Bushels |
|---|---|---|---|
| Atlantic | 133,783 | 2.04 | 2,890 |
| Bergen | 12,050 | 1.74 | 213 |
| Burlington | 1,125,078 | 4.83 | 57,099 |
| Camden | 195,692 | 12.99 | 29,364 |
| Cape May | 177,413 | 2.64 | 4,811 |
| Cumberland | 644,370 | 3.54 | 23,647 |
| Essex-Union | 32,676 | 1.86 | 619 |
| Gloucester | 508,635 | 5.55 | 29,888 |
| Hunterdon | 584,193 | 0.39 | 2,287 |
| Mercer | 453,986 | 0.87 | 3,984 |
| Middlesex | 208,174 | 3.45 | 7,438 |
| Monmouth | 683,638 | 1.08 | 7,463 |
| Morris | 164,796 | 0.18 | 297 |
| Ocean | 110,714 | 1.50 | 1,686 |
| Passaic | 7,229 | 2.73 | 202 |
| Salem | 1,064,334 | 1.32 | 14,237 |
| Somerset | 290,679 | 0.87 | 2,551 |
| Sussex | 87,962 | 0.75 | 664 |
| Warren | 596,596 | 0.12 | 717 |
| Total | | | 190,057 |

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From the above summary, it is estimated that the New Jersey grain corn crop suffered a loss of 2.68 per cent, or 190,057 bushels. At $1.87 per bushel (December 15 average price received by New Jersey farmers) the value of the loss is approximately $355,000.

### GOLDEN NEMATODE *(Heterodera rostochiensis)* OF POTATOES

For the fourth consecutive year, in 1951 a survey was conducted in this State to determine whether or not this serious pest of potatoes was present. The survey was made by collecting potato grader debris in paper bags and storing and drying it at the White Horse Laboratory of the Division. After drying had been completed, a crew of four laboratory specialists from the golden nematode project in Hicksville, Long Island, set up facilities for diagnosis of the samples at White Horse. The samples were water washed and screened and the residue microscopically examined for the presence of cysts of the nematode.

The grader debris was collected during July and August by one temporary employee of this Division and one inspector of the Federal project. A total of 4,278 samples was taken from graders located throughout the commercial potato growing acreage. It is estimated that 19,561 acres (about two-thirds of the State's potato land) were represented in these samples.

Processing and diagnosis of the collected material was started on August 27 and completed by the end of September. No golden nematode was found.

In the course of a similar survey in Connecticut a nematode was found in tobacco land in the northern part of the state. It was identified as *Heterodera rostochiensis* but because it feeds on tobacco rather than potato plants, it has been given the common name "tobacco-cyst nemotode". Research to date indicates that the organism will attack and successfully complete its life cycle on tomato plants, but there is still no evidence that it can become successfully established in potato fields. The nematode is presently being studied by both Connecticut and Federal authorities. Regulatory action has not yet been taken by the states or the Federal government, but such action will be given serious consideration in New Jersey and elsewhere, as the life history and the hazard become known.

In March 1952, the Department was informed that commercial imports of potatoes from Spain were contemplated. Conditions for the importation of the potatoes were discussed by the Bureau chief with officials of the foreign plant quarantine service of the Federal Bureau of Entomology and Plant Quarantine and representatives of the importers on March 27. This Division was particularly interested because of the danger of importing golden nematode, *Heterodera rostochiensis*, and potato wart, *Synchytrium endob-*

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*ioticum*. Golden nematode is not known to occur in Spain, but because of its known widespread distribution in Europe, the possibility of receiving the organism from Spain had to be considered.

The original plans were to unload the potatoes at Port Newark, but this Department objected to such unloading directly on New Jersey soil, because of possible contamination with nematodes. It was felt that a proper safeguard would consist in stacking the potatoes on tarpaulins, until they might be found free of pests. Rather than meet this condition, the boat which arrived on March 30 docked at 21 East River in New York, and was unloaded at that pier. Inspection, conducted by the plant quarantine service, consisted of moving to a grader every twentieth bag of potatoes. At that point they were dumped into the hopper, the debris collected and the potatoes inspected visually by six inspectors.

The collected debris was processed by a laboratory crew of the golden nematode project in search of cysts of this pest. Thus, a good inspection was made at New York of a 5 per cent (3,000 bags) sample of the importation and the potatoes were found free of injurious pests and plant diseases and released for sale as table stock. A second shipment of potatoes arrived in New York City on April 27. The same inspection procedure was carried out in that case, again with negative results.

IMPORTATION OF POTATOES FROM SPAIN

| Date of Arrival | Bags in each Shipment | Pier | Origin in Spain |
|---|---|---|---|
| 3/30/52 | 58,782 | 21 E. River, New York City | Bilbao |
| 4/9/52 | 68,207 | 10 North River, New York City | Bilbao |
| 5/1/52 | 69,694 | 10 North River, New York City | Bilbao |
| 5/14/52 | 42,032 (N. Y.) | 10 North River, | |
| | 18,900 (Norfolk) | New York City | Bilbao |
| 6/2/52 | 6,159 | 21 Staten Island | Valencia |
| 6/8/52 | 38,847 | 10 North River, New York City | Almeria |
| 6/11/52 | 3,101 | Pier D, Jersey City | Barcelona |
| 6/22/52 | 17,454 (bags) | 31 E. River | Mataro Barcelona, |
| | 1,527 (crates) | New York City | Palma de Mallorca |

After the second arrival, when no pests had been detected on the potatoes, the Department was again asked whether it would consider placing restrictions on further imports. The Federal authorities and importers were told that the Department would still consider the potatoes hazardous to the State's potato industry and would still restrict their handling until it was known whether or not they harbored potato pests. Accordingly, it was arranged to receive all potato boats from Spain at New York docks. During the inspection of the fifth shipment, on June 5, 1952, the inspectors found

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golden nematode. The potatoes bore certificates that this nematode did not exist in Spain. On June 6 the U. S. Department of Agriculture cancelled all permits for these importations.

However, several vessels were already on their way to the United States and these were the last three boats to arrive. The potatoes which arrived on June 8 were inspected, found free of the nematode and released for sale as table stock. The 3,101 bags that arrived on June 11 were brought in without the prior knowledge of the foreign plant quarantine service and that agency cooperated with the Department by insisting that the potatoes be unloaded on a lighter rather than on New Jersey soil. The inspection on the lighter determined the presence of golden nematode and the potatoes were refused entry. The eighth and last shipment to arrive was found to be infested with nematode and was refused entry.

Although this Department was criticized, especially by the importers, for insisting upon protective measures despite the Spanish certification that the golden nematode of potatoes did not exist in that country, the action proved proper and New Jersey is still considered free from this pest.

## HEARING ON CONTROL PROJECTS OF THE FEDERAL BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

On October 26 and 27 a hearing was held in Boston, Massachusetts, by a study group appointed by Secretary of Agriculture Brannon, at the direction of the House Committee on Appropriations for the Department of Agriculture for the fiscal year 1952, to review control and quarantine projects and make recommendations for

(a) Need for continuing program.
(b) Revision of methods of control.
(c) Increasing non-Federal cooperation and contributions.
(d) Making the programs contingent upon adequate state laws and enforcement of them.

The subjects discussed at the hearing were: gypsy moth, golden nematode, white pine blister rust and Japanese beetle. These major pests are of vital importance in New Jersey, with the possible exception of white pine blister rust. Under the present Federal-state participation, there appears to be a proper sharing of costs and responsibilities. The following official statement of this Department was presented by the Bureau Chief at the hearing:

> "This is a statement of the views of the New Jersey Department of Agriculture relative to the control programs of the Bureau of Entomology and Plant Quarantine, prepared in accordance with the request of Secretary of Agriculture Charles F.

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Brannon in his letter of October 11, 1951, addressed to the New Jersey Secretary of Agriculture.

"We are, of course, primarily interested in such subjects as Gypsy Moth, Golden Nematode and Japanese Beetle but in addition we are also interested in such control programs as those dealing with the White-Fringed Beetle, and other pests which we do not have in New Jersey and which we believe are being kept out of our state by the Bureau's control program, quarantine regulations, and inspection service.

"We are firm in our belief that the Gypsy Moth Control program should be continued and possibly accelerated. From 1920 to 1932 the New Jersey Department of Agriculture and the old Bureau of Entomology of the United States Department of Agriculture worked jointly at the task of exterminating a serious infestation that extended over one-fourth of the state's area. After twelve years of work and an expenditure of over one million dollars by each agency, the Gypsy Moth was successfully exterminated from New Jersey. Insecticides and equipment are presently available which make it possible to eliminate the insect over large areas at no more than one-twentieth the cost of earlier operations. The time might very well be right to make a concerted and continuous effort for a period of 10 to 15 years to eradicate this insect from the United States. We refer you to the results of DDT spraying operations from aircraft in Pennsylvania and on Cape Cod. Certainly there is good indication that, with proper financial investment, the Gypsy Moth can be eliminated from the United States. If funds for elimination are not presently possible, then the moth should warrant expenditure of sufficient funds to control any outbreaks in areas other than that continuously infested. Thus when funds are finally made available for permanent solution of the Gypsy Moth problem, the additional complications of a larger, more scattered population would not be present.

"Since 1932, the New Jersey Department of Agriculture has employed a small force of scouts to police the state for Gypsy Moth colonies. We have our investment to protect and any change in the federal quarantine procedure that might open New Jersey to infestations of this insect would not be welcomed by us. We do not believe that a program contingent upon the varied enforcements of different states would give us adequate protection. We do believe that the program to be adequate must be a co-ordinated one, administered by an agency which can measure the degree of hazard in the infested state and the degree of protection needed in the uninfested state and write its program accordingly. The control and quarantine programs have been handled in exactly this manner for many years and we are fully confident that the arrangement has been of greatest benefit to the infested, as well as the uninfested states.

"As for the Japanese Beetle, the entire State of New Jersey is now in the infested area. Over the years we have learned to live with the beetle and at present control methods are greatly superior to what they were a few years back. However we are sympathetic to the efforts of uninfested states and of their desire to keep their states free of beetles for as long as possible. For many years we have cooperated whole-heartedly and with adequate funds in the joint federal-state control program. We would not like to see any changes that would result in a flock of state quarantines against New Jersey on account of the Japanese Beetle or any changes that would place a greater financial burden upon New Jersey than we are carrying at present. It is our contention that the cost of protecting distant states is a national as well as a state responsibility. We believe that the views of this state, of the states of the Eastern Plant Board and of industry are all in agreement on this subject, as demonstrated at the March 30, 1951 hearing held in Washington to present information as to whether or not this quarantine should be revoked.

"The White Pine Blister Rust control program is not important in New Jersey because of the absence of large native white pine stands.

"As for the Golden Nematode infestations on Long Island and elsewhere, these are threats to our important white potato growing areas. Although not yet the subject of a federal quarantine, we are of the opinion that there should

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be such a quarantine in order to unify and enforce adequate quarantine methods designed to prevent spread.

"In general and with respect to all federal quarantines, it is our opinion that their administration for the most part has greatly delayed the spread of certain insect pests and plant diseases and we think that such control measures should proceed hand-in-hand with research work. We are not in favor of such quarantines being left to the states. If this were done, there would result a multiplicity of quarantines, varied and non-uniform regulations, and confusion to industry. In addition the enforcement of anything designed to benefit the country at large should be in the hands of one agency and not numerous independent agencies. Otherwise enforcement will be defeated. Although it may be necessary to revise some methods of control and to get greater monetary support from certain states, we do not believe that national or regional programs should be made contingent upon state laws and their enforcement by state agencies. This procedure has never worked too well in the past. And the present system of federal quarantines was formulated in order to correct the confusion and inadequate measures that existed formerly.

"It is hoped that there will be no radical change in policy by the United States Department of Agriculture, in spite of reduced appropriations and changes in dollar values. It is our opinion that past policies have been sound and that quarantines have been highly useful in preventing and delaying spread. Sound policies should not be thrown out the window because of temporary set-backs in obtaining sufficient administrative funds.

October 25, 1951."

The study group consisted of Dr. G. D. Humphrey, president, University of Wyoming, Laramie, Wyoming—from Land-Grant Colleges; Roy E. Yung, Illinois Director of Agriculture, Springfield, Illinois—from Secretaries, Directors, and Commissioners of Agriculture; Fred V. Heinkel, president, Missouri Farmers Assn., Inc., Columbia, Missouri—from farm organizations; L. S. Hitchner, National Agricultural Chemicals Assn., Washington, D. C.—from insecticide industries; Harris Collingwood, Legislative Reference Service, Library of Congress, Washington, D. C.—from the Legislative Branch of the Federal Government; W. A. Minor, Assistant to the Secretary of Agriculture, Washington, D. C., chairman; and Henry G. Herrell, secretary.

The report of the findings of this study group appeared early in 1952. Recommendations were favorable to continuance of Federal support to those projects of special interest to New Jersey. Some criticism of disproportional financial support was made. It was recommended in several instances that individual property owner support should be increased. The group recommended that a plan for eradication of the gypsy moth from the United States within a period of five years would seem feasible. No curtailment of Japanese beetle or golden nematode activities was recommended.

The recommendations of this group should carry considerable weight in future determinations by the Congress of appropriations for the quarantine and control activities of the U. S. Bureau of Entomology and Plant Quarantine.

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## THE WHITE-FRINGED BEETLE, *Graphognathus*, sp.

Periodically, this Division has cooperated with the Federal Bureau of Entomology and Plant Quarantine in surveys to determine whether or not the white-fringed beetle might be present in the State. The present area in the United States known to be infested by this destructive insect of South American origin includes all or parts of the states east of the Mississippi river and south of the northern boundaries of North Carolina and Tennessee.

Based on a study of the white-fringed beetle in its native habitat, there is some reasonable doubt that the insect can become established in New Jersey and other northern states, but it is important that constant vigilance be practiced. Control measures are presently available that would probably eradicate small infestations of this insect, but might be too expensive for eradication effort over large areas.

During July and August 1951, one inspector of this Division, assisted for a two-week period by two inspectors of the Federal project, scouted selected areas of the State. Work was begun on July 9 and discontinued on August 31. Federal assistance was provided for the period, July 25 to August 6. Inspections were based on recognition of adult weevil feeding signs on various host plants, wild and cultivated.

Most of the survey time was spent in inspecting the environs of 400 business establishments, such as motels, trailer parks, diners, restaurants, gas stations, roadside markets, and truck stops located on U. S. Highway No. 130, from Pennsville to Hightstown. Depending upon vegetative conditions, an area 50 to 100 feet square surrounding each of these sites was inspected.

In addition to the highway sites, the environs of 34 produce shipping points (Table 1) and 18 grain processing plants (Table 2) were inspected.

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## TABLE 1

### PRODUCE SHIPPERS

Adams Marketing Co., Hightstown
American Stores Warehouse, Newark
A. & P. Stores Warehouse, Newark
William Barton, Adelphia
Battleground Farms, Freehold & Englishtown Road, Freehold
Bennett & Clayton, Prospect Plains
Bennett & Mount, Hightstown
Bernard Brothers, Tucker St., Trenton
Blueberry Growers Cooperative Assn., New Lisbon
Brock & Baker, Route 25, Burlington
Cedarville Auction Market, Cedarville
Chamberlin & Barclay Inc., Cranbury
W. J. Clayton & Son, Smithburg Road, Freehold
Cooperative Growers Assn., Beverly
Dayton Fertilizer Corp., W. H. Clayton, Mgr., Dayton
Warren P. Dey Co., Jamesburg
Edward Dilatush Co., Robbinsville
The LeRoy Dyal Co., Plainsboro Road, Cranbury
Glassboro Auction Market, Glassboro
Holland & McChesney, Freehold
Landisville Auction Market, Landisville
S. Litowitz & Son, Inc., Tucker St., Trenton
T. J. Maloney, Route 33, Freehold
Miller Street Market, Newark
Harold Mount, Route 25, Hightstown
J. J. Pellett Co., Marlboro
Pioneer Potato Co., E. W. Vandenburg, Mgr., Windsor
Reed & Perrine, Tennent
Scheideler Brothers, Inc., Lawrence Station, Trenton
Seabrook Farm, Bridgeton
Simmons & Mount, Route 25, Hightstown
Swedesboro Auction Market, Swedesboro
F. H. Vahlsing Inc., Route 25, Robbinsville
Vineland Auction Market, Vineland

## TABLE 2

### GRAIN PROCESSORS

Berkaw & Mathews, Flemington
Brick Milling Co., Flemington
Brick Milling Co., Pennington
Central Jersey Farmers Cooperative Assn., Hightstown
Cooperative G.L.F. Exchange Inc., Bordentown
Delaware Valley Farmers Cooperative Assn., Flemington
Farmers Cooperative Assn., Hopewell
Farmers Cooperative Assn., Trenton
General Mills Co., Flemington
Hunterdon Cooperative G.L.F. Service Inc., Flemington
Kuhl Brothers, Three Bridges
Mercer Feed Co., Lawrenceville
R. B. Moore Co., Flemington
Niece Feed Co., Lambertville
Posner Brothers, Hopewell
Reed Co., Pennington
Ringoes Lumber & Feed Co., Ringoes
Smith Brothers, Stockton

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Joint inspections with the Federal surveying crew were conducted in: (1) the railroad yards, hospital area, recreational area, troop living areas, warehouse area and air base of Fort Dix; (2) the entire installation at Camp Kilmer; (3) Port Newark, part of the Pennsylvania freight yard and three produce shipping centers located in Newark, and (4) the port area of Camden bounded by Spruce, Clinton and Front streets and the adjacent Pennsylvania freight yards. The Hudson river water front area to a depth of approximately 300 feet was inspected from First Street in Hoboken to Edgewater.

### *Temporary Employees*

In order to complete the field work assigned to this Bureau for the summer months of 1951, it was necessary to hire ten men for a ten-week period beginning July 1. One man was assigned to the golden nematode project, one to the white-fringed beetle project, two to the gypsy moth project, two to the rodent ectoparasite survey and four to the Japanese beetle project.

All the temporary employees assisted in the blueberry stunt certification project for short periods prior to assignment to the above projects and after their completion.

## RODENT ECTOPARASITE SURVEY

For some time, the need has existed for accurate information on insect and other arthropod parasites of mammals in New Jersey. As stated in the 36th Annual Report of this Department, a survey was started in early June 1951, in cooperation with the New Jersey Agricultural Experiment Station, with the collection and deparasitization of rats from garbage or refuse dumps in the larger communities of the State. These animals and their parasites were considered of prime importance because of the implications of biological warfare. This Department has furnished the field men who have collected, and deparasitized the rats and grossly separated the ectoparasites. Dr. Elton J. Hansens of the Agricultural Experiment Station has given technical assistance to the project, directing the collection, identification and recording of the parasites. The following report has been prepared by Robert E. Messersmith, a student of veterinary medicine, who has had temporary employment in this work.

In addition to the 246 rats collected in the spring of 1951, 1,913 more rats have been collected and deparasitized during the period, July 1, 1951 to June 30, 1952. Parasites were stored for later mounting and identification.

Several methods of collecting the rats have been used.

1. Clubbing, after driving them from their burrows with calcium cyanide or carbon monoxide (exhaust gas).
2. Clubbing, after being dug out with a bulldozer.

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3. Shooting.
4. Trapping with spring traps (chiefly in buildings).

Rats were taken primarily from garbage and refuse dumps with particular attention being paid to the northeastern metropolitan area. In this section, a regular series of collections was maintained. Wherever possible, specimens were collected from other locations, including some trapped in feed mills and dwellings.

RECORD OF RATS CAPTURED
July 1, 1951-June 30, 1952

| County | Locations | Collections | Total Rats |
|---|---|---|---|
| Atlantic | 2 | 4 | 13 |
| Bergen | 11 | 26 | 162 |
| Burlington | 7 | 13 | 86 |
| Camden | 5 | 10 | 62 |
| Cape May | 3 | 5 | 10 |
| Cumberland | 4 | 13 | 48 |
| Essex | 1 | 14 | 170 |
| Gloucester | 4 | 6 | 29 |
| Hudson | 4 | 49 | 482 |
| Hunterdon | 5 | 14 | 79 |
| Mercer | 4 | 9 | 56 |
| Middlesex | 5 | 23 | 293 |
| Morris | 3 | 12 | 64 |
| Passaic | 1 | 8 | 40 |
| Salem | 4 | 9 | 39 |
| Somerset | 2 | 7 | 60 |
| Sussex | 2 | 5 | 33 |
| Union | 3 | 11 | 99 |
| Warren | 5 | 10 | 88 |
| Totals | 75 | 248 | 1,913 |

Between June 30, 1951 and January 31, 1952, 1,390 specimens of *Rattus norvegicus* were captured and a total of 360 fleas were taken from these animals. These fleas were identified by John Hadjinicolaou of the State Agricultural Experiment Station with doubtful specimens being checked by Dr. Harry D. Pratt of the U. S. Public Health Service in Chamblee, Georgia. *Xenopsylla cheopis* was taken from rats on eight dumps in the northeastern section and from three other locations. (This flea is reputed to be important the world over as the chief vector for the plague organism, *Pasteurella pestis*. It also is responsible for rat to rat and rat to man transmission of endemic or murine typhus.)

