STATE OF NEW JERSEY

DEPARTMENT OF AGRICULTURE

WILLIAM C. LYNN, *Acting Secretary*

TRENTON

Forty-first Annual Report

of the

New Jersey State Department of Agriculture

July 1, 1955 — June 30, 1956

Trenton, N. J., June 30, 1956

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Messrs. Rapp and Wescott will retire from the Board on June 30, 1956. The new members will be Insley H. Roy of Andover and Herbert O. Wegner of Newfield.

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DEPARTMENT OF AGRICULTURE

WILLIAM C. LYNN, *Acting Secretary*

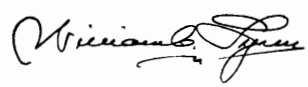
TRENTON

June 30, 1956

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 Forty-first Annual Report of the New Jersey Department of Agriculture, for the fiscal year ended June 30, 1956.

Respectfully yours,



FORTY-FIRST ANNUAL REPORT OF THE NEW JERSEY DEPARTMENT OF AGRICULTURE

Retirement of Secretary W. H. Allen

The official retirement of Willard H. Allen as Secretary of Agriculture on February 1, 1956, after 18 years of service in this position, was an event of considerable moment in the life of the Department. It was an action necessitated by reason of ill health, regrettable not only to his entire staff but also to all agriculture in New Jersey.

Secretary Allen was recognized far and wide as a capable administrator. Under his direction and broad vision, the Department undertook programs of both law enforcement and service which were of direct benefit to agriculture and of indirect benefit to the citizens and economy of the State. Marked progress was made in the eradication of livestock diseases, in plant disease and insect control, in the development of seed certification, and in the field of marketing and its related activities.

Indicative of his achievements are the honors which were bestowed on him during his period of activity. Among these were an honorary degree of Doctor of Science from Rutgers University; the 1949 award of the Advertising Club of New Jersey as the Outstanding Citizen of New Jersey; a citation from the State Board of Agriculture for distinguished service to New Jersey agriculture; and the gold medallion of the New Jersey Agricultural Society.

Upon the retirement of Mr. Allen, it became the responsibility of the State Board of Agriculture to choose his successor. Aware of the fact that the office of Secretary of Agriculture in New Jersey has been a career position — only three men having held this post in 40 years — the State Board considered long and diligently to select a man under whose leadership the high standards of administration and public service would be maintained. Their decision resulted in the appointment of Phillip Alampi of West Englewood, effective July 1, 1956.

The Year In Review

The summer and fall of 1955 will long be remembered in New Jersey agriculture for the devastatingly adverse weather conditions which affected much of our farm production. Severe drought and high temperatures, followed by two hurricanes, drastically cut yields of many crops. No substantial shortages resulted over any regional area, and as a consequence, prices in general did not advance sufficiently to overcome the losses in yield.

The gross farm value of our agricultural products for the calendar year of 1955 amounted to $366,720,000, nearly 5 per cent below the 1954 total. More than two-fifths of the 1955 total was represented by eggs and poultry; these combined accounted for nearly 43 cents of each dollar of farm value, compared with 38 cents per farm dollar of the year before. Except for tree fruits, the farm value of all other commodities declined.

Grains showed the most drastic decline, their farm value shrinking about 40 per cent below that of 1954, due to adverse weather. Potatoes likewise suffered a substantial loss, the total farm value being not much more than three-fourths of the 1954 amount; in this instance the loss in production was mainly due to a continued cut in acreage.

The farm value of agricultural products in 1955, with percentage changes from 1954 indicated, are tabulated below:

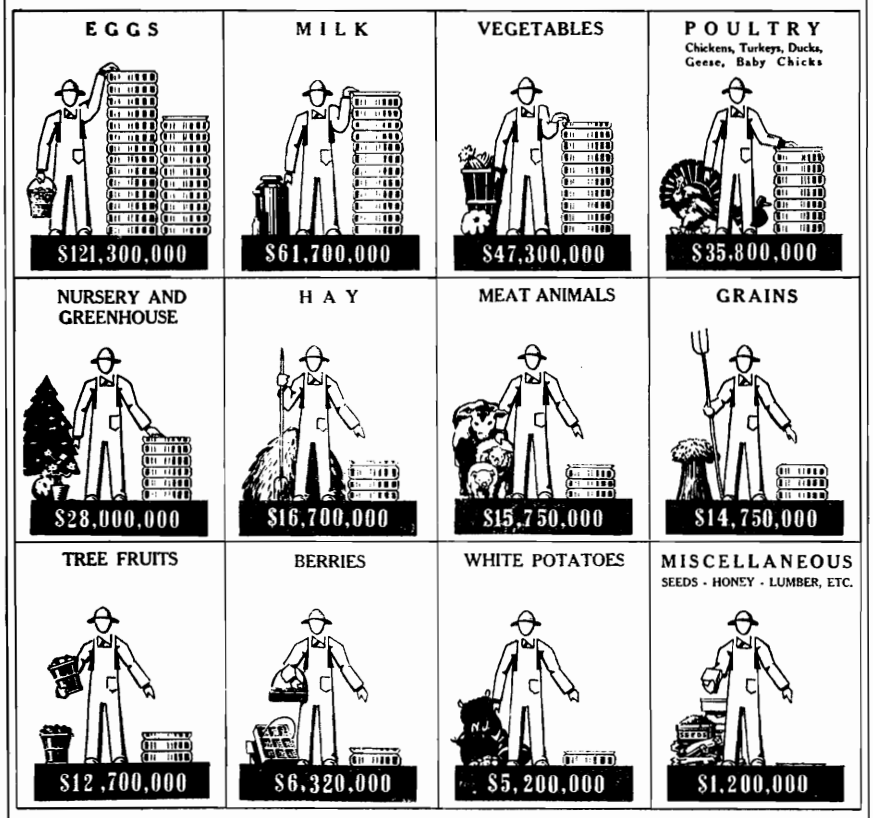
Commodity	Gross Farm Value	Per Cent Increase	Per Cent Decrease
Eggs	$121,300,000	7.7	....
Milk	61,700,000	....	6.2
Vegetables	47,300,000	....	13.2
Poultry (including turkeys & ducks)	35,800,000	5.3	....
Nursery & greenhouse	28,000,000	....	15.4
Hay	16,700,000	....	2.0
Meat animals	15,750,000	....	11.0
Grains	14,750,000	....	38.2
Tree fruits	12,700,000	19.5	....
Berries	6,320,000	....	13.0
White potatoes	5,200,000	....	23.7
Miscellaneous (seeds, honey, lumber)	1,200,000	....	7.5
	$366,720,000		

Per cent decrease for all farm products 4.6

1955 VALUE of PRODUCTION

NEW JERSEY AGRICULTURAL PRODUCTS

$366,720,000



PRELIMINARY ESTIMATES PREPARED BY THE
NEW JERSEY CROP REPORTING SERVICE, U.S. DEPARTMENT OF AGRICULTURE

NEW JERSEY DEPARTMENT OF AGRICULTURE, January 1956

THE WORK OF THE DEPARTMENT

Activities of the department are classified under two general headings: regulatory and promotional. The regulatory work is comprised of the enforcement of laws enacted by the Legislature, many of which provide for control and eradication of livestock diseases, and diseases and insect pests of plant life. Others have to do with the licensing and bonding of dealers in milk, produce, eggs and poultry, and cattle, and the sale of eggs to consumers.

Promotional activities center around specialized marketing projects dealing with market news, standardization of grades and packages, and informational service. Working through numerous organizations of producers, as well as with individual growers, programs of direct benefit to farmers and indirectly beneficial to consumers as a whole are effected. These lines of endeavor have contributed to the over-all agricultural economy.