Of the total fleas taken in the metropolitan area from June 1 to September 30, 89.7 per cent were *X. cheopis*. Other fleas collected were *Nosopsyllus fasciatus* and *Ctenocephalides felis*. In winter collections (October to January), only *X. cheopis* was taken from rats on dumps. Rats trapped in buildings were found infested with *X. cheopis* in a large city and with *N. fasciatus* in rural areas. Two specimens of *Ceratophyllus gallinae* were taken from a rat trapped in a poultry hatchery.

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The seasonal distribution of fleas appears to follow the pattern in other surveys in this part of the country: a low flea population in June increasing to late August and then dropping rapidly. In late August at one location, the flea incidence reached a high of 5.1 *X. cheopis* per rat for the 20 rats captured.

Lice from approximately 100 rats have been identified as *Polyplax spinulosa*. (This louse is capable of rat to rat transmission of murine typhus.) No other species have been found.

No mites have as yet been identified. It is believed that there are at least 30 distinct species in the collection. Identification of the mites will necessarily proceed slowly.

During the spring of 1952, arrangements were made to take samples of blood, eye muscle and feces from rats already captured for deparasitization by the field crew. It was felt that this material could be collected and handled without hindering the ectoparasite work. Blood would be examined by the U. S. Public Health Service for murine typhus, spotted fever and, sera permitting, plague and *Leptospira*. With the cooperation of Col. I. H. Simmons of Fort Dix and Dr. John Rehn of the U. S. First Army, the eye muscle would be used for *Trichina* studies, and the feces for tapeworm studies. Results of the study of this material will be available at a later date.

JAPANESE BEETLE QUARANTINE ENFORCEMENT
NURSERY STOCK SHIPPED UNDER CERTIFICATION

| | Outside Area | Inside Area | Totals |
|---|---|---|---|
| 1951 | | | |
| July | 402,044 | 114,118 | 516,162 |
| August | 84,141 | 9,750 | 93,891 |
| September | 119,665 | 24,297 | 143,962 |
| October | 483,620 | 102,125 | 585,745 |
| November | 270,558 | 214,640 | 485,198 |
| December | 344,504 | 209,148 | 553,652 |
| 1952 | | | |
| January | 225,509 | 27,368 | 252,877 |
| February | 715,090 | 59,064 | 774,154 |
| March | 271,028 | 77,745 | 348,773 |
| April | 436,852 | 166,350 | 603,202 |
| May | 434,082 | 103,411 | 537,493 |
| June | 353,808 | 61,128 | 414,936 |
| Totals | 4,140,901 | 1,169,144 | 5,310,045 |

Valued by shippers at $2,447,608.

Method used for certification and number of plants certified.*

*A portion of the above listed plants was certified for future shipment and in anticipation of fall or the following spring orders.

(a) Number plants treated "after digging" with methyl bromide, ethylene dichloride, ethy. dichloride-dibromide, ethy. dib.-chlordane 706,861

(b) Number plants treated in the field "before digging" with DDT, chlordane, lead arsenate and ethy. dib.-chlordane 2,922,041

(c) Plants manually and visually inspected 1,106,885

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## SUMMARY OF PLANT TREATMENTS

### Plants Before Digging

| Insecticide or Fumigant Agent | Plants | Square Feet |
|---|---|---|
| DDT (includes initial treatment, retreatment, and areas previously treated that did not require additional DDT) | 2,922,015 | 7,359,923 |
| Ethylene dibromide chlordane | 26 | ..... |
| Totals | 2,922,041 | 7,359,923 |

### Plants After Digging

| | |
|---|---|
| Ethylene dichloride | 59,491 |
| Ethylene dichloride-dibromide | 304,376 |
| Ethylene dibromide-chlordane | 105,452 |
| Methyl bromide | 237,542 |
| Total | 706,861 |

## SURFACE SOIL TREATED IN GREENHOUSES, FRAMES, SHEDS, HEELING-IN-AREAS

| | Square Feet |
|---|---|
| DDT (includes initial treatment, retreatment, and areas previously treated that did not require additional DDT) | 1,657,346 |
| Lead arsenate (includes initial treatment, retreatment and areas previously treated that did not require additional lead arsenate) | 89,817 |
| Total | 1,747,163 |

## POTTING SOIL TREATED

| Agent | Cubic Yards |
|---|---|
| Carbon disulphide | 345.22 |
| Chloropicrin | 33.13 |
| Chlordane | 165.53 |
| DDT | 160.14 |
| Heat | 341.53 |
| Total | 1,045.55 |

## PERSONAL CALLS MADE

| | |
|---|---|
| Plant material and soil | 3,968 |
| Farm produce | 109 |
| Total | 4,077 |

## MEN EMPLOYED

| | Farm Produce | | Nursery & Greenhouse | | Totals | |
|---|---|---|---|---|---|---|
| | Federal | State | Federal | State | Federal | State |
| 1951 | | | | | | |
| July | 5 | 7 | 1 | 1 | 6 | 8 |
| August | 5 | 7 | 1 | 1 | 6 | 8 |
| September | ..... | ..... | 6 | 3 | 6 | 3 |
| October | ..... | ..... | 6 | 3 | 6 | 3 |
| November | ..... | ..... | 6 | 3 | 6 | 3 |
| December | ..... | ..... | 6 | 3 | 6 | 3 |
| 1952 | | | | | | |
| January | ..... | ..... | 6 | 3 | 6 | 3 |
| February | ..... | ..... | 6 | 3 | 6 | 3 |
| March | ..... | ..... | 6 | 3 | 6 | 3 |
| April | ..... | ..... | 6 | 3 | 6 | 3 |
| May | ..... | ..... | 6 | 3 | 6 | 3 |
| June | ..... | ..... | 6 | 3 | 6 | 3 |

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AUTOMOBILES OPERATED EACH MONTH DURING THE YEAR

| | Federal | State |
|---|---|---|
| 1951 | | |
| July | ..... | 14 |
| August | ..... | 14 |
| September | ..... | 9 |
| October | ..... | 9 |
| November | ..... | 9 |
| December | ..... | 9 |
| 1952 | | |
| January | ..... | 9 |
| February | ..... | 9 |
| March | ..... | 9 |
| April | ..... | 9 |
| May | ..... | 9 |
| June | ..... | 9 |

PLANTS CERTIFIED, SURFACE AREAS AND BULK SOIL TREATED

(a) Nursery stock shipped under certification.

| 1950-51 | 1951-52 |
|---|---|
| 5,966,149 | 5,310,045 |

(b) Plants treated "after digging" with methyl bromide, ethylene dichloride, ethylene dichloride-dibromide, ethylene dibromide chlordane.

| 1950-51 | 1951-52 |
|---|---|
| 912,677 | 706,861 |

(c) Plants treated in the field "before digging" with DDT, chlordane, lead arsenate and ethylene dibromide-chlordane.

| 1950-51 | 1951-52 |
|---|---|
| 2,941,259 | 2,922,041 |

(d) Plants manually and visually inspected.

| 1950-51 | 1951-52 |
|---|---|
| 2,430,424 | 1,106,885 |

(e) Square feet of surface soil treated with:

| | 1950-51 | 1951-52 |
|---|---|---|
| DDT | 349,272 | 1,657,346 |
| Lead arsenate | 136,674 | 89,817 |
| Carbon disulphide | 5,723 | ..... |
| Totals | 491,669 | 1,747,163 |

(f) Potting soil treated.

| 1950-51 | 1951-52 |
|---|---|
| 894.00 | 1,045.55 |

## *Farm Produce*

New quarantine regulations, effective this year, require the certification of carlot and truck load shipments of fresh corn on the cob, cabbage, fresh beans in the pod, apples, and peaches, moving interstate from New Jersey to points outside the Japanese beetle quarantine area. Shipments of other fruits and vegetables, including potatoes, are not restricted, providing the front vents on the trucks carrying the same are protected with one-fourth inch (or smaller) mesh screens; and refrigerator cars are bunker dusted with DDT.

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Regulatory requirements on farm produce shipped out of New Jersey became effective June 26, 1951, and the restrictions were lifted on all fruits and vegetables, with the exception of green corn, on August 29, 1951. Restrictions on green corn were revoked on September 30, 1951.

Posters explaining the new regulations on farm produce were distributed to all known interested fruit and vegetable shippers. In addition, the posters were placed in conspicuous spots at several diners, restaurants, truck centers and gasoline stations. Also, while performing road patrol work, the inspectors, both verbally and by poster, acquainted the drivers of 1,956 trucks along the highways with the new regulatory requirements. Four temporary State employees were assigned to road patrol work, assisted by two Federal and one permanent State employee. They operated on Route No. 130, from Holland Tunnel to Pennsville Ferry; and occasionally on Route No. 29 from Somerville to Newark. During the season, 805 trucks were observed with front vents screened.

A total of 115 railroad refrigerator cars was bunker dusted with DDT; 93 at Meadows Yard in Kearny, 5 at Marlboro, and 18 at Camden. Forty-six of these cars were used in the shipment of potatoes; 6 at Cranbury, 8 at Freehold, and 32 at Hightstown; and 12 cars were used to ship apples and onions at Bridgeton.

As a record of a new outlet, it is worthy of note that nine truck loads of farm produce consisting of 4,066 crates of green corn, 1,112 bags of cabbage and 100 bushels of peppers, valued at $9,950 were shipped to Montreal, Canada, from New Jersey.

Comparison of the 1951-52 fiscal year figures with those of the previous year indicates a slight decline in the number of plants shipped and certified for shipment. On the surface it would appear that there has been a slowdown in this particular type of business. However, a check of the number of square feet of surface soil treated will show an increase of over 300 per cent as compared with the previous year. Nurserymen and growers are running short of stock and are planting new ground in order to complete back orders and prepare for anticipated future business. The current building boom has created such a great demand for landscape material that the nurserymen have been unable to supply it. Many of the growers have been selling and shipping material smaller than landscape size because of depleted stocks. This has created a shortage of desirable plant material which will be felt for the next two or three years and until the new nursery plantings have attained proper growth.

The use of DDT as an insecticide for the treatment of plants before digging as well as for surface treatment still appears to be the most desirable

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procedure. When chlordane was first introduced it was thought that it had some advantages over the use of DDT. However, the fact that additional retreatments must be made each year has created quite a hardship on the nurserymen, particularly because of the labor problem. The loss of chlordane in the soil each year through leaching, etc., has made this operation necessary.

In the case of DDT it has been found, through soil analysis, that the dosage remains satisfactory for the second and sometimes the third year, depending upon the type of soil, erosion, etc. This, of course, saves the grower many man hours during the course of the year, since annual retreatments are not then required. There are a number of growers who use DDT as a soil treatment for grubs and insects other than the Japanese beetle, and not necessarily for certification for quarantine purposes. The Division has tried to encourage such growers to make these treatments under supervision and on record, so that certification may be obtained, if they so desire, at some future date. Such certification would be impossible if the proper dosage were not applied and the insecticide thoroughly worked into the soil as required in the quarantine regulations.

For the past two or three years, the use of lead arsenate as a means of certification of plant material in the field has been practically non-existent. Division records show that some areas are still in a certified status through the use of this material. However, the treatments were made some years ago as a means of certification for soil in greenhouses, plotting sheds, etc. In these cases, the soil is undisturbed and the fact that it is under cover will tend to prevent the loss of insecticide for a number of years to come.

It is interesting to note that during the fiscal year 1950-51 there were certified for shipment 5,966,149 plants, valued at $1,625,816, compared with 5,310,045 plants, valued at $2,447,608, for the year ending June 30, 1952.

## BEE CULTURE

In the spring of 1949 an extensive program of scouting was initiated in the State, to locate colonies of bees which might be acting as reservoirs of disease. The commercial beekeepers and the more progressive beekeepers had received the benefits of the inspection service for many years, but until 1949, no attempt had been made to locate all colonies over large areas. The bee diseases, American foul brood particularly, could be considered reasonably well controlled in the bee yards of which this Department had knowledge, but it had not been possible to show appreciable reduction in disease incidence for at least ten years prior to 1949. Thus, the survey was begun with the objective of searching out and controlling any reservoirs of disease

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## FARM PRODUCE CERTIFIED FOR SHIPMENT FROM NEW JERSEY TO POINTS OUTSIDE THE JAPANESE BEETLE QUARANTINE AREA
According to Locality and Commodity

1951 Season (from June 26 to August 29 inclusive, except the restrictions on green corn will not be lifted until September 30).

| Origin of Shipment | Visual-Manual Inspection and/or Approved Grading and Packing Procedure | | Fumigation with Methyl Bromide | Certified by Field or on Premise Inspection | Commodity (number bushels or crates) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trucks | RR Cars | Trucks | Trucks | Apples | Lima Beans | Cabbage | Corn | Peaches | Green Peppers | String Beans | Scallions | Totals |
| Bridgeton | 79 | 3 | 5 | ----- | 8,418 | 1,086 | ----- | ----- | 32,213 | ----- | ----- | ----- | 41,717 |
| Bridgeton (June) | ----- | ----- | ----- | 2 | ----- | ----- | ----- | ----- | ----- | ----- | 1,377 | ----- | 1,377 |
| Burlington | 1 | ----- | 13 | ----- | 450 | ----- | 1,112 | 6,398 | ----- | 100 | ----- | 30 | 8,090 |
| Glassboro | 7 | ----- | 1 | ----- | ----- | ----- | ----- | ----- | 3,874 | ----- | ----- | ----- | 3,874 |
| Riverton | 3 | ----- | ----- | ----- | 900 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 900 |
| Totals | 90 | 3 | 19 | 2 | 9,768 | 1,086 | 1,112 | 6,398 | 36,087 | 100 | 1,377 | 30 | 55,958 |

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which might be responsible for maintaining the incidence of disease at its stable rate.

By the end of the fiscal year 1951-52, all but six counties of the State had been covered in the survey. It is anticipated that this work will be completed by June 1953 and a complete report of the findings will be published in the annual report for the next fiscal year. It will suffice to report at this time, that many previously unreported holdings have been located and that American foul brood has been commonly found in those and in other apparently abandoned hives.

In addition to the survey work, the regular inspection service of this project has been continued. Inspections are reported in all counties except Hudson and Salem. During the fiscal year, 542 apiaries and 4,612 colonies were inspected. A total of 750 nuclei was also inspected. Inspection and certification of bee colonies and materials offered for sale within the State were provided and microscopic examination of dead bees and comb, usually sent through the mails, was accomplished. Twelve queen-rearing certificates and seventeen transfer certificates were issued.

*Observations*

The number of bee colonies within tomato growing areas is decreasing rapidly. The loss of bees, due to heavy usage of insecticides by the tomato growers, is apparently responsible for this change. Unfortunately, the dusting and spraying of this crop are commonly done in such manner that numerous pollen and nectar plants in adjacent or nearby fields are seasonally covered with poisons that are toxic to honeybees. Under these conditions, the beekeepers are becoming more selective in the location of outyards during the summer months.

Adequate ventilation of beehives during the winter months is still not practiced by many beekeepers. The need for this ventilation cannot be overstressed. Many colonies suffered winter loss unnecessarily because of failure on the part of the beekeeper to understand this particular factor. The inexperienced beekeeper often confuses this kind of loss with loss due to the contagious diseases.

Many inexperienced beekeepers remove all honey from the hives and extract the entire crop during the month of August. This practice is discouraged because the various nectar and pollen-producing plants of the fall months are not always highly productive. Inclement weather often interferes with nectar secretion and when this occurs, starvation follows during the winter months in colonies from which the early honey has been removed.

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## SUMMARY OF BEE PROJECT

| County | Apiaries | Colonies | Nuclei | Crossed Comb | Apiaries A.f.b | Colonies A.f.b. | Apiaries E.f.b. | Colonies E.f.b. | Colonies Burned | Microscopic Determinations A.f.b. | Microscopic Determinations E.f.b. | Negative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlantic | 8 | 33 | ..... | ..... | 3 | 5 | 1 | 2 | ..... | ..... | ..... | ..... |
| Bergen | 181 | 819 | ..... | 1 | 21 | 47 | ..... | ..... | ..... | 6 | ..... | 1 |
| Burlington | 52 | 555 | ..... | 17 | 15 | 37 | 8 | 61 | ..... | 25 | 17 | 8 |
| Camden | 17 | 126 | ..... | ..... | 5 | 27 | 2 | 4 | ..... | 5 | 4 | 1 |
| Cape May | 1 | 103 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 | 1 | ..... |
| Cumberland | 7 | 174 | ..... | ..... | 4 | 7 | 1 | 3 | 1 | 3 | 2 | 3 |
| Essex | 1 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gloucester | 2 | 41 | ..... | ..... | 1 | 3 | ..... | ..... | 3 | ..... | ..... | ..... |
| Hunterdon | 44 | 813 | 699 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Mercer | 22 | 310 | 26 | ..... | 3 | 3 | ..... | ..... | 2 | ..... | ..... | ..... |
| Middlesex | 32 | 240 | ..... | 2 | 13 | 53 | ..... | ..... | ..... | 2 | ..... | 1 |
| Monmouth | 22 | 130 | ..... | ..... | 4 | 6 | 1 | 1 | ..... | 4 | ..... | 1 |
| Morris | 23 | 174 | ..... | ..... | 8 | 18 | ..... | ..... | ..... | 3 | ..... | ..... |
| Ocean | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Passaic | 25 | 107 | 25 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Somerset | 36 | 409 | ..... | 4 | 7 | 16 | ..... | ..... | 1 | 1 | ..... | ..... |
| Sussex | 10 | 105 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Union | 14 | 109 | ..... | ..... | 6 | 12 | ..... | ..... | ..... | 2 | ..... | ..... |
| Warren | 44 | 359 | ..... | 13 | 8 | 21 | ..... | ..... | ..... | 3 | ..... | 1 |
| Totals | 542 | 4,612 | 750 | 39 | 98 | 255 | 13 | 71 | 7 | 59 | 24 | 18 |

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Winter loss of approximately 5 per cent was sustained during the 1951-52 winter. The loss was generally traceable to insufficient food and insufficient numbers of bees in the clusters by the end of November.

European foul brood continues to be a seasonal problem in low-lying areas of southern New Jersey. The disease has been controlled by moving infected colonies to new areas with good potentiality for pollen and a fall nectar flow. There is good evidence that European foul brood is closely tied in with a nutritional factor.

Immovable combs are still found in a few colonies. Cooperation of the owners in correcting this condition has been excellent.

One colony in Bergen County was found infected with *Nosema*. Introduction of a new queen is the accepted control measure.

It was necessary to destroy seven colonies of bees in four counties of the State because of failure of owners to comply with clean-up requirements of the law as it pertains to American foul brood infection.

## GYPSY MOTH

The trapping and scouting program for evidence of gypsy moth infestation was continued during the year. Early in July, 850 traps were made available by the Federal project for use in this State. Two temporary employees were added to the three-man permanent crew and the traps were placed in the field and operated at the locations listed below.

SUMMER OF 1951

ATLANTIC COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Absecon | 1 |
| Buena Borough | 1 |
| Buena Vista | 5 |
| Egg Harbor City | 1 |
| Egg Harbor | 8 |
| Estell Manor | 4 |
| Folsom | 2 |
| Galloway | 13 |
| Hamilton | 14 |
| Hammonton | 6 |
| Linwood | 1 |
| Mullica | 9 |
| Northfield | 2 |
| Pleasantville | 2 |
| Port Republic | 3 |
| Somers Point | 1 |
| Weymouth | 2 |
| | 75 |

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BERGEN COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Alpine | 31 |
| Bergenfield | 2 |
| Closter | 10 |
| Cresskill | 6 |
| Demarest | 7 |
| Dumont | 2 |
| Emerson | 7 |
| Englewood | 11 |
| Englewood Cliffs | 10 |
| Fort Lee | 5 |
| Harrington Park | 6 |
| Haworth | 8 |
| Interstate Park | 11 |
| Leonia | 1 |
| Montvale | 3 |
| Northvale | 5 |
| Norwood | 9 |
| Old Tappan | 11 |
| Rivervale | 8 |
| Rockleigh | 9 |
| Teaneck | 2 |
| Tenafly | 11 |
| | 175 |

CAMDEN COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Audubon | 2 |
| Berlin | 3 |
| Brooklawn | 1 |
| Camden | 1 |
| Clementon | 1 |
| Delaware | 13 |
| Gibbsboro | 3 |
| Gloucester | 10 |
| Haddon | 1 |
| Hinella | 1 |
| Lawnside | 1 |
| Pennsauken | 2 |
| Somerdale | 2 |
| Tavistock | 1 |
| Voorhees | 5 |
| Waterford | 1 |
| Winslow | 23 |
| Pine Hill | 4 |
| | 75 |

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HUNTERDON COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Bethlehem | 6 |
| Clinton | 6 |
| Delaware | 10 |
| East Amwell | 4 |
| Holland | 10 |
| Kingwood | 8 |
| Lebanon | 8 |
| Raritan | 4 |
| Readington | 8 |
| Tewksbury | 6 |
| Union | 2 |
| West Amwell | 6 |
| | 78 |

MERCER COUNTY

| Township or Borough | Number of Traps |
|---|---|
| East Windsor | 20 |
| Ewing—including City of Trenton | 20 |
| Hamilton | 22 |
| Hopewell | 30 |
| Princeton | 20 |
| Washington | 18 |
| West Windsor | 20 |
| | 150 |

MONMOUTH COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Freehold | 2 |
| Howell | 9 |
| Middletown | 7 |
| Neptune | 6 |
| Wall | 1 |
| | 25 |

MORRIS COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Boonton | 6 |
| Chatham | 2 |
| Chester | 6 |
| Denville | 2 |
| Hanover | 2 |
| Harding | 2 |
| Jefferson | 20 |
| Kinnelon | 5 |
| Montville | 4 |
| Morris | 3 |
| Mount Olive | 8 |
| Parsippany-Troy Hills | 2 |
| Pequannock | 4 |
| Randolph | 8 |
| Rockaway | 10 |
| Roxbury | 16 |
| Washington | 2 |
| | 102 |

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SUSSEX COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Andover | 6 |
| Byram | 4 |
| Frankford | 6 |
| Green | 2 |
| Hampton | 6 |
| Hardyston | 2 |
| Hopatcong | 8 |
| Montague | 18 |
| Sandyston | 8 |
| Sparta | 12 |
| Stillwater | 6 |
| Wallpack | 10 |
| Wantage | 4 |
| Vernon | 6 |
| | 98 |

WARREN COUNTY

| Township or Borough | Number of Traps |
|---|---|
| Allamuchy | 6 |
| Blairstown | 4 |
| Franklin | 3 |
| Frelinghuysen | 2 |
| Greenwich | 4 |
| Hardwick | 4 |
| Harmony | 6 |
| Hope | 4 |
| Independence | 3 |
| Knowlton | 6 |
| Lopatcong | 2 |
| Mansfield | 4 |
| Pahaquarry | 12 |
| Pohatcong | 2 |
| Washington | 6 |
| White | 4 |
| | 72 |

Total Traps in State 850

The traps were serviced at seven to ten-day intervals until early September, at which time the season of flight of the male moth was considered ended. No gypsy moth was found throughout the trapping work.

Scouting was begun in October by the three-man permanent crew. Inspections were planned and accomplished in areas considered favorable for moth infestation. The scouting was conducted from October 1951 to June 1952.

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GYPSY MOTH SCOUTING IN NEW JERSEY
(October 1951 to June 1952 inclusive)

| County and Township | Miles Woodland | Miles Open | Acres Woodland | Acres Open | Roadside Miles |
|---|---|---|---|---|---|
| Bergen County | | | | | |
| Alpine | ..... | ..... | 1,077 | ..... | ..... |
| Englewood Cliffs | ..... | ..... | 590 | ..... | ..... |
| Cresskill | ..... | ..... | 215 | 895 | ..... |
| Totals | ..... | ..... | 1,882 | 895 | ..... |
| Essex County | | | | | |
| Upper Montclair | ..... | 5 | 20 | ..... | ..... |
| Totals | ..... | 5 | 20 | ..... | ..... |
| Hunterdon County | | | | | |
| Raritan | ..... | ..... | 291 | ..... | 8 |
| Totals | ..... | ..... | 291 | ..... | 8 |
| Morris County | | | | | |
| Mendham | ..... | 6 | 227 | ..... | 1 |
| Randolph | ..... | 8 | 595 | ..... | 3 |
| Totals | ..... | 14 | 822 | ..... | 4 |
| Passaic County | | | | | |
| Ringwood | 3 | 5 | 60 | ..... | ..... |
| West Milford | ..... | 2 | 115 | 40 | ..... |
| Totals | 3 | 7 | 175 | 40 | ..... |
| Somerset County | | | | | |
| Hillsborough | 2 | 3 | 241 | 190 | ..... |
| Montgomery | ..... | 6 | 285 | ..... | ..... |
| Totals | 2 | 9 | 526 | 190 | ..... |
| STATE TOTALS | 5 | 35 | 3,716 | 1,125 | 12 |

During the early part of June, it was possible to scout 87 acres of woodland in Alpine Township in Bergen County and 2.5 miles of roadside in the same township. Also, 4.5 miles of roadside were scouted in the Interstate Park in Bergen County. No infestation was found. No gypsy moth egg mass was found in the course of the year's work.

The gypsy moth program in New Jersey is part of a coordinated Federal-state program in operation in the New England states and New York, New Jersey and Pennsylvania. In Pennsylvania, the moth had been considered eradicated, but in the fall of 1951 an infestation was located near Avoca. The area was sprayed in late spring of 1952 and it is believed that the infestation has been eradicated. New York State is having some success in pushing the western boundary of infestation eastward and in eliminating colonies which were established west of the general infestation by the 1938 hurricane. Natural spread of this insect in a western and northern direction would occur only through freak weather conditions which would reverse the common prevailing wind directions.

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This Division has participated in conferences for coordination of this project. Conferences for this purpose have been called by the Federal Bureau of Entomology and Plant Quarantine and by a committee of the Council of State Governments. Presently a program of eradication of this pest is under consideration by the states and the Federal government. It is roughly estimated that $25,000,000 would be needed to finance such a project and to carry it to completion within 5 to 15 years. It is hoped that proper funds might be made available for an eradication project and that this insect which has blighted the forests of the Northeast for 75 years, might finally be eliminated.

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# BUREAU OF PLANT PATHOLOGY

## CANKER STAIN DISEASE CONTROL

(Calendar year, 1951)

Field surveys for the control of canker stain disease of London plane trees were resumed in July 1946 after a three-year interruption because of World War II. During the intervening time the administration of the details of this project has met with considerable difficulty. The education of municipal officials regarding the danger of the spread by pruning tools, etc., from a diseased to a healthy tree has been a perennial problem. The change of personnel has required a frequent return to a municipality to initiate a program of re-education. In retrospect, however, key individuals in most of the political units which are in the area for scouting have become apprised of the objectives of this control work and there is a general feeling of cooperation.

During the calendar year of 1951 two field men spent a total of 10 months in survey work for this disease. Approximately 123,000 plane trees situated in 91 political units of 10 counties were inspected. A total of 440 new cases of canker stain disease was detected and marked for either eradication or pruning.

One township in Camden County continues as a location of heavy concentration of this disease. During 1951, 114 new cases were detected. As stated in the previous annual report, municipalities apathetic to the recommended control procedure of this Department have been notified that unless they display a constructive and active interest in the recommendations for tree removal, the scouting will be discontinued. All the political units so advised promptly replied that they would immediately initiate plans for the removal of the marked trees. Toward the close of 1951 two of the municipalities in the more heavily infested areas of the State were soliciting bids from commercial arborists for the removal of the trees. Apparently the policy of this Department, that scouting is futile unless eradication steps are adopted, has stimulated many officials into adopting a tree removal program.

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PROGRESSIVE REPORT—CANKER STAIN DISEASE CONTROL

| Counties | Trees Scouted | Tagged Trees to January 1, 1951 Total | Total Removed | Standing | Trees Tagged in 1951 | Total Tagged Trees Standing Jan. 1, 1952 |
|---|---|---|---|---|---|---|
| Atlantic | 4,500 | ..... | ..... | ..... | ..... | ..... |
| Bergen | 5,000 | ..... | ..... | ..... | ..... | ..... |
| Burlington | 17,500 | 104 | 95 | 9 | 9 | 18 |
| Camden | 45,300 | 1,835 | 1,794 | 41 | 410 | 451 |
| Cape May | 9,400 | ..... | ..... | ..... | ..... | ..... |
| Cumberland | 3,250 | ..... | ..... | ..... | ..... | ..... |
| Essex | 23,000 | ..... | ..... | ..... | ..... | ..... |
| Gloucester | 6,350 | 18 | 18 | ..... | 8 | 8 |
| Salem | 6,700 | 41 | 37 | 4 | 13 | 17 |
| Union | 2,000 | ..... | ..... | ..... | ..... | ..... |
| Totals | 123,100 | 1,998 | 1,944 | 54 | 440 | 494 |

## DUTCH ELM DISEASE CONTROL

(Calendar year, 1951)

### *Experimental*

In 1949 the Federal Bureau of Entomology and Plant Quarantine initiated a Dutch elm disease control experimental spray project involving the geographical area of the borough of Princeton, Princeton University campus, and a band one-half mile wide around these two areas. The elm trees in the borough, with few exceptions, and the elm trees on Princeton University campus were sprayed with DDT once in 1949, twice in 1950 and once in 1951. The first spray of the year was a prefoliar one of three pounds of DDT per average-size tree (approximately 50 feet). The second spray was applied from mid-June to mid-July at the rate of one pound DDT per average-size tree. Experimental work conducted heretofore has indicated that these heavier dosages are required for satisfactory bark beetle control. The control of the bark beetles is important because of the transmission of the Dutch elm disease fungus from infested, diseased trees to healthy ones.

This experiment was concluded July 1, 1951. Several deductions can now be made: (1) Bark beetle and defoliator control was entirely satisfactory. (2) The mite population on the elm trees increased to alarming proportions not only on the foliage but in the fissures of the bark. A white oil miticide added to the last spray in 1950 was not satisfactory. The secondary consequences of the application of DDT for bark beetle control must be critically appraised from the standpoint of the damage inflicted by the apparently unshackled mites and the spray procedure required to control them. (3) As amounts varying from 50 to 68 per cent of the volume of the

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spray material, applied hydraulically to a given elm tree, fall back to the earth beneath the tree, a question arose regarding the DDT accumulation in the soil under the trees so sprayed. Determinations of the soil in such areas made by the Federal Japanese Beetle Laboratory in Moorestown revealed that the DDT accumulation in the upper three inches of the soil ranged from 125 to 360 pounds per three-inch deep area. Although no definite proof is available regarding the harmful consequences of such amounts of DDT in the rhizosphere, many property owners are reluctant to adopt or continue the spraying of DDT at these recommended rates.

The results of the Princeton experimental work, in which this Department cooperated, did not significantly change the Dutch elm disease control recommendations of this Department. These recommendations cautiously state that bark beetle control, if believed to be desirable and necessary, must involve the use of higher dosages of DDT. However, the DDT spray (about one-third pound of DDT per average-size tree) is recommended for the protection of the leaves and the maintenance of the health of the tree. The Federal Bureau of Entomology and Plant Quarantine has prepared a comprehensive report of this experiment in Princeton. Undoubtedly, subsequent observations will be greatly stabilized by reference to the details of this report.

This Department cooperated with the Bartlett Tree Expert Company of Stamford, Connecticut, and the Federal Bureau of Entomology and Plant Quarantine in the establishment of a block of 20 roadside elm trees in Duke Park, Somerville, for the purpose of experimental trial of a Bartlett product known as "Carolate". "Carolate" is a material consisting of a high calcium, hydrated lime fortified with three therapeutic chemicals.

At the time of the selection of these trees and subsequently at the time of the application (April, 1950) of the treatments, a serious oversight was not recognized. At the time of the appearance of the cankerworms, the proximity of the experimental trees to pasture land of the Duke Farm's highly valued Jersey dairy animals, operated against the use of the defoliar spray because of the inevitable drift to the neighboring pasture. Consequently, the foliage was unprotected and the cankerworm injuries assumed serious proportions. The same condition continued in 1951, the year after the treatment was applied. Although the two other cooperators have made estimates of the benefits derived from the "Carolate" treatments on these elm trees, this Department believes that the defoliation of the experimental trees rendered them unsatisfactory subjects for critical and dependable appraisal of the benefits of the treatment. Therefore, no formal report of this experiment will be issued.

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*1951 Dutch Elm Disease Control Survey*

During the period 1934 to 1950 this Department has issued annually recommendations for Dutch elm disease control to New Jersey elm tree owners and custodians. These recommendations were modified when the research and observational information warranted such a procedure. Obviously, the benefits of such recommendations must be largely based on their degree of usefulness and effectiveness and their degree of acceptability to the individuals for whom they have been designed.

A survey of 249 municipalities was conducted in 1950 to determine, by means of a questionnaire, the acceptability and usefulness of the Dutch elm disease control recommendations of this Department.

A summary of the information acquired through this questionnaire has already been issued as a formal report. However, the information of the 1950 report has been considered inadequate because questions of detail were not included. Therefore, to acquire more precise information on this subject, a second questionnaire was prepared for use in the 1951 survey. Realizing that many of the replies from the previously interviewed 249 municipalities were of little value, the 1951 survey was limited to 35 municipalities and counties where active Dutch elm disease control work is usually conducted.

Following is a digest of the answers to the more significant questions presented in the 1951 questionnaire.

(1) *Is Dutch elm disease control work adequately financed?*

To this question 12 answered yes and 23, no. The inadequacy of financial support for the proper conduct of this work has been discussed.

(2) *Is Dutch elm disease control work adequately manned?*

To this question 11 answered yes and 24, no. Probably the principal reason for the dearth of manpower was the disparity in wage rates paid to shade tree workers in municipal employ as compared to the wages paid by industry in the adjacent area.

(3) *What is the trend of Dutch elm disease in your municipality?*

To this question 19 stated that the Dutch elm disease incidence was on the increase, 9 on the decrease and 7 reported their condition static. No reason has been given for this increase. However, it is well known that rainy, damp weather during the middle and late spring results in abundant fruiting of the Dutch elm disease fungus within the beetle galleries. As rains may be local, the adaptation of climatological data to this subject is not necessarily reliable. Further-

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more, in some of these municipalities which reported an increase in the disease in 1951, infected trees within the municipal area or adjacent thereto reported in 1950 were known to be standing and probably responsible for some of the 1951 infections.

(4) *Does municipality have its own shade tree spraying apparatus?*

Ten answered no, while 9 reported hydraulic equipment, 12 reported mist blowers and 4 reported both types of equipment. The 10 municipalities which reported no municipal shade tree spraying equipment negotiate with commercial arborists for the necessary spraying work.

(5) *Were municipal trees given a prefoliar bark beetle control spray?*

Four of the 35 interviewed municipalities stated that they had applied a prefoliar spray which, according to the recommendations of this Department, amounts to approximately three pounds DDT to an average size tree. This recommendation is not generally followed for several reasons, the principal one being the cost. The second reason and one which should not be dismissed is the undesirable consequence of DDT applications, namely the encouragement of the depredation of other elm insects and the soil accumulations of DDT under the sprayed trees which may prove detrimental to the health of the trees.

(6) *Were municipal trees sprayed for defoliators?*

Thirty-two reported yes and three, no. The municipalities which supplied the negative answers did so for the following respective reasons: (1) Elm leaf beetle is of little importance; (2) Spray apparatus was not delivered in time to conduct this work; (3) Satisfactory arrangements with the local police department for the maintenance of automobile no-parking zones during the spraying time were not successfully negotiated.

(7) *Have you observed or received reports, of damaging consequences, because of this spray to elms and/or other tree species or shrubs?*

Occasionally reports are received that the drift of DDT spray intended for elm trees has been damaging to other vegetation, particularly Japanese cut leaf maple and barberry hedges. To this question one reported yes and 31, no.

(8) *What treatment is administered to newly detected Dutch elm diseased trees?*

Twenty-two reported that the diseased trees were promptly removed, one that the recommended DDT sprays were applied to symptomatic trees, three that both these operations were employed

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and nine that no definite action had been taken with trees in this category. It is unnecessary to emphasize further the necessity of the prompt pruning or entire tree removal and burning, or spraying with DDT as recommended for symptomatic trees if the involved bark beetle population is to be restrained from moving to and infecting healthy trees nearby.

(9) *Do you consider diseased elms on private property in your municipality or immediately adjacent thereto as contributing to your Dutch elm disease problem?*

To this significant and troublesome problem 31 answered yes and 3, no. A further comment will appear in the summary.

(10) *Do you practice the sanitation recommendations, namely, removal or pruning of devitalized and storm-damaged elms?*

To this question 27 answered yes and 7, no. Again the punctuality of attention to trees in this category is vital. A delay of six or eight months in the performance of this work may nullify its benefits.

(11) *Are you experiencing difficulty in maintaining sustained interest of town officials and taxpayers, for adequate appropriations for this work?*

To this question 14 reported yes and 19, no. It is quite understandable that freeholders or city commissioners perennially confronted with the request for an appropriation for Dutch elm disease control may logically inquire as to the benefits derived from such expenditures. If Dutch elm disease-infected trees are permitted to remain on the landscape for the liberation of bark beetles, then control operations become ineffective.

(12) *Do you consider the Dutch elm disease control effort as hopeless?*

To this interesting question 3 reported yes and 28, no. It is understandable that some elm tree custodians may feel discouraged when, through vigilance, they have not succeeded in curbing the significant annual losses. It is gratifying, however, that 28 reported in the negative, which indicates that they believe that a practical program of control will pay dividends.

(13) *Are you planting elms?*

To this question 7 reported yes and 28, no. No doubt each of the 35 reporters has a specific reason for the answer which he submitted. The planting of elm trees in practically every municipal locality must be associated with the necessity of spraying for defoliators. The planting of elm trees at this time, even though Dutch elm disease

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threatens, should not constitute a major expense of tree removal to the present generation of shade tree custodians, should these trees become fatally infected.

(14) *Do you favor efforts to establish legislation by municipal ordinance to permit you to apply DDT to Dutch elm disease symptomatic trees and bark beetle-infested material on private property?*

To this important question 22 reported yes and 12, no. The reason for the affirmative answers is understandable. As for the negative answers, local political and economic conditions may not encourage the Dutch elm disease control activities on private property.

(15) *Assuming that you were authorized to spray trees on private property, would your workers be covered by the presently operative insurance policy?*

To this question 15 reported yes and 11, no. Undoubtedly, insurance coverages for municipal workers working on private property for the general welfare of the municipality as well as privately owned trees, could be negotiated without much difficulty.

(16) *Assuming that you were authorized and had plans for the spraying of diseased elm trees on private property, would the certification of the urgency of the spraying of such trees by a representative of the New Jersey Department of Agriculture help you in curbing the application for the spraying of trees on private property not in the disease category?*

To this question 30 reported yes and 3, no. Information gathered from the 1950 questionnaire indicated the unwillingness of many municipal shade tree men to accept the burden of tree work on private property because of possible political abuses. The certification by the New Jersey Department of Agriculture of the urgency of tree removal or spraying of trees infected with Dutch elm disease would be a curb on the exploitation of this concession by unscrupulous property owners. The fact that 30 of the 35 people questioned reported affirmatively, indicates the potential probability of the appearance of such abuses if private property tree work were to be included in the municipal program.

## *Summary*

A review of the accomplishments of 16 years of Dutch elm disease control effort by the State Department of Agriculture reveals several important aspects. However, in any consideration of this subject, full cognizance must be given to the financial and manpower complications of many of the shade

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tree officials who are attempting to adopt and execute a practical Dutch elm disease control program.

Elm trees are essentially shade and ornamental trees, particularly from the standpoint of this discussion. The application of defoliar sprays must be accepted as a necessity in most New Jersey localities. The application of a specific bark beetle prefoliar spray at a dosage which is high and yet apparently unavoidable if control results are to be realized, has not been generally adopted for reasons presented previously.

Assuming that many municipalities will be limited to defoliator spray, this Department strongly recommends the additional spraying of the trees in categories below with a concentration of DDT approximating three pounds per average-size tree:

(1) *Dead elm trees with tight bark.* Spray immediately before April 15 and 60 days later if tree is still standing.

(2) *Dutch elm disease symptomatic trees of 1951.* Spray immediately before April 15 and 60 days later if tree is still standing.

(3) *Dutch elm disease symptomatic trees of 1952.* Spray immediately upon the appearance of wilting and yellow symptoms.

The trees in the first two classes should be sprayed first, even though somewhat inconvenient, to trap emerging bark beetles. This recommendation is based on the probability of delay during the spray program.

Even though a shade tree official diligently follows these recommendations, he cannot provide similar treatment for such trees on private property. Undoubtedly, the owners of such trees have been advised of the desirability and urgency of applying bark beetle control operation to such trees. However, the fact that many such trees are still standing is evidence of the total apathy for, or financial inability to comply with, this recommendation.