Our livestock population continued to decline, slowly but perceptibly. During the year there was a reduction of about 10 per cent in the number of dairy herds, and about 5 per cent fewer cattle. Figures thus indicated that there were one to two more cows in the herds remaining, compared with the previous year.

Tuberculosis eradication has proceeded smoothly, with all animals being tested annually. It is gratifying to note that only one animal in more than 1,100 reacted to the tests this year compared with an average for the previous ten years of one in every 580. The State has maintained its accredited status by being well within the requirements of the Federal Government.

The efforts of the Department to reduce the incidence of brucellosis in cattle have been augmented by an accelerated program on the part of Federal disease eradication authorities. The zero date of April 1, 1958, established by the State Department of Health, after which all milk sold in New Jersey must come from brucellosis-free herds, will be met without difficulty according to present prospects. Most herd owners have cooperated well in having their herds tested.

In both of these disease eradication programs, herd owners have been indemnified for reactor losses by payments from the State of around $180,000; additional indemnities from the Federal government amounted to some $60,000. The owners recovered

approximately 50 per cent of the appraisal value directly from salvage. Vesicular exanthema in garbage-fed swine presented a serious problem in the previous fiscal year. In the current year of this report, no evidence of old or active lesions of the disease has been found.

The Department performs some of its major services in the marketing field. These include aiding producers to keep well informed through market information and prices on a variety of products; encouraging the use of official grades in the marketing of fruits and vegetables for both fresh market and processing, and in the sale of eggs and milk; assisting farmer-owned produce, egg and poultry, and livestock auction markets; and developing or lending support to programs designed to improve the grading, packaging, transportation and marketing methods for perishable products.

The processing industry alone absorbs the products from more than 70,000 acres. Approximately two-thirds of the total is given over to tomatoes and asparagus. Normally more than 150,000 tons of tomatoes are delivered to canneries on the basis of official grade; during the 1955 season this volume dropped to less than 37,000 tons because of adverse weather. Asparagus delivered to freezing and canning plants totaled well over 50 million pounds, also somewhat below normal.

The first farmer-owned auction market was established in New Jersey nearly 30 years ago. Since that time, a number of others have developed at country points for the sale to wholesale buyers of fruits and vegetables, eggs, poultry and livestock. They have served as a means of moving tremendous quantities of products, frequently at prices higher than those for goods delivered in the primary markets, and at appreciably lower sales cost. During the current year gross sales of all products amounted to nearly 35 million dollars.

The licensing and bonding of dealers in certain farm products, as prescribed by law, has provided a safeguard to farmers in their transactions by protecting them against failure of dealers to pay for purchases. During the year the Department held bonds totaling $5,911,000. Claims against these bonds amounted to only $3,302.50, and all but one claim was settled without requiring liquidation of the bond for settlement. This legislation has been

effective in building up a reputable group of buyers.

Plant pest and disease control work covered a variety of insects and diseases of economic importance, chief among which are Japanese beetle, gypsy moth, white-fringed beetle, forage pests, blueberry and strawberry plant diseases, and bee diseases. It is gratifying to report that the white-fringed beetle, discovered a couple of years ago in and around Vineland, has been virtually eradicated by prompt and effective measures by the State and Federal authorities cooperating. On the other hand, it is evident that the destructive gypsy moth, eradicated from New Jersey 25 or more years ago, is moving in on our northern woods and forests from colonies in New York and Pennsylvania. Airplane spraying was initiated this year in an effort to check its spread, but further annual treatments are anticipated before the insect is eradicated.

Seed certification has long been a basic project of the Department. Through it, high quality seed, true to variety, with high germination value and high yield potential, is made available to farmers, primarily for planting field crops such as corn, wheat, oats, barley and soybeans. This year, in spite of adverse weather, the total amount of grain sealed and certified was nearly 57,000 bushels. In addition, nearly 24,000 bushels of seed potatoes and almost 42,000 pounds of tomato seed, more than 60 per cent of which was of the famous Rutgers variety, were certified.