Ample and convincing research data support the premise that fungus-carrying bark beetles emerging from a tree do not initiate significant new infections beyond an 800-foot radius of such a beetle tree. Therefore, the destruction, or rendering harmless, of infected and infested trees within or immediately adjacent to municipal boundaries is important in controlling the Dutch elm disease in each community. This Department is aware of the existence of difficulties in any attempt to organize an effective program for municipal action on private property. Quite probably each municipality, with the advice of its counsel, could devise a plan whereby municipal employees could proceed on a private property with the DDT spraying of certified Dutch elm disease-infected trees. This would extinguish a source

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of infection which may result in magnified costs to the community by the involvement of nearby municipal trees, if permitted to continue.

Interest in Dutch elm disease control throughout the northern half of the State resulted in this office receiving 267 requests for tree examination. The arborists, as well as the shade tree officials of the State, are gradually advancing their interest in Dutch elm disease control, realizing the consequences which may result if diseased, infested trees are permitted to stand for the duration of bark beetle emergence.

## TOMATO SEED CERTIFICATION

The field inspections of tomatoes for the 1951 seed certification program were carried out during August. Four of the Department representatives made these inspections.

Similar work for 1950 resulted in the certification of 4,744 acres. The acreage approved in 1951 represents a reduction of approximately 1,300 acres. This is largely due to the decision of the California Packing Corporation to discontinue the seed business.

Because of unexpected delays in the receipt of southern-grown tomato plants during the spring of 1951, the field inspection for seed certification did not reach its full impetus until the week of August 6. The growth progress of the various fields to be submitted for inspection was then so rapid that the services of the inspectors were in constant demand. Fortunately, few days of rainfall interrupted this work.

The most conspicuous disease encountered during the early part of the inspection season was a double virus streak, which was present in many fields but in low percentage. Heretofore, plants so affected were usually confined to several fields and barely noticeable in the others. However, by the middle of August many of the affected plants had shed the dried leaves and the plants resumed a more normal appearance, even though streaking persisted on the stems. During the middle of August, the fields were practically fog-bound for four consecutive mornings and during this time Septoria leaf spot afflicted many of the fields in varying degrees. Immediately thereafter, the intense rays of the sun caused sunburning of many of the fruits or interfered with the proper red coloration. Fortunately, the latter part of August was cool and cloudy, permitting the ripening of most of the fruits to qualify for No. 1 at the grading platform.

Fusarium wilt was less prominent than in 1950. Late blight was present in most of the fields, but little fruit damage resulted throughout the season.

From the insect standpoint, many of the fields escaped with little damage. This Department had no information that any sprays were applied for aphid

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## TOMATO SEED CERTIFICATION 1921-51

### Varietal Distribution, Certified Tomato Seed Acreages

| | Bonny Best | J.T.D. | Balti-more | Mar-globe | Val-iant | Break O'Day | Stokes-dale | Rutgers | Prit-chard | Glovel | Garden State | Improved Garden State | Camp-bell (#178) | On-tario | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1921 | 84 | | 44 | | | | | | | | | | | | 132 |
| 1922 | 87 | | 112 | | | | | | | | | | | | 199 |
| 1923 | 103 | | 113 | | | | | | | | | | | | 216 |
| 1924 | 117 | | 210 | | | | | | | | | | | | 327 |
| 1925 | 344 | | 238 | | | | | | | | | | | | 582 |
| 1926 | 274 | | 171 | | | | | | | | | | | | 445 |
| 1927 | 207 | 110 | 121 | 431 | | | | | | | | | | | 869 |
| 1928 | 208 | 55 | 150 | 329 | | | | | | | | | | | 742 |
| 1929 | 133 | 123 | 87 | 360 | | | | | | | | | | | 703 |
| 1930 | 363 | 162 | 250 | 620 | | 18 | | | | | | | | | 1,413 |
| 1931 | 219 | 292 | 106 | 689 | | 127 | | | | | | | | | 1,433 |
| 1932 | 34 | 61 | 18 | 562 | | | | | | | | | | | 675 |
| 1933 | 12 | | 15 | 543 | | | | | 99 | | | | | | 669 |
| 1934 | 28 | 155 | 91 | 2,046 | | 2 | | | 182 | | | | | | 2,504 |
| 1935 | 5 | 247 | 61 | 1,520 | | 8 | | 730 | 192 | | | | | | 2,763 |
| 1936 | 5 | 109 | 40 | 1,576 | 1 | 21 | | 1,001 | 208 | | | | | | 2,960 |
| 1937 | 94 | 100 | | 1,365 | 17 | | 67 | 936 | 136 | 7 | | | | | 2,746 |
| 1938 | 10 | 48 | | 1,113 | 2 | 5 | 2 | 755 | 146 | | | | | | 2,081 |
| 1939 | 18 | | | 1,658 | | 3 | | 1,331 | 84 | | | | | | 3,094 |
| 1940 | 13 | | | 1,182 | 1 | 5 | 493 | 1,847 | 39 | | | | | | 3,580 |
| 1941 | 33 | | | 1,246 | 33 | | 380 | 2,547 | 48 | | | | | | 4,287 |
| 1942 | 10 | | | 1,006 | 1 | | 363 | 3,355 | 116 | | | | | | 4,851 |
| 1943 | 35 | | | 1,143 | 1 | | 188 | 3,865 | 155 | | 116 | | 1 | | 5,504 |
| 1944 | | | 75 | 1,163 | | | 164 | 5,095 | 105 | | 155 | | 13 | | 6,770 |
| 1945 | | | | 647 | | | 375 | 3,294 | 84 | | 199 | | 47 | | 4,646 |
| 1946 | | | 25 | 923 | 121 | | 718 | 4,595 | 131 | | 150 | | | | 6,663 |
| 1947 | | | 28 | 899 | | | 67 | 6,279 | 155 | | 746 | | | 24 | 8,198 |
| 1948 | | | 25 | 481 | 25 | | 36 | 4,041 | 6 | | 316 | | | 16 | 4,946 |
| 1949 | | | 24 | 306 | 88 | | 73 | 4,445 | 81 | | | | | | 5,017 |
| 1950 | | | 15 | 607 | 80 | | 75 | 3,860 | 12 | | 68 | 27 | | | 4,744 |
| 1951 | | | 3 | 190 | 10 | | 30 | 3,058 | 10 | | | 173 | | 2 | 3,476 |

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control. These were extremely scarce. Colorado potato beetle, adults and larvae, did considerable damage in some fields. The first generation of tomato horn-worms was light but the prospect of a more serious infestation during the second generation appeared likely.

Most of the fields were again sprayed with a fungicidal spray. The stems of the plants were unusually clean of *Alternaria cankers*. This condition may account for the excellent vigor of the plants in fields with a heavy crop load, even though considerable foliage was lost during the foggy weather. Fields with much of the foliage lost were ripening the remaining fruits in a satisfactory condition.

TOMATO ACREAGE CERTIFIED, 1951

Improved

| Seedsman | Rutgers | Marglobe | Pritchard | Garden State | Stokesdale | Valiant | Ontario | Baltimore | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cal. Packing Corp. | 38 | | 1 | | | | | 3 | 42 |
| Campbell Soup Co. | 1,083 | | | 173 | | | 2 | | 1,258 |
| H. J. Heinz Co. | 78 | | | | | | | | 78 |
| Ritter Seed Co. | 1,483 | 190 | | | 30 | | | | 1,703 |
| Francis Stokes Co. | 142 | | | | | | | | 142 |
| Swedesboro Seed Co. | 234 | | 9 | | | 10 | | | 253 |
| Totals | 3,058 | 190 | 10 | 173 | 30 | 10 | 2 | 3 | 3,476 |

POUNDS OF SEED SAVED, 1951

Improved

| Seedsman | Rutgers | Marglobe | Pritchard | Garden State | Stokesdale | Valiant | Ontario | Baltimore | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cal. Packing Corp. | 1,477 | | 42 | | | | | 100 | 1,619 |
| Campbell Soup Co. | 29,930 | | | 6,020 | | | 205 | | 36,155 |
| H. J. Heinz Co. | 743 | | | | | | | | 743 |
| Ritter Seed Co. | 56,837 | 9,120 | | | 2,013 | | | | 67,970 |
| Francis Stokes Co. | 7,300 | | | | | | | | 7,300 |
| Swedesboro Seed Co. | 7,795 | | 285 | | | 95 | | | 8,175 |
| Totals | 104,082 | 9,120 | 327 | 6,020 | 2,013 | 95 | 205 | 100 | 121,962 |

## LABORATORY ACTIVITIES

### *Parasites of the European Corn Borer*

During the fall of 1951, European corn borers were collected from corn fields distributed throughout the State, to determine the distribution and importance of several parasites previously released in New Jersey. Following a sampling plan devised in 1947 and employed each year since then, a sample of 50 live borers was collected from each of 91 areas of 100 square miles.

The borers were collected by members of the Department and sent to the European Corn Borer Laboratory of the U. S. Department of Agriculture in

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Moorestown, where they were reared and where the emerging parasites were identified.

The results are summarized below with those of four previous surveys.

COMPARATIVE RESULTS EUROPEAN CORN BORER PARASITE SURVEY
1947 - 51

| | 1947 | 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| *Lydella grisescens* | | | | | |
| Areas from which recovered | 82 | 88 | 75 | 90 | 86 |
| Per cent of total borers infested | 14.8 | 26.4 | 15.4 | 19.8 | 18.5 |
| *Macrocentrus gifuensis* | | | | | |
| Areas from which recovered | 23 | 48 | 24 | 24 | 38 |
| Per cent of total borers infested | 2.3 | 6.1 | 1.8 | 2.8 | 3.7 |
| *Horogenes punctorius* | | | | | |
| Areas from which recovered | 12 | 21 | 14 | 14 | 19 |
| Per cent of total borers infested | 0.5 | 1.4 | 0.8 | 1.1 | 1.3 |

## Discussion

These three parasites have demonstrated continued activity over the five-year period. This year the percentages are not as high as they have been in some of the previous years but this is due to a striking increase in borer population. When the host population increases sharply, the parasite population lags behind and the same number of parasitized larvae constitutes a smaller percentage of parasitization. The presentation of a smaller percentage of parasitism does not necessarily indicate a reduction of parasite activity.

### *Airplane Spraying for Forest Insect Control*

More acreage was sprayed by airplane this year for the control of forest insects than in any year since 1947. As in previous years the material applied was a DDT solution containing one pound DDT per gallon applied at the rate of one gallon per acre. The material was applied from an N-3-N type biplane by personnel of Lehava Air Services, Philadelphia, Pennsylvania. The results were satisfactory. Each plot was examined after spraying and the infestation was found to be controlled.

In the spraying for control of the pine sawfly, *Neodiprion sertifer*, a total of 1,667 acres was sprayed on 30 different properties in eight counties in the northern half of New Jersey. This spraying was done during the period April 22 to May 24.

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PROPERTIES AIRPLANE SPRAYED FOR PINE SAWFLY CONTROL
SPRING 1952

| Owner | County | Acres |
|---|---|---|
| Allen, D. W. (Mrs.) | Hunterdon | 18 |
| Beyer, Frank | Warren | 25 |
| Bliss, Walter (Mrs.) | Somerset | 6 |
| Bradley, Charles B. | Morris | 37 |
| Brauer, Charles | Warren | 6 |
| Buist, George (Dr.) | Sussex | 10 |
| Commonwealth Water Co. | Union | 30 |
| Cuse, Robert | Somerset | 47 |
| Dunwalke Farms | Somerset | 165 |
| East Orange Watershed | Essex | 300 |
| Foran, Arthur (Col.) | Hunterdon | 30 |
| Gamble, M. G. | Sussex | 25 |
| Hackettstown Nursery | Warren | 10 |
| Hacklebarney State Park | Morris | 14 |
| Harman, J. R. (Dr.) | Mercer | 18 |
| Hughes, Percy (Dr.) | Warren | 32 |
| Ingersoll Rand Co. | Warren | 600 |
| Kimball, R. G. | Warren | 30 |
| Kraft, Alfons | Hunterdon | 5 |
| Lachenmayr, Andrew | Hunterdon | 16 |
| O'Brien, D. H. | Warren | 12 |
| Pictet, Hubert | Hunterdon | 18 |
| Riehle, Fred | Hunterdon | 10 |
| Rogers, John R. | Morris | 15 |
| Schenck, John | Hunterdon | 5 |
| Schley, Reeve, Jr. | Hunterdon | 10 |
| Serles, Frank | Somerset | 18 |
| Tillison, R. D. | Warren | 5 |
| Tranquility Farms | Warren | 20 |
| Voorhees State Park | Hunterdon | 130 |
| | Total Acres | 1,667 |

The recreational areas of three State parks were sprayed with the same dosage for cankerworm control. They were Washington Crossing State Park, 20 acres; Hacklebarney State Park, 31 acres; and Ringwood Manor State Park, 40 acres. This spraying was done during the period May 10-19. The control obtained was satisfactory.

This method of control has proved valuable in those areas having tall trees which cannot be satisfactorily sprayed with available ground equipment. The spraying is done early in the morning so there is no interference with picnicking. Another advantage is the avoidance of perceptible spray residue on the picnic tables and benches. Some incidental mosquito and fly control has also been reported.

### *Adult Japanese Beetle Damage Survey*

A survey of the damage to foliage of host plants due to feeding by adult Japanese beetles was conducted during the period August 9 to September 4. The methods of observation and scoring were similar to those employed in

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comparable surveys conducted each summer since 1940. Observations were made at 319 selected spots throughout the State. The same observation spots are used each year. Most of the observing is done from a moving car. In areas where the damage is less severe, closer examination is often necessary.

In the State as a whole, the total damage was approximately equal to that which occurred in 1950. It declined noticeably in Warren County and increased somewhat in Monmouth, Middlesex and Union counties.

The area of heaviest general infestation is the northwestern section of the State, including Sussex, Warren and Hunterdon counties, but in most of the State the pest has declined in importance to one which is generally present but economically unimportant.

There were indications early in the flight season that there would be a significant increase in the damage in the Trenton area. Many calls for spraying recommendations were received the last few days in June. However, there were few later and the total effect was about the same as in the past few years.

The following figures indicate the relative trend of the Japanese beetle damage in the State for the past twelve years.

| | Japanese Beetle Abundance Index |
|---|---|
| 1940 | 3.8 |
| 1941 | 3.6 |
| 1942 | 4.2 |
| 1943 | 4.2 |
| 1944 | 4.2 |
| 1945 | 3.6 |
| 1946 | 3.8 |
| 1947 | 3.9 |
| 1948 | 4.0 |
| 1949 | 3.9 |
| 1950 | 4.1 |
| 1951 | 4.1 |

*Observations Concerning Cankerworm Abundance*

A comprehensive survey of cankerworm abundance, similar to that conducted in 1949, had been planned for 1951, but the studies of the virus disease of the pine sawfly, *Neodiprion sertifer*, occupied the entire staff during the cankerworm feeding period and only occasional observations could be made.

The impressions derived from these observations were:

(1) Generally the cankerworm infestation throughout the State is less severe than it has been during any of the past several years.

(2) Noticeable damage occurred only in rather small and widely scattered areas. Some of these were at Columbia in Warren County,

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New Brunswick in Middlesex County, Englewood in Bergen County, Somerville and Pluckemin in Somerset County and Washington Crossing in Mercer County.

(3) The difficulty of predicting cankerworm abundance is emphasized. Since airplane spraying is available and effective for control, it might be used if abundance could be predicted easily with any degree of certainty. However, methods of estimating probable abundance are difficult to put into effect.

*Studies on Virus Disease of the Pine Sawfly*, Neodiprion Sertifer

An experiment with a virus disease of *Neodiprion sertifer* was described in the annual report for 1950-51. The virus material was obtained from Canada and the studies were conducted jointly by the State Department of Agriculture and the U. S. Department of Agriculture's Forest Insect Investigations Division in New Haven, Connecticut.

Airplane-sprayed Area Treated This Year

Since the results obtained last year were so satisfactory but the method of application (knapsack sprayer) laborious and slow, it was decided that a test should be conducted in which a water suspension of the virus organism would be applied from an airplane.

On May 14, a heavily infested 18-acre block of red and Scotch pine on the property of Alfred Baylor, near Delaware, Warren County, was sprayed by plane with a suspension of the virus organism prepared from material collected last year from the experiment at Stephens State Park near Hackettstown.

The plane was one owned by the U. S. Department of Agriculture, headquartered at Beltsville, Maryland, and flown by one of their pilots. The material was applied at dawn with little wind and glass plates placed previously showed distribution over the plot to be good.

After 13 days, sick larvae began to appear in the plot. A few days later heavy collections were being made from cloth trays placed beneath eight heavily infested trees distributed throughout the sprayed area.

After 19 days, practically all the larvae were dead and hundreds of colonies could be found with dead larvae hanging from the needles. At this time several hundred such colonies were collected to provide material for future investigations.

Studies in Area Treated Last Year

The principal advantages of a disease organism over an insecticide in the control of *Neodiprion sertifer* would be its ability to persist and cause

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infection year after year and its ability to spread to areas to which it had not been applied.

Attempts were made to recover the organism from the area where it was applied last year and from adjacent areas by placing cloth trays beneath heavily infested trees and making frequent collections of the dead larvae which dropped to these trays.

Using this method and supplementing it by careful examination of many other trees in the treated and adjacent areas, scattered colonies apparently affected by the virus were found. These did not appear until quite late in the feeding period and no epidemic comparable to that produced last year occurred this year.

It appears that the organism was able to overwinter and spread as far as one-half mile from the point of introduction in one year.

### *Forest Insect and Disease Studies*

A general survey was conducted in approximately 20 groups of plantings of red pine, Scotch pine, white pine and Norway spruce. These groups of plantings were approximately 20 miles apart and all were located in northern New Jersey.

Most attention was paid to the European pine shoot moth and the sawfly *Neodiprion sertifer* on red and Scotch pine, the white pine weevil on white pine and Norway spruce and the spruce gall aphid on spruce.

### Study Plots in Red Pine and White Pine

In order to obtain information concerning fluctuations in abundance of the principal pests of red pine and white pine, six study plots of one-quarter acre each were selected in different parts of the State to serve as permanent study plots. Careful counts of infestation were made and the same trees will be counted each year to provide comparable data. The trees were selected to be of a height which will be available for study for a number of years.

### White Pine Weevil Control Plot

In March 1950 a demonstration experiment was established near Oxford to show the effectiveness of a method of controlling white pine weevil. The treatment involved the application of a concentrated lead arsenate-linseed oil suspension to the leaders only of the white pine and Norway spruce in an area where heavy infestation had occurred for several years.

The treatment was successful; only seven weeviled leaders were found in the treated area, while 575 were counted in a much smaller untreated area. No subsequent treatment was applied.

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In January 1952, the untreated area was examined and 67 weeviled leaders were found while in the treated area about ten times as large as the untreated, only 37 weeviled trees were found.

The figures show that the weevil population has not yet built up in the treated area to the level prevailing in the control. From a practical standpoint all the trees should have been treated because the control area is serving as a source of reinfestation of the treated areas.

## Forest Pest Observers

During the year, the list of persons who are watching for and reporting to this Department unusual damage to forest and shade trees has been expanded. Many of the full-time caretakers at the camps in northern New Jersey were added during the year. Each has been told what to look for and provided with forms for reporting unusual damage. This list now includes observers on 83 tracts of land, comprising 100,049 acres in nine counties of northern New Jersey.

## Compilation of List of Tree Sprayers

In the course of the work in the control of insect pests and diseases of forest and shade trees, the recommendation that the trees be sprayed is often made. Almost invariably the property owner then requests information regarding the availability of such a service in his locality.

During the winter, a questionnaire was prepared and sent to everyone known to be engaged in tree work in New Jersey requesting information concerning the area in which each was willing to work and the degree to which each is equipped to do tree-spraying work.

Of the 126 forms mailed, 90 were returned indicating that 51 operators offer spray service and that it is available in most sections of the State, but that the operators are concentrated in the better residential areas of the State. Of the 51 operators engaged in spraying, 18 are in Essex County. This list has been of great assistance in supplying property owners with the names of concerns offering tree spraying service in their vicinity.

## Recovery of *Neoaplectana glaseri* from Plot Treated May 1940

In an effort to obtain Japanese beetle larvae to stock the White Horse frame containing nematode-infested soil, some digging was done at Harker's Hollow Golf Club, on the Phillipsburg-Belvidere road in Warren County.

An area of heavily infested turf was found and, in the course of collecting 200 healthy larvae, five were found which appeared typical of those infested with *N. glaseri*, the nematode parasite of the Japanese beetle distributed throughout the State by personnel of the parasite laboratory in the

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period of 1939-42. The five larvae were examined and found to be heavily infested by *N. glaseri*. These probably came from a plot established May 28, 1940 at a point approximately one-quarter mile from the recovery point.

The soil examination was not thorough and it is likely that more infested larvae could have been found, had a thorough examination been made. It is evident that this parasite is still having an effect on the Japanese beetle population in the State.

### *Studies on Shade Tree Fertilization*

The current year's work of this laboratory was largely confined to the problems of shade tree fertilization, with particular emphasis on elms. Two series of large elms in Branch Brook Park, Newark, comprising a remaining total of 39 trees, have been under continuous observation since 1948 and 1950, respectively. In addition, one large elm in Princeton and two at White Horse have been periodically sampled over several years to yield information on the seasonal as well as the annual variation in foliage analysis. A nursery of small elms, originally consisting of 60 trees, of which 53 are surviving, was established in the spring of 1949. These small trees have been systematically fertilized and sampled since their establishment to yield information on their response to various fertilizer elements. A plot of 847 elm seedlings established in Groveville in May 1950, was abandoned during the current year because severe and repeated rodent damage made interpretation of the observations worthless.

As this work progressed, it has become increasingly evident that there is a great inherent or genetic variation in the growth habits and responses of the American elm. This is to be expected, since the tree has not been systematically selected for type over a long period of time as has been done with many ornamental and shade plants. This variation renders observation on response uncertain, since it is impossible to determine the normal trend of a heterogeneous population without resort to statistical analysis and the attendant use of large numbers of individuals.

During the latter part of March 1952, a plot of 200 small elms was started on the Van Nest tract near Mercerville. This plot has a uniform soil type and topography. The trees are all budded stock of the Princeton Elm, and are exceptionally uniform in size and growth habit. A series of differential fertilization treatments was commenced at the time of planting. It is expected that the results obtained through a detailed study of the trees in this plot will be much more explicit than can be obtained by similar work involving a diversity of soil conditions and less uniform trees.

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## Studies on the Older Plot, Branch Brook Park

In the summer of 1948, 27 mature elm trees in a section of Branch Brook Park, Newark, were selected for a detailed study of nutritional variation over a number of years. Leaves from these trees have been sampled about mid-September for each succeeding year, and the samples chemically analyzed for a number of the elements known to be essential in plant nutrition. Following the results of the 1948 analyses, a few of the trees were treated by the sub-surface application of zinc and manganese. One of the trees was later treated with a complete fertilizer plus the zinc and manganese compounds.

A review of the reports for the past several years shows that the results of these analyses have been presented as ranges for the group. This presentation has been adequate for the purposes to date, but it now seems that an important result of this work has been an exposition of the yearly fluctuations in nutritional status as reflected by leaf analysis. This makes it desirable to list all of the analytical results available for the four consecutive years. The great amount of labor required for such a study has prevented so extended an undertaking for most plants, and it is felt that the complete record should be made available at this time.

In the following tables, 1 through 10, the analysis of leaf samples for each element is given on an oven-dried basis, for leaves collected in mid-September of each year. The methods of analysis were briefly indicated in the 1948-49 annual report. These trees average about 20 inches in diameter, with the height approximately 50 feet. The second column indicates the treatment, if any, applied to each tree. Initially, two street trees were included in the group, but have been omitted because of the radically different environmental conditions. The blanks in the 1951 columns result from the loss of the trees during the November 1950 hurricane. The analyses for copper, Table 7, do not cover the 1948 and 1949 samplings because the analytical procedure for this element required modification to prevent interference errors, the earlier results being consistently high. At the conclusion of each table the lowest, average and highest value for each year is listed.

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Table 1
NITROGEN
YEARLY VARIATION IN FOLIAGE NITROGEN CONTENT OF ELMS

| Tree Designation | Treatment Applied | Nitrogen, per cent 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 1.36 | 1.46 | 1.59 | 1.37 |
| 77 | | 1.11 | 1.38 | 1.50 | ..... |
| 78 | Mn | 1.47 | 1.67 | 2.12 | 1.29 |
| 79 | Mn-Zn | 1.11 | 1.36 | 1.65 | 0.98 |
| 80 | | 1.55 | 1.85 | 2.14 | 1.30 |
| 81 | | 1.26 | 1.51 | 1.51 | |
| 82 | | 1.54 | 2.29 | 1.80 | 1.52 |
| 83 | | 1.39 | 1.62 | 1.85 | 1.34 |
| 84 | | 1.30 | 1.25 | 1.67 | ..... |
| 85 | Mn-Zn | 1.53 | 1.37 | 1.43 | |
| 86 | Mn-Zn | 1.46 | 0.96 | 1.63 | 1.65 |
| 87 | | 1.57 | 1.57 | 1.97 | ..... |
| 88 | Zn | 1.28 | 1.48 | 1.58 | 1.31 |
| 89 | Zn | 1.38 | 1.54 | 1.64 | 1.21 |
| 90 | | 1.26 | 1.37 | 1.35 | 1.29 |
| 91 | | 1.28 | 1.47 | 1.53 | 1.25 |
| 92 | Mn | 1.40 | 1.43 | 1.45 | 1.23 |
| 93 | | 1.65 | 1.60 | 1.84 | 1.51 |
| 94 | | 1.34 | 1.54 | 1.95 | 1.56 |
| 95 | | 1.52 | 1.59 | 1.75 | 1.39 |
| 96 | | 1.09 | 0.93 | 1.65 | 1.23 |
| 97 | | 1.55 | 1.46 | 1.35 | 1.59 |
| 98 | NPK+Mn+Zn | 1.09 | 1.18 | 1.09 | 1.29 |
| 99 | | 1.43 | 1.43 | 1.46 | 1.77 |
| 100 | | 1.28 | 1.29 | 1.44 | 1.63 |
| Lowest value | | 1.09 | 0.93 | 1.09 | 0.98 |
| Average value | | 1.37 | 1.46 | 1.65 | 1.39 |
| Highest value | | 1.65 | 2.29 | 2.12 | 1.77 |

Table 2
PHOSPHORUS
YEARLY VARIATION IN FOLIAGE PHOSPHORUS CONTENT OF ELMS

| Tree Designation | Treatment Applied | Phosphorus, per cent 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 0.21 | 0.21 | 0.20 | 0.20 |
| 77 | | 0.19 | 0.19 | 0.17 | ..... |
| 78 | Mn | 0.19 | 0.20 | 0.18 | 0.24 |
| 79 | Mn-Zn | 0.20 | 0.22 | 0.21 | 0.24 |
| 80 | | 0.21 | 0.18 | 0.17 | 0.21 |
| 81 | | 0.18 | 0.26 | 0.19 | |
| 82 | | 0.21 | 0.22 | 0.24 | 0.20 |
| 83 | | 0.17 | 0.21 | 0.17 | 0.19 |
| 84 | | 0.17 | 0.19 | 0.21 | ..... |
| 85 | Mn-Zn | 0.17 | 0.19 | 0.16 | ..... |
| 86 | Mn-Zn | 0.19 | 0.19 | 0.18 | 0.44 |
| 87 | | 0.23 | 0.29 | 0.25 | |
| 88 | Zn | 0.19 | 0.23 | 0.19 | 0.20 |
| 89 | Zn | 0.19 | 0.19 | 0.17 | 0.21 |
| 90 | | 0.19 | 0.20 | 0.17 | 0.22 |
| 91 | | 0.19 | 0.18 | 0.16 | 0.17 |
| 92 | Mn | 0.18 | 0.17 | 0.15 | 0.17 |
| 93 | | 0.21 | 0.21 | 0.16 | 0.21 |
| 94 | | 0.17 | 0.20 | 0.16 | 0.20 |
| 95 | | 0.17 | 0.21 | 0.14 | 0.16 |
| 96 | | 0.16 | 0.15 | 0.20 | 0.17 |
| 97 | | 0.22 | 0.21 | 0.18 | 0.20 |
| 98 | NPK+Mn+Zn | 0.15 | 0.15 | 0.18 | 0.16 |
| 99 | | 0.18 | 0.20 | 0.17 | 0.20 |
| 100 | | 0.18 | 0.19 | 0.18 | 0.20 |
| Lowest value | | 0.15 | 0.15 | 0.14 | 0.16 |

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Table 3
POTASSIUM
YEARLY VARIATION IN FOLIAGE POTASSIUM CONTENT OF ELMS

| Tree Designation | Treatment Applied | Potassium, per cent 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 1.18 | 0.80 | 1.35 | 0.55 |
| 77 | | 1.53 | 1.22 | 1.55 | ----- |
| 78 | Mn | 1.44 | 1.08 | 1.31 | 1.02 |
| 79 | Mn-Zn | 1.53 | 1.74 | 1.82 | 1.21 |
| 80 | | 1.29 | 1.12 | 1.47 | 1.12 |
| 81 | | 1.80 | 1.56 | 1.43 | ----- |
| 82 | | 1.25 | 1.07 | 1.20 | 0.46 |
| 83 | | 1.14 | 1.48 | 1.25 | 0.63 |
| 84 | | 0.95 | 1.28 | 0.91 | ----- |
| 85 | Mn-Zn | 1.11 | 0.76 | 0.63 | ----- |
| 86 | Mn-Zn | 1.29 | 0.98 | 1.47 | 2.40 |
| 87 | | 1.26 | 1.51 | 1.90 | ----- |
| 88 | Zn | 1.71 | 1.45 | 1.53 | 1.07 |
| 89 | Zn | 1.43 | 1.74 | 1.61 | 1.34 |
| 90 | | 0.85 | 1.44 | 1.33 | 0.77 |
| 91 | | 1.57 | 1.34 | 1.61 | 1.51 |
| 92 | Mn | 0.83 | 0.79 | 0.80 | 0.52 |
| 93 | | 1.16 | 1.15 | 1.10 | 1.13 |
| 94 | | 1.26 | 0.89 | 1.02 | 1.11 |
| 95 | | 0.95 | 1.02 | 1.02 | 0.93 |
| 96 | | 1.07 | 1.09 | 1.42 | 0.96 |
| 97 | | 1.50 | 1.20 | 1.42 | 1.35 |
| 98 | NPK+Mn+Zn | 1.02 | 0.95 | 1.23 | 0.96 |
| 99 | | 1.11 | 1.29 | 1.29 | 1.76 |
| 100 | | 1.18 | 1.01 | 0.87 | 1.01 |
| Lowest value | | 0.83 | 0.76 | 0.63 | 0.46 |
| Average value | | 1.26 | 1.20 | 1.30 | 1.09 |
| Highest value | | 1.80 | 1.74 | 1.90 | 2.40 |

Table 4
CALCIUM
YEARLY VARIATION IN FOLIAGE CALCIUM CONTENT OF ELMS

| Tree Designation | Treatment Applied | Calcium, per cent 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 1.81 | 2.08 | 2.71 | 2.49 |
| 77 | | 1.37 | 1.76 | 1.72 | ----- |
| 78 | Mn | 1.77 | 1.93 | 2.08 | 2.14 |
| 79 | Mn-Zn | 1.56 | 1.59 | 1.79 | 1.97 |
| 80 | | 1.32 | 1.54 | 1.54 | 1.58 |
| 81 | | 1.58 | 1.56 | 2.27 | ----- |
| 82 | | 1.70 | 1.89 | 2.18 | 1.94 |
| 83 | | 1.96 | 2.01 | 2.53 | 2.39 |
| 84 | | 1.55 | 1.67 | 2.12 | ----- |
| 85 | Mn-Zn | 1.40 | 1.92 | 2.16 | ----- |
| 86 | Mn-Zn | 1.69 | 1.70 | 2.19 | 0.93 |
| 87 | | 1.65 | 1.46 | 1.89 | ----- |
| 88 | Zn | 1.05 | 1.34 | 1.61 | 1.73 |
| 89 | Zn | 1.77 | 1.76 | 2.44 | 2.29 |
| 90 | | 1.73 | 1.31 | 1.73 | 1.75 |
| 91 | | 1.45 | 1.48 | 1.75 | 1.66 |
| 92 | Mn | 1.87 | 1.86 | 1.94 | 2.09 |
| 93 | | 2.16 | 2.25 | 2.32 | 2.30 |
| 94 | | 1.97 | 1.71 | 1.79 | 2.08 |
| 95 | | 1.57 | 2.10 | 1.82 | 2.05 |
| 96 | | 1.12 | 1.48 | 1.77 | 1.50 |
| 97 | | 1.30 | 1.54 | 1.31 | 1.59 |
| 98 | NPK+Mn+Zn | 1.52 | 1.75 | 1.35 | 2.08 |
| 99 | | 1.84 | 2.17 | 2.30 | 2.03 |
| 100 | | 1.79 | 1.88 | 2.34 | 2.06 |
| Lowest value | | 1.05 | 1.31 | 1.31 | 0.93 |

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Table 5
MAGNESIUM
YEARLY VARIATION IN FOLIAGE MAGNESIUM CONTENT OF ELMS

| Tree Designation | Treatment Applied | Magnesium, per cent 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 0.30 | 0.46 | 0.45 | 0.29 |
| 77 | | 0.17 | 0.23 | 0.20 | ..... |
| 78 | Mn | 0.21 | 0.38 | 0.29 | 0.22 |
| 79 | Mn-Zn | 0.23 | 0.26 | 0.26 | 0.18 |
| 80 | | 0.24 | 0.26 | 0.23 | 0.18 |
| 81 | | 0.31 | 0.27 | 0.36 | ..... |
| 82 | | 0.23 | 0.26 | 0.22 | 0.13 |
| 83 | | 0.21 | 0.30 | 0.31 | 0.20 |
| 84 | | 0.20 | 0.19 | 0.32 | ..... |
| 85 | Mn-Zn | 0.19 | 0.30 | 0.36 | ..... |
| 86 | Mn-Zn | 0.23 | 0.26 | 0.31 | 0.17 |
| 87 | | 0.25 | 0.22 | 0.25 | ..... |
| 88 | Zn | 0.18 | 0.22 | 0.24 | 0.21 |
| 89 | Zn | 0.17 | 0.17 | 0.24 | 0.18 |
| 90 | | 0.30 | 0.20 | 0.13 | 0.31 |
| 91 | | 0.19 | 0.20 | 0.17 | 0.18 |
| 92 | Mn | 0.26 | 0.23 | 0.15 | 0.18 |
| 93 | | 0.31 | 0.32 | 0.23 | 0.26 |
| 94 | | 0.43 | 0.27 | 0.24 | 0.24 |
| 95 | | 0.32 | 0.34 | 0.25 | 0.26 |
| 96 | | 0.27 | 0.21 | 0.21 | 0.24 |
| 97 | | 0.29 | 0.26 | 0.14 | 0.23 |
| 98 | NPK+Mn+Zn | 0.21 | 0.24 | 0.18 | 0.22 |
| 99 | | 0.24 | 0.18 | 0.21 | 0.15 |
| 100 | | 0.33 | 0.41 | 0.44 | 0.37 |
| Lowest value | | 0.17 | 0.17 | 0.13 | 0.13 |
| Average value | | 0.25 | 0.27 | 0.26 | 0.22 |
| Highest value | | 0.43 | 0.46 | 0.45 | 0.37 |

Table 6
IRON
YEARLY VARIATION IN FOLIAGE IRON CONTENT OF ELMS

| Tree Designation | Treatment Applied | Iron, Parts per Million 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 643 | 394 | 790 | 1,020 |
| 77 | | 446 | 360 | 654 | ..... |
| 78 | Mn | 720 | 539 | 760 | 770 |
| 79 | Mn-Zn | 438 | 352 | 263 | 360 |
| 80 | | 420 | 291 | 725 | 679 |
| 81 | | 436 | 312 | 355 | ..... |
| 82 | | 306 | 409 | 510 | 640 |
| 83 | | 424 | 416 | 523 | 742 |
| 84 | | 356 | 216 | 355 | ..... |
| 85 | Mn-Zn | 318 | 294 | 360 | ..... |
| 86 | Mn-Zn | 351 | 335 | 309 | 717 |
| 87 | | 530 | 636 | 615 | ..... |
| 88 | Zn | 385 | 369 | 505 | 627 |
| 89 | Zn | 579 | 466 | 653 | 942 |
| 90 | | 455 | 283 | 368 | 740 |
| 91 | | 455 | 403 | 471 | 470 |
| 92 | Mn | 392 | 248 | 264 | 330 |
| 93 | | 455 | 283 | 389 | 400 |
| 94 | | 424 | 381 | 465 | 617 |
| 95 | | 150 | 387 | 341 | 350 |
| 96 | | 464 | 330 | 376 | 622 |
| 97 | | 370 | 388 | 474 | 536 |
| 98 | NPK+Mn+Zn | 369 | 338 | 394 | 531 |
| 99 | | 606 | 460 | 545 | 662 |
| 100 | | 308 | 334 | 700 | 580 |
| Lowest value | | 150 | 216 | 263 | 330 |

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Table 7
COPPER
YEARLY VARIATION IN FOLIAGE COPPER CONTENT OF ELMS

| Tree Designation | Treatment Applied | Copper, Parts Per Million 1950 | 1951 |
|---|---|---|---|
| CL - 76 | Mn | 32 | 38 |
| 77 | | 20 | ----- |
| 78 | Mn | 25 | 30 |
| 79 | Mn-Zn | 12 | 16 |
| 80 | | 23 | 28 |
| 81 | | 12 | ----- |
| 82 | | 17 | 26 |
| 83 | | 16 | 27 |
| 84 | | 15 | ----- |
| 85 | Mn-Zn | 20 | ----- |
| 86 | Mn-Zn | 13 | 32 |
| 87 | | 15 | ----- |
| 88 | Zn | 14 | 21 |
| 89 | Zn | 18 | 31 |
| 90 | | 16 | 28 |
| 91 | | 19 | 17 |
| 92 | Mn | 17 | 18 |
| 93 | | 19 | 16 |
| 94 | | 16 | 21 |
| 95 | | 16 | 15 |
| 96 | | 14 | 21 |
| 97 | | 18 | 23 |
| 98 | NPK+Mn+Zn | 12 | 21 |
| 99 | | 15 | 23 |
| 100 | | 28 | 28 |
| Lowest value | | 12 | 15 |
| Average value | | 18 | 24 |
| Highest value | | 32 | 38 |

Table 8
MANGANESE
YEARLY VARIATION IN FOLIAGE MANGANESE CONTENT OF ELMS

| Tree Designation | Treatment Applied | Manganese, Parts Per Million 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 55 | 131 | 178 | 136 |
| 77 | | 22 | 32 | 48 | ----- |
| 78 | Mn | 31 | 47 | 54 | 61 |
| 79 | Mn-Zn | 62 | 144 | 153 | 161 |
| 80 | | 35 | 49 | 44 | 57 |
| 81 | | 94 | 88 | 115 | ----- |
| 82 | | 17 | 23 | 28 | 41 |
| 83 | | 27 | 57 | 60 | 75 |
| 84 | | 26 | 42 | 43 | ----- |
| 85 | Mn-Zn | 28 | 100 | 173 | ----- |
| 86 | Mn-Zn | 55 | 140 | 135 | 145 |
| 87 | | 83 | 140 | 230 | ----- |
| 88 | Zn | 79 | 304 | 212 | 302 |
| 89 | Zn | 98 | 203 | 251 | 174 |
| 90 | | 35 | 34 | 42 | 52 |
| 91 | | 45 | 59 | 84 | 70 |
| 92 | Mn | 30 | 51 | 72 | 65 |
| 93 | | 49 | 75 | 107 | 86 |
| 94 | | 222 | 500+ | 475 | 420 |
| 95 | | 191 | 500+ | 408 | 425 |
| 96 | | 40 | 47 | 69 | 83 |
| 97 | | 28 | 51 | 60 | 87 |
| 98 | NPK+Mn+Zn | 32 | 94 | 90 | 154 |
| 99 | | 110 | 189 | 275 | 192 |
| 100 | | 17 | 36 | 58 | 48 |
| Lowest value | | 17 | 23 | 28 | 41 |