These are a few of the principal activities and accomplishments of the Department during the fiscal year. Details on these and other projects are to be found in the reports of the various divisions which follow.

ACKNOWLEDGMENT

Each year a brief expression of appreciation is here extended to the staff whose diligence and attention to their respective duties collectively account for the accomplishments of the Department and the progress it makes in rendering a service to agriculture and the citizens of the State. Such an expression is especially fitting in this year of operation under an acting head of the Department, and is hereby made a part of the record.

BUREAU OF LICENSING AND BONDING

The State Department of Agriculture is responsible for the enforcement of the Milk Dealers' Licensing and Bonding Act (Article 1, Chapter 12, Title 4), the Produce Dealers' Licensing and Bonding Act (Article 2, Chapter 11, Title 4), the Cattle Dealers' Licensing Act (Article 1, Chapter 11, Title 4) and the Licensing of Operators of Disposal Plants (P. L. 1953, Chapter 415 (C. 4:5A-1 to C. 4:5A-19) of New Jersey).

MILK DEALERS' LICENSING AND BONDING ACT

The trend toward fewer and larger milk processing operations continued during the year. In most cases the dealers who discontinued the purchasing of milk from New Jersey producers were those whose plants had limited capacity and who found that they could operate more economically by purchasing bottled milk from a larger processor.

The number of milk dealers licensed to purchase milk from New Jersey producers has decreased at the rate of approximately 10 per year for the last five years. At the end of the 1955-56 licensing year there were 168 licensed dealers, distributed as follows:

MILK DEALERS LICENSED AND BONDED
July 1, 1955 to June 30, 1956

County		Licenses Issued	Amount of Bond
Atlantic		3	$ 56,000.00
Bergen		8	151,000.00
Burlington		9	248,000.00
Camden		7	125,000.00
Cape May		3	6,000.00
Cumberland		9	155,000.00
Essex		10	463,000.00
Gloucester		5	59,000.00
Hunterdon		9	369,000.00
Mercer		13	287,000.00
Middlesex		12	278,000.00
Monmouth		21	274,000.00
Morris		12	250,000.00
Ocean		2	55,000.00
Passaic		12	432,000.00
Salem		5	39,000.00
Somerset		8	242,000.00
Union		4	128,000.00
Warren		4	43,000.00
Out-of-State		12	724,000.00
Total:	1955-56	168	$4,384,000.00
	1554-55	179	4,433,000.00
	1953-54	189	4,407,500.00
	1952-53	198	4,517,000.00
	1951-52	210	4,276,000.00

There were no complaints or claims against the bonds filed by licensed milk dealers during the period July 1, 1955-June 30, 1956.

PRODUCE DEALERS' LICENSING AND BONDING ACT

During the year, the number of dealers licensed to purchase live poultry and eggs from New Jersey farmers increased to a substantially greater number than in 1954-55. The increase in work load was handled by the addition of a third investigator to the staff of the Bureau.

The number of dealers who purchase fruits and vegetables did not change markedly from the previous year. The total number of licenses issued under this act was 608 for the year ending April 30, 1956, compared with 551 for the previous year.

PRODUCE DEALERS LICENSED AND BONDED

May 1, 1955 to April 30, 1956

County		Licenses Issued	Amount of Bond
Atlantic		78	$205,000.00
Bergen		6	9,000.00
Burlington		4	10,000.00
Camden		16	43,000.00
Cape May		2	2,000.00
Cumberland		94	238,000.00
Essex		37	102,000.00
Gloucester		31	96,000.00
Hudson		8	15,000.00
Hunterdon		11	17,000.00
Mercer		20	55,000.00
Middlesex		20	47,000.00
Monmouth		50	121,000.00
Morris		3	10,000,00
Ocean		36	54,000.00
Passiac		11	28,000.00
Salem		18	51,000.00
Somerset		5	12,000.00
Sussex		1	3,000.00
Union		2	5,000.00
Warren		8	26,000.00
Out-of-State	(N.Y.)	113	282,000.00
Out-of-State	(Pa.)	28	78,000.00
Out-of-State	(Other)	6	18,000.00
Total	1955-56	608	$1,527,000.00
	1954-55	551	1,391,000.00
	1953-54	364	1,084,500.00
	1952-53	366	1,098,000.00
	1951-52	383	1,149,000.00