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Table 9
ZINC
YEARLY VARIATION IN FOLIAGE ZINC CONTENT OF ELMS

| Tree Designation | Treatment Applied | Zinc, Parts Per Million 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 50 | 57 | 73 | 99 |
| 77 | | 59 | 48 | 43 | ----- |
| 78 | Mn | 71 | 75 | 51 | 85 |
| 79 | Mn-Zn | 33 | 46 | 43 | 52 |
| 80 | | 39 | 45 | 51 | 82 |
| 81 | | 85 | 69 | 44 | ----- |
| 82 | | 46 | 46 | 36 | 74 |
| 83 | | 34 | 45 | 22 | 52 |
| 84 | | 32 | 47 | 20 | ----- |
| 85 | Mn-Zn | 17 | 45 | 41 | ----- |
| 86 | Mn-Zn | 20 | 49 | 18 | 66 |
| 87 | | 15 | 59 | 23 | ----- |
| 88 | Zn | 33 | 70 | 16 | 65 |
| 89 | Zn | 26 | 67 | 45 | 79 |
| 90 | | 34 | 50 | 51 | 72 |
| 91 | | 87 | 49 | 44 | 47 |
| 92 | Mn | 92 | 60 | 39 | 41 |
| 93 | | 22 | 45 | 48 | 95 |
| 94 | | 56 | 38 | 36 | 52 |
| 95 | | 99 | 46 | 44 | 43 |
| 96 | | 128 | 43 | 44 | 51 |
| 97 | | 10 | 52 | 45 | 64 |
| 98 | NPK+Mn+Zn | 10 | 48 | 45 | 67 |
| 99 | | 13 | 54 | 42 | 71 |
| 100 | | 51 | 40 | 45 | 56 |
| Lowest value | | 10 | 38 | 16 | 41 |
| Average value | | 47 | 52 | 40 | 66 |
| Highest value | | 128 | 75 | 73 | 99 |

Table 10
BORON
YEARLY VARIATION IN FOLIAGE BORON CONTENT OF ELMS

| Tree Designation | Treatment Applied | Boron, Parts Per Million 1948 | 1949 | 1950 | 1951 |
|---|---|---|---|---|---|
| CL - 76 | Mn | 83 | 72 | 58 | 75 |
| 77 | | 93 | 87 | 69 | ----- |
| 78 | Mn | 85 | 79 | 79 | 91 |
| 79 | Mn-Zn | 81 | 83 | 71 | 83 |
| 80 | | 91 | 83 | 58 | 83 |
| 81 | | 95 | 96 | 96 | ----- |
| 82 | | 91 | 87 | 106 | 98 |
| 83 | | 127 | 79 | 94 | 109 |
| 84 | | 155 | 89 | 103 | ----- |
| 85 | Mn-Zn | 95 | 100 | 81 | ----- |
| 86 | Mn-Zn | 141 | 121 | 94 | 100 |
| 87 | | 94 | 83 | 84 | ----- |
| 88 | Zn | 83 | 72 | 84 | 75 |
| 89 | Zn | 101 | 95 | 94 | 105 |
| 90 | | 119 | 96 | 105 | 99 |
| 91 | | 90 | 81 | 77 | 100 |
| 92 | Mn | 84 | 88 | 64 | 101 |
| 93 | | 100 | 84 | 60 | 88 |
| 94 | | 91 | 96 | 82 | 99 |
| 95 | | 100 | 96 | 86 | 108 |
| 96 | | 82 | 84 | 65 | 83 |
| 97 | | 126 | 79 | 73 | 111 |
| 98 | NPK+Mn+Zn | 88 | 79 | 51 | 101 |
| 99 | | 98 | 77 | 64 | 81 |
| 100 | | 119 | 89 | 66 | 95 |
| Lowest value | | 81 | 72 | 51 | 75 |

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## Treatment of Trees at Branch Brook Park

The analytical results on the 1948 samples showed the most obvious anomalies occurring in the manganese and zinc content of the foliage. It was tentatively assumed that elm foliage should contain a minimum of approximately 50 parts per million zinc and 80 p.p.m. manganese. All subsequent work has shown that this estimate is valid for vigorous trees. Accordingly, a few low manganese and low zinc trees were selected for fertilization trials with these elements, leaving comparable trees for controls. The selected trees are indicated in the tables. Treatment of these eight trees with the minor elements was made on May 2, 1949, while one tree (CL-98) was treated with a complete fertilizer plus these minor elements on September 1, 1949.

The materials were applied by the punch-bar method, making the holes about eighteen inches deep and spaced about three feet apart under the tree canopy, requiring from 60 to 120 holes per tree. The dose per hole was one ounce of the manganese materials, and five ounces of the zinc compound. These quantities were introduced separately, or mixed together when both were applied. Tree CL-98 was treated by combining these minor elements with 75 pounds of 10-10-10 analysis fertilizer and distributing this evenly among 72 holes.

The zinc compound used was a proprietary material known as "zinc compound 38", a zinc carbonate containing 38 per cent metallic zinc equivalent. The manganese compound is known as "Mangano", an impure manganese sesquioxide containing 55 per cent manganese. The quantities used were determined by comparing the metallic content of the compounds with the equivalent quantities of the more commonly used sulfates of these metals.

## Evaluation of the Zinc Applications

In Table 9, trees designated as CL-79, 85, 86, 88, 89 and 98 are the initially low-zinc trees treated with the zinc compound. The control trees for this group are 80, 83, 84, 87, 90 and 93, which received no fertilization. Control trees were selected on a basis of location as well as initial similarity in their analyses. These data have been condensed in Table 11, in which each group is treated as an entity, and the average values and percentage change in leaf zinc content calculated.

Table 11

AVERAGE CHANGES IN ZINC CONTENT, TREATED VS. UNTREATED TREES

| | Zinc Content, p.p.m. | | | | Percentage Change | | | |
|---|---|---|---|---|---|---|---|---|
| | 1948 | 1949 | 1950 | 1951 | 1948-49 1948 Base | 1949-50 1948 Base | 1950-51 1950 Base | 1948-51 1948 Base |
| Zn - Treated | 23 | 54 | 35 | 66 | +135 | —35 | + 89 | +187 |
| Controls | 29 | 49 | 35 | 75 | + 69 | —29 | +114 | +159 |

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The data presented in Table 11 do not show any significant benefit from the zinc applications. Apparently, 1948 was a year in which these trees had a low zinc assimilation, followed by a higher assimilation in 1949. Then, in 1950, the assimilation was again low, to be followed by a higher assimilation in 1951. This view is further supported by an examination of the data as presented in Table 9, where the general trend has been for these trees to make a substantial increase in the zinc foliar content over the four-year period. The current year's work substantiates the conclusion reached in the 1950-51 report; the low zinc trees have made substantial gains, while the few initially high zinc trees tend to a lower level. The zinc content is subject to yearly fluctuations, tending to converge on a range of 50-60 p.p.m. zinc, regardless of the treatment applied and the initial status of the tree.

## Evaluation of the Manganese Applications

Referring to Table 8, it will be noted that the initially low manganese trees, numbers CL-76, 78, 79, 85, 86, 92 and 98, were treated with manganese compound. Control trees for this group are 77, 80, 82, 83, 84, 90, 91, 93, 96, 97 and 100. Attention is also called to the group of initially high-manganese trees, 87, 88, 89, 94, 95 and 99. Table 12 summarizes the yearly changes in these trees, when each group is treated as an entity.

Table 12
AVERAGE CHANGES IN MANGANESE CONTENT, TREATED VS. UNTREATED TREES

| | Manganese Content, p.p.m. | | | | Percentage Changes | | | |
|---|---|---|---|---|---|---|---|---|
| | 1948 | 1949 | 1950 | 1951 | 1948-49 1948 Base | 1949-50 1949 Base | 1950-51 1950 Base | 1948-51 1948 Base |
| Mn-Treated | 42 | 101 | 122 | 120 | +140 | +21 | — 2 | +186 |
| Controls | 31 | 46 | 58 | 66 | + 48 | +26 | +14 | +113 |
| High Mn Trees | 130 | 306 | 308 | 303 | +131 | + 1 | — 2 | +133 |

These data on manganese assimilation show a general increase in the initially low-manganese trees irrespective of the soil application of this element. It is true that the treated trees have made substantially greater gains than the controls. However, if the trend in the untreated trees is continued, these will soon be at or near the presumed minimum value of 80 p.p.m. manganese. It is probable that judgment should be reserved as to whether or not a significant beneficial response followed the application of the manganese compound. The summarized data at the bottom of Table 8 show a gradual increase over the four-year period for both the lowest value and the average manganese content.

## Present Condition of Trees in Branch Brook Park

In 1948 when this study was begun on the original group of trees in Branch Brook Park, a majority of the trees exhibited considerable die-back

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of branches and twigs. The foliage canopy was thin, of poor color, and necrotic areas in the leaves were quite general. The trees have generally improved in appearance from 1948 to 1951. The development of twig dieback has practically ceased, and leaf necrosis is much less evident than it was originally. The most significant changes in leaf composition are seen to have been increases in iron, manganese and zinc. Lack of adequate iron in plants causes a distinctive chlorosis which has not been observed in any of these trees, and it is assumed that iron has not been a limiting factor. The typical symptoms in plants generally indicate that the initially low manganese and zinc assimilation were responsible for the initial appearance, and that the observed improvement is a result of the improved nutritional status in these elements.

## Effect of Drought on Assimilation of Nutritional Elements

The growing season of 1951 was conspicuous for the generally poor appearance of elms throughout the State. Most sections experienced a severe and prolonged drought. The 1950 growing season was more normal with respect to rainfall, and a comparison of analytical data on the same trees in 1950 and 1951 should show the relationship of nutrient absorption by elms under conditions of adequate rainfall and a restricted water supply.

The pertinent data have been collected and presented in Table 13, which covers a total of 100 trees in several locations, fertilized and unfertilized, large and small.

Table 13

COMPARISON OF NUTRITIONAL STATUS OF ELMS
FALL, 1950 AND 1951

| Tree Location | Trees | Percentage Change in Leaf Content, 1950-51, 1950 Base | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | P | K | Ca | Mg | Fe | Cu | Zn | Mn | B |
| Large, White Horse, fertilized | 1 | —24 | +21 | +21 | + 1 | —14 | +157 | +36 | + 4 | +28 | 0 |
| Large, White Horse, unfertilized | 1 | —10 | + 8 | —44 | + 5 | — 6 | +150 | +30 | +16 | +25 | —18 |
| Large, Princeton unfertilized | 1 | —38 | +29 | —20 | — 6 | —16 | —14 | —17 | 0 | —26 | +21 |
| Small, White Horse, fertilized | 43 | —21 | +28 | —30 | + 5 | —14 | +56 | —46 | —26 | —15 | +17 |
| Small, White Horse, unfertilized | 15 | 0 | — 6 | —11 | +19 | — 4 | +47 | —41 | —42 | —20 | +67 |
| Large, Branch Brook Park, O. S.* | 20 | —17 | +12 | —17 | — 6 | —15 | +28 | +33 | +65 | + 1 | 19 |
| Large, Branch Brook Park, N. S.** | 19 | —16 | + 4 | —10 | — 6 | —19 | +20 | +12 | +21 | + 7 | +20 |

*Old series, originally 25 trees selected in 1948.
**New series, originally 20 trees selected in 1950.

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The effect of drought on the assimilation of the various elements of nutrition as shown in Table 13 may be interpreted as follows:

(1) Nitrogen content of the leaves was substantially decreased by dry conditions.

(2) The phosphorus supply tended to be higher under drought conditions.

(3) The potassium content was generally substantially reduced.

(4) The calcium supply was not greatly affected.

(5) Foliage content of magnesium was reduced by drought.

(6) The iron content was substantially higher.

(7) Copper content of the foliage did not follow a definite pattern.

(8) While somewhat confused by a readjustment in high values initially prevailing in the small experimental trees, the general trend indicates that the zinc content was increased by dry weather.

(9) Manganese assimilation did not show a pronounced pattern of change.

(10) The foliage boron content increased under the drier conditions.

## Studies on the New Series of Elms at Branch Brook Park

During the summer of 1950, 20 additional trees were selected for study in Branch Brook Park. One was subsequently destroyed, leaving 19 at present. These are mostly in a section of the Park considerably removed from the original series selected in 1948. In general, these trees are similar in appearance to the group of 25 (20 remaining) selected in 1948. The analytical data are very similar for the two groups, and are not reported here in detail.

## Exchange Mechanism of Manganese and Zinc in Soil

The work on elm nutrition has shown that suboptimal assimilation of zinc and manganese by the trees is a common disorder. Practical experience has shown that fertilization of low vigor elms with commercial fertilizers is frequently disappointing. Preliminary work on the application of zinc and manganese compounds has been inclusive to date, for while the treated trees have improved and shown an increased assimilation of these elements, the same trend to a lesser degree has been followed by the untreated control trees.

These observations led to a series of laboratory experiments designed to yield quantitative information on the release of manganese and zinc from soil. The elements of nutrition do not exist in soil as entirely water-soluble salts or ions, or they would long since have disappeared through the process of

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leaching. Instead, a complex equilibrium exists between the elements in solution in the soil water, those bound to the soil particles by electrical charges, and those being rendered more or less soluble through the physical and chemical agencies of weathering and various biological activities. The experimental work described below is indicative of the processes which occur in nature.

A series of lysometers or extraction columns was set up, the columns being charged as follows:

Column "A"—100 gms. soil + 1 gm. "zinc compound 38"

Column "B"—100 gms. soil + fertilizer + 1 gm. "zinc compound 38"

Column "C"—100 gms. soil + 1 gm. "Mangano"

Column "D"—100 gms. soil + fertilizer + 1 gm. "Mangano"

Column "E"—100 gms. soil only

Column "F"—100 gms. soil + fertilizer

The fertilizer was a commercial 10-10-10 formulation.

Each column was saturated with a sodium acetate extracting solution, and on successive days a 50 milliliter portion of the solution was run through each column. The effluent is called the leachate. These leachates were then analyzed for the zinc and manganese dissolved during the percolation through the soil columns. The extracting solution is widely used in analytical work on soil fertility.

Tables 14 and 15 contain the analytical results obtained for the zinc and manganese removed by each successive 50 ml. portion of extracting solution. The results are expressed in micrograms of the respective element (1 microgram is one-one millionth of a gram).

Table 14

ZINC IN MICROGRAMS, PER SUCCESSIVE 50 ML. EXTRACTION FROM EACH LYSOMETER COLUMN

| Leachate | A Soil + Zn | B Soil + Fert. +Zn | C Soil + Mn | D Soil + Fert. +Mn | E Soil Only | F Soil + Fertilizer |
|---|---|---|---|---|---|---|
| 1 | 59,000 | 30,500 | 937 | 210 | 720 | 90 |
| 2 | 105,000 | 20,000 | 630 | 85 | 990 | 90 |
| 3 | 115,000 | 34,500 | 397 | 270 | 262 | 315 |
| 4 | 68,000 | 11,500 | ..... | ..... | 90 | 112 |
| 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | 22,000 | 2,750 | ..... | ..... | 83 | 78 |
| 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | 11,000 | 2,450 | ..... | ..... | 45 | 75 |

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Table 15

MANGANESE, IN MICROGRAMS, PER SUCCESSIVE 50 ML. EXTRACTION FROM EACH LYSOMETER COLUMN

| Leachate | A Soil + Zn | B Soil + Fert. +Zn | C Soil + Mn | D Soil + Fert + Mn | E Soil Only | F Soil + Fert. |
|---|---|---|---|---|---|---|
| 1 | 305 | 250 | 465 | 550 | 200 | 290 |
| 2 | 135 | 145 | 420 | 396 | 140 | 133 |
| 3 | 133 | 190 | 685 | 435 | 125 | 70 |
| 4 | ----- | ----- | 565 | 445 | 105 | 55 |
| 5 | ----- | ----- | ----- | ----- | ----- | ----- |
| 6 | ----- | ----- | 390 | 245 | 42 | 55 |
| 7 | ----- | ----- | ----- | ----- | ----- | ----- |
| 8 | ----- | ----- | 480 | 180 | 20 | 50 |

The first observation to be made is that the rather insoluble "zinc compound 38" is a potent source of zinc when mixed with the soil and then extracted with the sodium acetate solution. This is seen by comparing the data in the "A" column with that in the "E" column of Table 14. The "Mangano" compound is completely insoluble in the extracting solution, yet when mixed with soil it yields soluble manganese, as is evident by a comparison of column "C" with column "E" in Table 15. Therefore, both of these compounds have greatly increased the exchangeable quantity of their respective elements above that of the untreated soil, and both have a long-lasting effect as shown by the fact that successive leaching has not depleted the supply nearly as rapidly as occurs in the soil alone. Even after eight leachings the replaceable metal remains higher than the initial status of the soil alone.

The second factor which may be of great importance is the repressing effect on the exchangeable metals caused by the addition of fertilizer. For zinc, comparing Columns "E" and "F" of Table 14 shows that the addition of fertilizer to the soil caused a drastic reduction in the amount of zinc entering solution. Naturally, in the later extractions the zinc removed from the soil plus fertilizer column is higher than from the soil column because the initial extractions were so much less. But in no case did the extractable zinc from the fertilizer-treated soil ever approach the initially extractable zinc from the soil alone.

Column "C" is comparable to column "E", while column "D" is comparable to column "F", and the same conclusion may be drawn as to the repressing effect of fertilizer on zinc solubility. An examination of Table 15 in a similar manner shows that while the depressing action of fertilizer on manganese extraction is not as drastic as in the case of zinc, the general trend has been a decrease in the manganese entering solution.

If these observations are applied to the field of tree fertilization, one probable reason for the failure of elms to respond to fertilization with the

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common NPK fertilizers becomes evident. As has been shown, many elms are deficient or on the border line of deficiency with respect to zinc and manganese. Lack of these two elements is thought to be the primary cause for the characteristic poor vigor shown by so many trees, particularly of the type likely to be fertilized in an attempt at revitalization. The fertilizer applied has the effect of greatly suppressing the quantity of zinc capable of entering the exchange mechanism of the soil solution and the roots. The manganese supply is also suppressed, but to a lesser degree. The presumed remedial action, desirable as it may be to increase the available nitrogen, phosporus, and potash, has reduced the availability of at least two essential micronutrients which were already in short supply. Therefore, an initially bad situation has been made worse.

Most of the trees sampled during the course of this work would benefit from an increased supply of nitrogen and potassium. The phosphorus supply is much less often below the presumed adequate level. The foliage content of elms for these tree elements should approximate 1.5 per cent nitrogen, 0.20 per cent phosphorus, and 1.5 per cent potassium. Referring to Tables 1, 2 and 3 will show the general existing condition. If the usual NPK fertilizer were blended with the zinc and manganese compounds, the data in Tables 14 and 15 indicate that adequate supplies of the micronutrients zinc and manganese would be available to the trees.

Another approach appears possible through the use of a fertilizer containing no phosphorus. The repression of solubility of the zinc and manganese is undoubtedly caused by the phosphate ion, and if most of the trees do not require additional phosphate fertilization it might be desirable to eliminate this element from the fertilizer formulation. These, and similar problems are being investigated under field conditions on the newly established trees in Mercerville.

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# SEED CERTIFICATION

## LATE CROP WHITE POTATO SEED CERTIFICATION

The seed potato acreage for New Jersey decreased considerably during 1951. All counties in the southern portion of the State retained approximately the same acreage as that of the previous year, with Mercer and Middlesex counties, in the central areas of New Jersey, showing the greatest decrease in acreage. This reduction in acreage can be traced to the previous seed crop which, in several cases, was a failure. Late in the growing season of the previous year, virus diseases (particularly leaf roll) were spread by heavy infestation of aphids. At no time during the growing season did the potato plant show visible symptoms of virus disease and it was thought that the seed was free of disease and of high quality. However, this was not completely true. The aphids spread leaf roll over the entire field and high percentages of leaf roll appeared the next year in table stock plantings.

To prevent recurrence of this disease spread this year, a test was made during the winter months in the greenhouse at White Horse to determine the amount of virus present. Samples of 100 tubers from each lot of certified seed were planted and at the end of eight weeks a final test reading was made. Growing conditions were not ideal in the greenhouse but growth was near enough to normal to identify leaf roll and varietal mixture.

From the results of this test, two lots of seed were rejected from certification and refused blue tags. Both of these lots possessed excessive amounts of leaf roll. The expansion of the winter testing is inevitable as long as seed potatoes are being produced in New Jersey. To cope with this expansion, greenhouse testing becomes almost impossible. It therefore appears that arrangements must be made with another state to cooperate in testing the seed in a southern area of the United States during the winter months. It is felt that the additional field tests will save many farmers low yelds and possibly crop failures by using unfit seed.

The growing season for late seed potatoes, generally speaking, was good. The seed crop was planted during a dry period, which retarded growth until the end of August and sufficient rainfall was present to mature the crop. The frost killed the majority of the vines and those not killed by frost were beaten off by mechanical means.

A fair yield per acre was experienced in almost all fields. Certified seed producers are continually testing new strains and new methods of growing to produce high yielding, disease-free potatoes.

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## INSPECTION AND CERTIFICATION WORK OF NEW JERSEY LATE CROP WHITE POTATO SEED IN 1951

### ACRES ENTERED FOR CERTIFICATION

| County | Acres | Per Cent |
|---|---|---|
| Cumberland | 94.50 | 61.36 |
| Mercer | 22.00 | 14.30 |
| Middlesex | 16.00 | 10.39 |
| Burlington | 8.50 | 5.52 |
| Monmouth | 4.00 | 2.59 |
| Camden | 9.00 | 5.84 |
| Totals | 154.00 | 100.00 |

### SEED SOURCE

| | 100-lb. Bags | Per Cent |
|---|---|---|
| Maine | 854 | 39.67 |
| New Jersey | 938 | 43.56 |
| Wisconsin | 98 | 4.56 |
| New Brunswick, Canada | 168 | 7.81 |
| Prince Edward Isle | 30 | 1.39 |
| New York | 30 | 1.39 |
| Nova Scotia | 35 | 1.62 |
| Totals | 2,153 | 100.00 |

### PRODUCTION OF CERTIFIED WHITE POTATO SEED OF NEW JERSEY

| | 1950 | | 1951 | |
|---|---|---|---|---|
| Variety | Passed | Production (bushels) | Passed | Production (bushels) |
| Cobbler | 36.25 | 6,162 | 15.00 | 1,650 |
| Katahdin | 162.33 | 37,260 | 85.40 | 17,212 |
| Chippewa | 42.67 | 9,870 | 22.10 | 4,246 |
| Sequoia | 2.50 | 562 | 1.00 | 130 |
| Red Skin | 9.00 | 1,890 | ----- | ----- |
| Triumph | .25 | 50 | ----- | ----- |
| Nettled Gems | ----- | ----- | 1.00 | 125 |
| Essex | ----- | ----- | 2.00 | 516 |
| Kennebec | ----- | ----- | 8.50 | 2,713 |
| Totals | 253.00 | 55,794 | 135.00 | 26,592 |

### ACREAGE FAILING AND PASSING CERTIFICATION

| | Acres | Per Cent |
|---|---|---|
| Rejected or withdrawn at first inspection | 7.00 | 4.60 |
| Rejected or withdrawn at second inspection | 1.50 | .90 |
| Rejected at third inspection | 10.50 | 6.80 |
| Rejected or withdrawn three inspections | 19.00 | 12.30 |
| Passing three inspections (certified) | 135.00 | 87.70 |

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## VARIETAL DISTRIBUTION OF REJECTIONS AND WITHDRAWALS

| Variety | Acres Entered | Acres Rejected and Withdrawn by Inspections First | Second | Third | Acres Certified |
|---|---|---|---|---|---|
| Katahdin | 92.40 | ..... | ..... | 7.00 | 85.40 |
| Chippewa | 22.10 | ..... | ..... | ..... | 22.10 |
| Cobbler | 15.00 | ..... | ..... | ..... | 15.00 |
| Red Skin | 7.00 | 7.00 | ..... | ..... | ..... |
| Kennebec | 13.50 | ..... | 1.50 | 3.50 | 8.50 |
| Sequoia | 1.00 | ..... | ..... | ..... | 1.00 |
| Essex | 2.00 | ..... | ..... | ..... | 2.00 |
| Nettled Gems | 1.00 | ..... | ..... | ..... | 1.00 |
| Totals | 154.00 | 7.00 | 1.50 | 10.50 | 135.00 |

## POTATO ACREAGE ENTERED FOR CERTIFICATION, 1951

| County | Growers | Katahdin | Chippewa | Red Skin | Kennebec | Sequoia | Cobbler | Nettled Essex | Nettled Gems | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Cumberland | 6 | 59.40 | 20.60 | ..... | 6.50 | ..... | 6.00 | 2.00 | ..... | 94.50 |
| Mercer | 1 | 10.00 | ..... | ..... | 2.00 | ..... | 9.00 | ..... | 1.00 | 22.00 |
| Middlesex | 2 | 11.00 | 1.50 | ..... | 3.50 | ..... | ..... | ..... | ..... | 16.00 |
| Camden | 1 | ..... | ..... | 7.00 | 1.50 | .50 | ..... | ..... | ..... | 9.00 |
| Burlington | 2 | 8.00 | ..... | ..... | ..... | .50 | ..... | ..... | ..... | 8.50 |
| Monmouth | 2 | 4.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4.00 |
| Totals | 14 | 92.40 | 22.10 | 7.00 | 13.50 | 1.00 | 15.00 | 2.00 | 1.00 | 154.00 |

## POTATO ACREAGE ENTERED FOR CERTIFICATION, 1950

| County | Growers | Katahdin | Chippewa | Red Skin | Triumph | Sequoia | Cobbler | Kennebec | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cumberland | 8 | 60.00 | 28.00 | ..... | .25 | ..... | 6.00 | 2.33 | 96.58 |
| Mercer | 6 | 36.50 | 7.00 | ..... | ..... | ..... | 25.25 | ..... | 68.75 |
| Middlesex | 3 | 45.00 | ..... | ..... | ..... | ..... | 6.00 | ..... | 51.00 |
| Burlington | 2 | 17.83 | 9.67 | ..... | ..... | .50 | ..... | ..... | 28.50 |
| Monmouth | 1 | 8.00 | 2.00 | ..... | ..... | ..... | 2.00 | .50 | 12.00 |
| Camden | 1 | ..... | ..... | 9.00 | ..... | 2.00 | ..... | .67 | 11.67 |
| Totals | 21 | 167.33 | 46.67 | 9.00 | .25 | 2.50 | 39.25 | 3.50 | 268.50 |

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WHITE POTATO SEED CERTIFICATION INDUSTRY OF NEW JERSEY

| | Growers | Acres Entered | Percentage Rejection | Varietal Distribution | |
|---|---|---|---|---|---|
| 1946 | 27 | 342.465 | 40.38 | | |
| | | | | Katahdin | 178.945 |
| | | | | Chippewa | 77.69 |
| | | | | Cobbler | 37.33 |
| | | | | Sequoia | 21.00 |
| | | | | Red Skin | 16.00 |
| | | | | Sebago | 4.50 |
| | | | | Pawnee | 4.00 |
| | | | | Green Mountain | 3.00 |
| 1947 | 21 | 316.00 | 16.77 | | |
| | | | | Katahdin | 144.67 |
| | | | | Cobbler | 65.83 |
| | | | | Chippewa | 50.50 |
| | | | | Pawnee | 26.75 |
| | | | | Red Skin | 25.00 |
| | | | | Green Mountain | 2.00 |
| | | | | Pontiac | 1.00 |
| | | | | Mohawk | .25 |
| 1948 | 17 | 184.50 | 10.07 | | |
| | | | | Katahdin | 105.00 |
| | | | | Chippewa | 31.20 |
| | | | | Pawnee | 21.50 |
| | | | | Cobbler | 2.50 |
| | | | | Green Mountain | 2.00 |
| | | | | Sebago | 1.50 |
| | | | | Mohawk | 1.50 |
| | | | | Sequoia | .50 |
| 1949 | 13 | 153.50 | 8.47 | | |
| | | | | Katahdin | 89.50 |
| | | | | Chippewa | 27.00 |
| | | | | Red Skin | 9.00 |
| | | | | Pawnee | 5.50 |
| | | | | Sequoia | 5.50 |
| | | | | Cobbler | 4.00 |
| 1950 | 21 | 268.50 | 5.80 | | |
| | | | | Katahdin | 162.33 |
| | | | | Chippewa | 42.67 |
| | | | | Cobbler | 36.25 |
| | | | | Red Skin | 9.00 |
| | | | | Sequoia | 2.50 |
| | | | | Triumph | .25 |
| 1951 | 14 | 154.00 | 12.30 | | |
| | | | | Katahdin | 85.40 |
| | | | | Chippewa | 22.10 |
| | | | | Cobbler | 15.00 |
| | | | | Kennebec | 8.50 |
| | | | | Essex | 2.00 |
| | | | | Nettled Gems | 1.00 |
| | | | | Sequoia | 1.00 |

## GRAIN SEED CERTIFICATION

The fundamental purpose of seed certification is to identify germ plasm and the pedigrees in which this germ plasm occurs. Annually, this conception of seed certification is growing stronger and it is possible that in a few years the pedigrees of plants will be examined and studied by all farmers

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as closely as they are today by livestock men. Today, more than ever before, a farmer's investment is greater in equipment, fertilizer and labor and therefore he cannot afford to gamble on low quality or unknown seed to produce his crops.

The production of certified seed in New Jersey is increasing annually. In 1947, 23,937 bushels of small grain and corn were certified. Five years later this program has more than doubled, with 56,404 bushels certified in 1951. It might also be noted that the demand for New Jersey certified seed far outnumbers the present production. Great strides have been made this past year in increasing seed production. Seed schools, meetings with the county agricultural agents and radio broadcasts have stressed the importance of seed production and introduced new methods of cash returns to qualified farmers.

Much time was devoted to rewriting the seed standards and regulations. The revised regulations strengthen seed quality and will in the future prevent any inferior seed from being sealed. The handbook not only states the rules and regulations but also gives many helpful hints to new producers. A brief history of seed certification in New Jersey was also included in the handbook.

Another act designed to strengthen New Jersey certified seed was the passage by the 1952 Legislature, of Chapter 298, Laws of 1952. This act legally authorizes the State Board of Agriculture to certify agricultural seeds and tubers, and it prohibits the use of the words "certified", "inspected", "registered" or "foundation" in conjunction with the sale of agricultural seeds unless such seeds were inspected and certified by the official certification agency of the State. The act in itself gives public recognition to seed certification and undoubtedly will give strength to its progress.

A vital step was taken this past year in establishing a Foundation Seed Committee. The Committee is composed of men from the State Agricultural Experiment Station and this Department and seed growers. The purpose of this committee is to produce or procure and distribute foundation, registered or certified seed of all field crops certified in New Jersey. In the past, many problems have existed in maintaining genetically pure seed. It is now anticipated that these problems will be in a minority, and definite steps are being taken to maintain small fields of each variety. The roguing of off-type plants in these fields will be done by the plant breeders of the State Experiment Station and inspection will be executed by the Department of Agriculture. It now appears that New Jersey will always have a clean source of seed.

Interagency certification was officially written into the standards this year. The Division now possesses the mechanics for handling certified seed

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that is produced in another state and shipped into New Jersey for cleaning and sealing. Interagency certification, previously entitled "Interstate Certification", is not new. Four years ago seed corn that was shipped to Buffalo for processing was field-inspected. At that time New York and New Jersey cooperated by mutual agreement. This new program now makes it possible to receive in New Jersey carload shipments of small grasses and legumes for final cleaning or repackaging and the seed will not lose its certification identity. It is not expected that this program willl increase greatly for several years, but as a seed-consuming area, New Jersey in the future may be interested in this type of certification.

Individuals and growers in New Jersey cannot afford to allow their thinking and action to become static concerning seed certification. Every worth while movement that comes into being does so in response to the stimulus of a need. The basic elements of a successful seed program are uninterrupted vision, growth and service by those who have a part, however small, in making new varieties available to the farmer.

### *Corn*

The total corn area entered for certification was 474 acres, or 73 acres less than that of the previous year.

The inspection for detasseling of hybrid seed corn commenced during the first week in July. It was necessary to reject a rather high percentage of seed fields for improper detasseling. Sixteen per cent of the N. J. No. 7 hybrid was lost when more than 1 per cent of the female tassels were found shedding pollen. In every case where a field was turned down, it was the direct result of inefficient labor. Obtaining farm laborers for the detasseling was a difficult problem for the seed producer and in most cases the type of labor employed was greatly below normal.

Three new high-clearance detasseling machines were put into operation by seed producers to overcome the scarcity of labor. These high-clearance machines have to be handled carefully because of their tendency to be top-heavy.

FIELD INSPECTION OF HYBRID SEED CORN

| Hybrid | Acres Entered | Acres Rejected | Acres Passed |
|---|---|---|---|
| N. J. No. 2 | 33 | ----- | 33 |
| N. J. No. 4 | 98 | ----- | 98 |
| N. J. No. 7 | 334 | 52 | 282 |
| Foundation | 6 | ----- | 6 |
| F-1 Cross | 3 | ----- | 3 |
| Totals | 474 | 52 | 422 |

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The growing conditions in Burlington County and the southern portion of the State were far from ideal. Severe drought conditions in this area greatly reduced yields. In the majority of the fields the seed crop was reduced by one-quarter of the expected return. Seed production in the northern and eastern areas of the State was satisfactory. In these areas yields were as high as 40 bushels of flat grades per acre.

Seed corn was harvested early to prevent or lessen the infestation of Angoumois grain moth. In several lots severe infestations built up during the drying and cleaning periods. These lots were carefully graded and critically inspected. Wherever lots of seed possessed over 3 per cent grain moth kernels, the lot was rejected. The arrival of this tolerance, which is new, was made by the New Jersey Field Crop Improvement Association and the Department. Apparently the judgment used was sound; no complaints were received from purchasers of the seed.

A new system of grading was introduced and it is felt that it greatly improved the appearance of the seed as well as increased the returns to the farmer. This year the mill was able to raise the percentage of salable flat grades harvested per acre from 71 to 74 per cent. Grading approximately three-quarters of the ear parent in flat grades is satisfactory, but it is felt that with more ideal growing conditions throughout the State, the new method of grading might raise the figure as high as 80 per cent.

Yields of flat grades of N. J. No. 7, on a State basis, were generally satisfactory. This year a total of 28.6 bushels of flats was sealed for every acre passing certification standards. Last year (crop of 1950) a total of 29.6 bushels of flats was certified per acre and in 1949, only 19.2 bushels met standards.

In addition to the sealings found in the summary, 600 eight-pound bags of seed were distributed to 4-H club members and vo-ag students for promotional purposes.

HYBRID CORN SEALING

| Hybrid | Carry-Over 1950 Flats | New Crop of 1951 Flats | Intermediates | Rounds | Total |
|---|---|---|---|---|---|
| N. J. No. 2 | 52 | 663 | 26 | 90 | 831 |
| N. J. No. 4 | 135 | 1,955 | 308 | 220 | 2,618 |
| N. J. No. 7 | 1,406 | 8,097 | ..... | 364 | 9,866 |
| Totals | 1,593 | 10,714 | 334 | 674 | 13,315 |

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COMPARISON STUDY OF NEW JERSEY HYBRID SEED CORN
CLEANING AND GRADING RECORDS 1949-51

| | New Jersey No. 2 | | | New Jersey No. 4 | | | New Jersey No. 7 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1951 | 1950 | 1949 | 1951 | 1950 | 1949 | 1951 | 1950 | 1949 |
| Number of growers' records used | 2 | 2 | 5 | 5 | 8 | 7 | 11 | 12 | 12 |
| Acreage involved | 15 | 16 | 67 | 94 | 88.5 | 112 | 282 | 303 | 237 |
| Rough corn received at mill (bushels) | 699 | 684 | 2,419 | 3,698 | 3,435 | 3,620 | 10,763 | 12,632 | 7,651 |
| Bushels rough corn (ear parent) harvested per acre | 46.6 | 42.8 | 36 | 39.3 | 38.8 | 32 | 38.2 | 41.6 | 28 |
| Total bushels of flat grades certified | 438 | 493 | 1,662 | 1,942 | 1,922 | 1,989 | 8,096 | 8,996 | 4,548 |
| Average bushels of flats per acre | 29.2 | 30.8 | 24.8 | 20.3 | 21.7 | 17.7 | 28.6 | 29.6 | 19.2 |
| Average percentage of flat grades harvested per acre (per cent) | 63.6 | 72 | 68.8 | 51.7 | 56 | 55 | 74.9 | 71 | 59 |
| Large flat (bushels) | 282 | 292 | 1,124 | 1,677 | 1,736 | 1,647 | 598 | 1,180 | 506 |
| (per cent) | 64 | 59 | 67 | 86 | 90 | 83 | 7 | 13 | 11 |
| Medium flat (bushels) | 129 | 168 | 479 | 261 | 186 | 302 | 3,717 | 4,517 | 1,979 |
| (per cent) | 30 | 34 | 29 | 14 | 10 | 15 | 46 | 50 | 44 |
| Narrow flat (bushels) | 27 | 33 | 59 | 4 | ..... | 40 | 3,781 | 3,299 | 2,009 |
| (per cent) | 6 | 7 | 4 | .2 | ..... | 2 | 47 | 37 | 45 |

## *Barley*

This year a total of 344 acres of Wong barley was entered for certification. Of this total acreage, 73 per cent met and passed the field standards. Ninety-three acres or 27 per cent, were rejected for loose smut, mixtures of other grains and mixtures of inseparable weed seeds. The growing season for barley was excellent and the seed harvested was of high quality. As a result, good yields were obtained from seed fields. This year the Department sealed an average of 55 bushels of certified seed for every acre passed. Last year (crop of 1950) only 27 bushels were sealed per acre. With such a variation as this, it is easy to understand the difficulties encountered in attempting to plan production or to forecast amounts of seed. The total bushels sealed this year was 13,828 as compared with 9,999 bushels for the previous year.

The hot-water treatment of foundation seed was again accomplished with the aid of the Francis C. Stokes Company, Vincentown. This method of controlling loose smut was again effective. It is felt that this treatment alone saves many thousands of bushels of barley annually for New Jersey farmers.

In the past one factor that was reducing the quantity of seed certified was the limitation of foundation seed. This year a total of 2,765 bushels of registered seed will potentially plant 1,382 acres of barley eligible for certification. This, the best ever accomplished, is an indication of overcoming a handicap.

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SUMMARY OF THE WONG BARLEY PROGRAM

| Variety | Acres Entered | Acres Rejected | Acres Passed | Bushels Sealed |
|---|---|---|---|---|
| Wong (foundation) | ----- | ----- | ----- | 138 |
| Wong (registered) | 51.0 | ----- | 51.0 | 2,765 |
| Wong (certified) | 293.6 | 93 | 200.6 | 10,925 |
| Totals | 344.6 | 93 | 251.6 | 13,828 |

*Wheat*

Again this year, the largest wheat acreage in the history of New Jersey agriculture was entered for certification. Each year, for the past five years, certified seed wheat acreage has been increasing at a satisfactory rate. In 1950, 821 acres were inspected and in 1951 the acreage increased to 1,203.

Several times during the period of field inspection considerable pressure was exerted upon the inspectors to complete their work because of the added volume. However, with the help of excellent weather, the inspections were completed satisfactorily in the allotted time. It was necessary to reject in the field 393 acres for impurities in the form of variety, weed seed, other crops and disease. The acreage rejected represented approximately one-third of the total crop.

Perfect harvest weather was experienced, resulting in a high quality seed possessing a low moisture content. As a matter of fact, in some cases, this seed possessed such a low moisture content, it had a tendency to crack easily as it was being combined. Several seed producers who failed to adjust their combines to compensate for the brittleness of the grain, lost the germination of the seed or increased the inert matter to a point where it could not be certified.

In 1950, 9,961 bushels were sealed by the Department and this past year the quantity of certified seed increased to 19,224 bushels. Approximately three-quarters of this seed was processed and sealed at the mill in Kingston. By processing seed at the mill, closer examination and inspection are possible by the inspectors and whenever a lot of seed requires special attention in the way of cleaning, the facilities of the mill are available. This year, for the first time, a cylinder grader was used in conjunction with the clipper mill and gravity separator to remove cockle and vetch from wheat and barley. The success of the cylinder grader was so outstanding in eliminating cockle, vetch and split kernels that it is recommended to the New Jersey Field Crop Improvement Association that all certified seed be processed in this manner as a safety feature next year.

The 1951 certified seed wheat program was the most successful season in history, success being measured in the quality and quantity of seed certi-

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fied. This year's efforts clearly indicate that there is a definite place in New Jersey agriculture for a high quality seed. Quality principally enabled the seed wheat program to more than double itself. The analysis of the seed wheat program is encouraging and the future of certification remains with quality seed and the ability of the New Jersey Field Crop Improvement Association to interest and encourage top rate seed producers.

SUMMARY OF THE 1951 SEED WHEAT PROGRAM

| Variety | Acres Entered | Acres Rejected (Field Insp.) | Acres Rejected (Bin Insp.) | Acres Passed | Bushels Sealed |
|---|---|---|---|---|---|
| Leap's Prolific | 9 | ..... | ..... | 9 | 326 |
| Thorne | 1,194 | 393 | 74 | 727 | 18,898 |
| Totals | 1,203 | 393 | 74 | 736 | 19,224 |

## *Oats*

The interest in seed oats production in New Jersey again was dull. Little enthusiasm can be maintained in seed production when public acceptance is not in its favor. New Jersey needs a new variety of oats that will produce a heavy test weight. Seed production will continue to be small until such improved varieties are introduced.

The final inspections of oats were completed with a maximum amount of acres passing. Harvest weather was good, as was the growing season.

Bin inspections were made during December, and the seed was of exceptionally good quality. Test weights averaged 34 pounds per bushel and the color of the seed was light.

With a limited supply of seed, little trouble was experienced in selling the entire crop.

Yields this year averaged 44 bushels of certified seed per acre.

SUMMARY OF THE 1951 OATS PROGRAM

| Variety | Acres Entered | Acres Passed | Bushels Sealed |
|---|---|---|---|
| Clinton | 77.0 | 76.0 | 2,388 |
| Mohawk | 8.5 | 8.5 | 357 |
| Totals | 85.5 | 84.5 | 2,745 |

## *Soybeans*

There was considerable interest in soybean certification this year and as a result, the acreage increased to 788 acres. This is 114 acres more than the previous year. During the field inspection several fields were rejected for varietal impurities and in all fields varietal impurity increased to an alarming degree. To correct this situation, sources of registered Hawkeye and Lincoln soybeans were purchased from Indiana by the New Jersey Field Crop Improvement Association for distribution to certified seed growers.

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Again purple stain disease showed up in many lots of seed and upon examining the history of these lots, the following observations were made:

(1) Soybeans planted in rows had few purple beans.

(2) Soybeans planted in low, wet fields contained a high percentage of purple stain.

(3) Fields that contained many large weeds, regardless of whether they were row or drill planted, had a high percentage of purple stain.

It was necessary to reject from certification 85 acres of Hawkeye and 40 acres of Lincoln soybeans because of excessive amounts of purple stain. These lots contained more than 3 per cent discolored beans. The total rejection for this year is 125 acres, compared with 165 acres last year.

The use of row planting has become widely accepted as the best method of producing seed. Row planting, which apparently reduces purple stain, an undesirable disease, also permits the grower to harvest his seed at the proper time. The times of harvest is an important factor in maintaining high seed quality.

Germinations were high, with a large percentage well over the minimum seed standards. Only 31 acres were rejected for low germination.

A rather successful season was experienced in the production of soybean seed. Unfortunately, the precentage of rejection was too high. However, this was necessary to maintain high quality.

SUMMARY OF THE 1951 SOYBEAN PROGRAM

| Variety | Acres Entered | Acres Rejected (Field Insp.) | Acres Rejected (Bin Insp.) | Acres Passed | Bushels Sealed |
|---|---|---|---|---|---|
| Lincoln | 85.0 | 10.0 | 40.0 | 35.0 | 1,094 |
| Chief | 83.5 | ..... | 12.0 | 71.5 | 1,108 |
| Hawkeye | 620.0 | 31.5 | 264.0 | 324.5 | 5,090 |
| Totals | 788.5 | 41.5 | 316.0 | 431.0 | 7,292 |

GRAIN CERTIFICATION SUMMARY

| Crop Year | Number of Growers | Total Acres Entered | Total Acres Certified | Per cent of Rejection | Total Bushels Sealed |
|---|---|---|---|---|---|
| 1951 | 126 | 2,895.60 | 1,925.10 | 32.90 | 56,404.00 |
| 1950 | 128 | 2,670.90 | 2,025.90 | 24.00 | 43,819.50 |
| 1949 | 99 | 1.833.83 | 1.573.08 | 14.20 | 41,935.00 |
| 1948 | 83 | 1.275.00 | 1,019.50 | 20.00 | 27,278.50 |
| 1947 | 101 | 1,359.90 | 1,015.70 | 25.30 | 23,937.50 |

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# *Official Proceedings of the Thirty-Seventh Annual State Agricultural Convention*

The thirty-seventh annual State Agricultural Convention was held in the Assembly Chamber of the State Capitol in Trenton on Tuesday, January 29, 1952. The meeting was called to order at 10:00 a.m. by Milton C. Tice, president of the State Board of Agriculture. The invocation was offered by the Rev. Paul W. Kapp, former chaplain of the New Jersey State Grange.

The roll of delegates was called by W. H. Allen, Secretary of Agriculture, as follows:

## Delegates of the State Agricultural Convention

### *From County Boards of Agriculture*

| Name | Address | Term | County |
|---|---|---|---|
| Joseph Quarella | Landisville | 2 years | Atlantic |
| Richard C. Lobherr, Sr. | Egg Harbor | 1 year | Atlantic |
| Irving K. Christensen | Wood Ridge | 2 years | Bergen |
| *John T. Drenth | Ridgewood, R. D. | 1 year | Bergen |
| Clement B. Lewis | Riverton | 2 years | Burlington |
| Barclay H. Allen | Mount Holly | 1 year | Burlington |
| *Samuel McCulley | Berlin | 2 years | Camden |
| *James M. Wilson | Sicklerville | 1 year | Camden |
| Maurice Stiles | Cape May Court House, RD. | 2 years | Cape May |
| Leslie Rea | Cape May, R.D. | 1 year | Cape May |
| Frank Zitto | Vineland | 2 years | Cumberland |
| David Tepper | Bridgeton, R.D. 2 | 1 year | Cumberland |
| Frank Ruzza | Livingston | 2 years | Essex |
| Roy Blair | Nutley | 1 year | Essex |
| Leslie Richards | Sewell, R.D. | 2 years | Gloucester |
| Alvin String | Harrisonville | 1 year | Gloucester |
| Harold B. Everitt | Flemington, R.D. 1 | 2 years | Hunterdon |
| Charles Burd | Pittstown, R.D. | 1 year | Hunterdon |
| L. Bradford Golden | Skillman, R.D. 1 | 2 years | Mercer |
| John D. Fausett | Hopewell, R.D. | 1 year | Mercer |
| George R. Parker, Jr. | Plainsboro | 2 years | Middlesex |
| Thomas Farino | Jamesburg, R.D. 1 | 1 year | Middlesex |
| Roscoe C. Clayton | Freehold, R.D. 3 | 2 years | Monmouth |
| Walter W. Lott | Freehold, R.D. 3 | 1 year | Monmouth |
| J. L. MacDougall | Morris Plains | 2 years | Morris |
| James P. Vreeland, Jr. | Towaco | 1 year | Morris |
| Martin Schubkegel, Sr. | Lakewood, R.D. 3 | 2 years | Ocean |
| Raymond Cook | Lakewood, R.D. 3 | 1 year | Ocean |
| Edward Anthony | Clifton, R.D. 1 | 2 years | Passaic |
| Michael Klein, Clifton R.D., 1, alternate for *Chester J. Krulan | Clifton, R.D. 1 | 1 year | Passaic |
| Ralph G. Layton | Penns Grove, R.D. | 2 years | Salem |
| Albert F. Buzby | Woodstown | 1 year | Salem |
| William H. V. Davis, Somerville, R.D. 1, alternate for *Gilbert I. Runyon | Skillman | 2 years | Somerset |
| David W. Amerman | Neshanic | 1 year | Somerset |
| Ernest Staudt | Port Jervis, R.D. 1, New York | 2 years | Sussex |
| John H. Merrill | Newton, R.D. 2 | 1 year | Sussex |
| Charles H. Brewer | Rahway, R.D. 1 | 2 years | Union |
| Edward C. Schaffernoth | Plainfield, R.D. 1 | 1 year | Union |
| Fred W. Fuchs, Belvidere, R.D. alternate for *Walter Wyckoff | Port Murray, R.D. | 2 years | Warren |
| Azariah Frey | Stewartsville | 1 year | Warren |

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*From Pomona Granges*

| Name | Address | Term | County |
|---|---|---|---|
| Martin Decker | Hammonton, R.D. 1 | 1 year | Atlantic |
| C. Harold Joyce | Medford | 2 years | Burlington |
| P. Wendell Beideman | Haddonfield | 1 year | Camden |
| Allan McClain | Green Creek | 2 years | Cape May |
| Edward Kielblock | Chatham, R.D. | 1 year | Central District |
| Walter Peacock | Bridgeton, R. D. 5 | 1 year | Cumberland |
| Leslie Richards | Sewell, R.D. | 1 year | Gloucester |
| John T. Hudnett | Flemington | 1 year | Hunterdon |
| *Milton S. Hulick, Jr. | Dutch Neck | 1 year | Mercer |
| Harry W. Kline | New Brunswick, R.D. 3 | 1 year | Middlesex and Somerset |
| Howard P. Story | Freehold, R.D. 3 | 1 year | Monmouth |
| Thomas J. Curley | Salem, R.D. 1 | 1 year | Salem |
| Harry Vance | Glenwood | 1 year | Sussex |
| Preston B. Cole | Stewartsville | 1 year | Warren |

*From Other Organizations*

American Cranberry Growers Association—Isaiah Haines, New Lisbon, 1 year; F. Allison Scammell, Toms River, 1 year.

Jersey Chick Association—Martin Schubkegel, Jr., Lakewood, 1 year; *Herman Demme, Sewell, 1 year.

New Jersey Association of Nurserymen—Paul Hoverman, Paramus, 1 year; Gerard Grootendorst, Oakland, 2 years.

New Jersey Florists Association—August Bosenberg, New Brunswick, 1 year; George Masson, Yardville, alternate for *George C. White, East Rutherford, 1 year.

New Jersey State Grange—Edwin A. Gauntt, Cranbury, 1 year; Jacob A. Blakeslee, Newton, R.D. 3, 1 year.

New Jersey State Horticultural Society—Clarence H. Steelman, Princeton, R.D. 3, 1 year; C. Wm. Haines, Masonville, alternate for *Lester Collins, Moorestown, 2 years.

New Jersey State Poultry Association—James C. Weisel, Rosemont, 1 year; Herbert O. Wegner, Newfield, 1 year.

United Milk Producers of New Jersey—Benjamin Hart, Pennington, R.D. 1, 1 year; Thomas L. Lawrence, Hamburg, 1 year.

Blueberry Cooperative Association—W. A. Jarvis, Pemberton, 1 year.

Cooperative Growers' Association, Inc.—Raymond J. Anderson, Bridgeboro, 1 year.

E. B. Voorhees Agricultural Society—William M. Nulton, Jr., Franklin Park, R.D. 3, 1 year.

New Jersey Holstein-Friesian Cooperative Association, Inc.—Charles H. Kirby, Harrisonville, 1 year.

New Jersey Agricultural Experiment Station—Clifford E. Snyder, Pittstown, 1 year.

New Jersey Beekeepers Association—Henry E. Neidengard, Clifton, 1 year.

New Jersey College of Agriculture—Dr. William H. Martin, New Brunswick, 1 year.

New Jersey Field Crop Improvement Cooperative Association—George Stevens, Eatontown, R.D., 1 year.

New Jersey Guernsey Breeders' Association—Lloyd B. Westcott, Clinton, 1 year.

New Jersey State Potato Association—Charles W. Holman, Dutch Neck, 1 year.

New Jersey Aberdeen-Angus Breeders' Association—Joseph G. Hancock, Bridgeton, R.D. 2, 1 year.

*Absent

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## APPOINTMENT OF COMMITTEES

At the delegates' dinner held on the evening preceding the Convention, the following committees were appointed by President Tice:

### NOMINATING COMMITTEE FOR MEMBERS OF THE STATE BOARD OF AGRICULTURE

| | |
|---|---|
| Clement B. Lewis, Chairman | Burlington County Board of Agriculture |
| David W. Amerman | Somerset County Board of Agriculture |
| Roscoe C. Clayton | Monmouth County Board of Agriculture |
| Fred W. Fuchs | Warren County Board of Agriculture |
| Joseph G. Hancock | New Jersey Aberdeen-Angus Breeders' Association |
| Charles W. Holman | New Jersey State Potato Association |
| C. Harold Joyce | Burlington County Pomona Grange |
| Charles H. Kirby | New Jersey Holstein-Friesian Cooperative Association |
| Michael Klein | Passaic County Board of Agriculture |
| Richard C. Lobherr, Sr. | Atlantic County Board of Agriculture |
| George R. Parker, Jr. | Middlesex County Board of Agriculture |
| Leslie Richards | Gloucester County Board of Agriculture |
| Clifford E. Snyder | New Jersey Agricultural Experiment Station |
| David Tepper | Cumberland County Board of Agriculture |
| George C. White | New Jersey Florists Association |

### COMMITTEE ON RESOLUTIONS

| | |
|---|---|
| Lloyd B. Wescott, Chairman | New Jersey Guernsey Breeders' Association |
| Barclay H. Allen | Burlington County Board of Agriculture |
| Jacob A. Blakeslee | New Jersey State Grange |
| Martin Decker | Atlantic County Pomona Grange |
| J. L. MacDougall | Morris County Board of Agriculture |
| Martin Schubkegel, Jr. | Jersey Chick Association |

At the State Agricultural Convention the following committees were appointed:

### COMMITTEE ON CREDENTIALS

| | |
|---|---|
| E. A. Gauntt, Chairman | New Jersey State Grange |
| P. Wendell Beideman | Camden County Pomona Grange |
| Leslie Rea | Cape May County Board of Agriculture |
| James C. Weisel | New Jersey State Poultry Association |

### COMMITTEE TO WAIT ON THE GOVERNOR

| | |
|---|---|
| C. William Haines, Chairman | New Jersey State Horticultural Society |
| Thomas L. Lawrence | United Milk Producers of New Jersey |
| Dr. William H. Martin | New Jersey College of Agriculture |

## REPORT OF COMMITTEE ON CREDENTIALS

The credentials committee examined the certificates of delegates and reported them in order.

## ELECTION OF MEMBERS OF THE STATE BOARD OF AGRICULTURE

The chairman of the nominating committee placed the names of Henry Rapp, Jr. of Farmingdale and Lloyd B. Wescott of Clinton in nomination for membership on the State Board of Agriculture to succeed Milton C. Tice, Deerfield, and Steffen Olsen, Westwood, whose terms would expire on June

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30, 1952. Upon motion made and duly seconded it was voted that the nominations be closed and Messrs. Rapp and Wescott were unanimously selected for recommendation to the Governor for a four-year period beginning July 1, 1952.

## CITATIONS

Citations for distinguished service to agriculture were awarded to Henry H. Albertson of Burlington, Marion Butters of New Brunswick, and C. Russell Jacobus of Upper Montclair.

The citations, read by Secretary of Agriculture Willard H. Allen, were as follows:

### CITATION OF HENRY H. ALBERTSON

You are recognized as one of the outstanding husbandmen who till the New Jersey soil. For nearly a half century your orchards and fields have been maintained according to the rich traditions for which agriculture in Burlington County long has been renowned.

Throughout your notable career you have been acclaimed as one who never compromised with less than perfection, always striving for the highest standards of performance in both production and marketing.

You have inspired your fellow growers by responding to every call for counsel and cooperation. You have served with distinction as an active member and officer of the New Jersey State Horticultural Society.

In other farm and civic organizations you have filled many important posts, especially as a leader and patron of the local cooperatives, as an officer of the Burlington County Board of Agriculture and as an active sponsor of the recently-revived Burlington County Farm Fair.

These are but a few of your many contributions to the welfare of your fellow New Jersey farmers for which the State Board of Agriculture commends you and confers on you this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

### CITATION OF MARION BUTTERS

Today, thousands of New Jersey and suburban families enjoy the countless benefits of a richer and fuller life as a result of the constructive programs that you have conceived and directed in the field of home economics.

As one of the pioneers in recognizing the importance role of the farm homemaker in the building of a sound agriculture, you displayed rare vision and a zeal to serve which have inspired others in the attainment of higher aspirations.

Always singularly modest, both as a teacher and administrator, you assembled a competent staff of home agents and trained many adult and youth leaders, assuring for the future the continuing example of your high ideals.

Because of your sincerity and true Christian spirit, you hold a unique place in the hearts of many of our homemakers, who are grateful that you chose New Jersey as your adopted State.

Consequently, it is most fitting that the delegates assembled here today pause in their proceedings to extend best wishes to you on the occasion of your retirement and to pay tribute to your achievements by awarding to you this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

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## CITATION OF C. RUSSELL JACOBUS

Year after year, in addition to conducting with marked success your own enterprise, you always have found time to devote to the welfare of your fellow nurserymen and florists, striving constantly to advance their interests.

Because of your rare qualities of leadership, you have made a substantial contribution to the high rank which ornamental horticulture has attained as an important branch of the agriculture of both our State and Nation.

It is fitting that we commend you as an active officer of many nursery groups, a sponsor of the Agricultural Extension Service and a member of the State Board of Agriculture. These are but a few outstanding examples of countless assignments you have fulfilled with distinction, of numerous jobs well done. Service to others always has been your creed.

You have made richer and happier the lives of those suburban home gardeners who look to you each spring for renewed inspiration and guidance. From you they have gained a greater appreciation and understanding of all agriculture.

We pay tribute to you by presenting this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE. This occasion has special significance to us as we are reminded that you have served as president of the Board.

## REPORT OF COMMITTEE ON RESOLUTIONS

The following resolutions, presented by Jacob A. Blakeslee and reported favorably by the committee, were adopted by the State Agricultural Convention:

At this eightieth anniversary of the New Jersey Agricultural Convention, we wish particularly to recognize the importance of this unique institution. At this convention, agriculture chooses and nominates by democratic process its representatives to the State Board of Agriculture, who in turn select their executive officer, the State Secretary of Agriculture. This institution is of great value to all New Jersey farmers and is the envy of farm groups in most other states.

Secretary Allen and his predecessors have been recognized throughout the nation for their able, conscientious service. We resolve to do all in our power to protect and maintain the traditions of the Agricultural Convention and we pledge our support and cooperation to our Secretary of Agriculture.

*Resolved*, that this 37th Annual Agricultural Convention record its deep appreciation to our Governor, the Honorable Alfred E. Driscoll, for his keen interest in the great agricultural industry of the Garden State and his ready understanding of the economic importance of this enterprise to the welfare of the whole state, and for giving of his busy time at personal sacrifices to meet with us, and be it further

*Resolved*, that we urge his valued support in all phases of government so that food production in New Jersey may be continued at its present high level of achievement; and be it further

*Resolved*, that a copy of this expression be sent to the Honorable Alfred E. Driscoll.

WHEREAS, the head of our New Jersey State Police, Colonel Charles H. Schoeffel, will retire from that organization in the near future, and

WHEREAS, he has distinguished himself in all the years he has been associated with that splendid organization, beginning as one of the 72 original Troopers in 1921 and during the past ten years as its director, but not only maintaining but further advancing the high standard of perfection for which that organization is known throughout the length and breadth of this land, now therefore be it

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*Resolved*, that we, the official delegates to the 37th Agricultural Convention assembled in Trenton, N. J., on January 29, 1952, do hereby publicly and gratefully acknowledge our genuine appreciation to him for a job well done, and for his sincere interest in our agricultural welfare, demonstrating that interest by unreserved cooperation with any rural group or organization when he could render assistance of any kind, and be it further

*Resolved*, that as he severs his active public association with us, we extend our best wishes for success in any future undertaking he elects, and be it further

*Resolved*, that copies of this expression of trust and appreciation be forwarded to Colonel Schoeffel, to the Honorable Alfred E. Driscoll and to the Honorable Theodore D. Parsons, Attorney General.

WHEREAS, statements in the public press indicate that Major Russell A. Snook will be elevated to the post of Superintendent of the New Jersey State Police upon its forthcoming vacancy, therefore be it

*Resolved*, that this agricultural convention of 1952 convey to him its hearty congratulations and extend its best wishes for a regime of continued success and achievement by this famed constabulary, and assure him of the solid support of rural people and organizations for whose benefit and protection it was originally established; and be it further

*Resolved*, that a copy of this resolution be forwarded to Major Snook and to his present superior officer, Colonel Schoeffel.

WHEREAS, the understanding of this body is that the Division of Fish and Game is about to introduce legislation providing that deer hunters in the State shall be required to obtain a separate deer license costing $3.15 for residents and $5.50 for non-residents, and

WHEREAS, it is our understanding that this legislation is necessary in order to provide for a proper deer management in the State including relief to farmers suffering damage and the cost of enforcement against illegal shooting, and

WHEREAS, it is felt by the Division that this legislation will allow the Division to carry out the deer project which had been approved by the Division and the New Jersey Farm Bureau and the State Federation of Sportsmen's Clubs over a year ago, therefore be it

*Resolved*, that the annual session of the New Jersey Agricultural Convention held in Trenton this 29th day of January, 1952, we approve of the introduction of said bill provided it contains a clause that $1.00 of the deer license be set aside by the Division for the acquisition of suitable land in the State for hunting and for the expansion of the deer management program.

WHEREAS, Providence each year removes from our midst long time associates and leaders in agriculture, of whom one was Boyd Fullerton, who was interested both in the rich history of agriculture in this state, having lived on the farm that had been in his family for more than two centuries and having contributed to the advancement of the New Jersey Agricultural Society in its pursuit of historical lore, and who at the same time was vitally interested in the future of New Jersey agriculture and was recognized as an able and respected leader in farm circles, therefore be it

*Resolved*, that this Convention of agricultural delegates pause here for a moment of respectful silence to the memory of him and others who are no longer with us.

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