Complaints and claims against the bonds of dealers licensed under this Act totalled $3,302.50. With one exception, these complaints were settled without recourse to the bonds.

CATTLE DEALERS' LICENSING ACT

During the period July 1, 1955 to June 30, 1956 licenses were issued to 168 cattle dealers, six less than in the previous licensing year. Applicants for such licenses are not required to provide bonds.

CATTLE DEALERS LICENSED
July 1, 1955 to June 30, 1956

County		Lincenses Issued
Burlington		17
Camden		4
Cape May		1
Cumberland		10
Essex		5
Gloucester		2
Hunterdon		17
Mercer		7
Middlesex		2
Monmouth		13
Morris		8
Ocean		6
Passiac		5
Salem		17
Somerset		9
Sussex		18
Union		7
Warren		15
Out-of-State		5
Total	1955-56	168
	1954-55	174
	1953-54	192
	1952-53	213
	1951-52	224

DISPOSAL PLANT OPERATORS' LICENSING ACT

This law, which became effective January 1, 1954, is somewhat ambiguous as to intent and requires modification following a series of conferences to determine precisely what hazards or objectionable practices it is intended to control and how this can best be accomplished.

In its present form the act requires the licensing of "any place of business where the carcasses of domestic animals or meat packing house refuse are received". A strict interpretation of this terminology would require the licensing of many of the mink farms of the State, where parts of animals, such as calf heads, stomachs, etc., are frequently ground for food. It would also involve the manufacturers of frozen and canned dog foods, who also receive such materials.

For the most part the Act seems to have been devised to control the movement of the carcasses of domestic animals. Its purpose is based on the anthrax outbreak which occurred several years ago. Also, it was intended to control the movement and use of dead pigs during the period when vesicular exanthema was common in New Jersey.

The status of several groups under the law is not clear. One group consists of those who collect fat and bones (trimmings) from hotels, restaurants and butcher shops. All the material they collect comes from animals previously inspected and declared fit for human consumption. A second group are persons who pick up dead animals and haul them to a location which is not a disposal plant, but an assembly point from which the materials are hauled in larger vehicles to a disposal plant.

At the end of the year, plans had been made for several conferences intended to clarify the intent of the law and to plan for its enforcement. Since this is essentially an animal industry problem, the assistance of the personnel of the Division of Animal Industry was requested.

During the year July 1, 1955 to June 30, 1956, eighteen licenses were issued under this Act.

DISPOSAL PLANT OPERATORS LICENSED
July 1, 1955 to June 30, 1956

County		Licenses Issued
Burlington		2
Camden		1
Essex		2
Hudson		3
Monmouth		1
Morris		2
Sussex		3
Out-of-State		4
Total	1955-56	18
	1954-55	17
	1953-54	10

THE NEW JERSEY JUNIOR BREEDERS' FUND

During the fiscal year 1955-56, a total of 123 loans amounting to $13,762.93 were negotiated by members of the New Jersey Junior Breeders' Fund. This is a decline from the previous year of $2,874.31, when loans totaled $16,637.24. The decrease is due almost entirely to a 51 per cent reduction of loans for beef cattle purchases. In the fiscal year 1953-54, 59 loans for a total of $7,070.73 were made for purchasing beef cattle. In 1955-56, 31 loans for $4,134.96 were negotiated. All other type loans were approximately the same as in the previous year.

Charges against the emergency fund for livestock losses incurred by members totaled $650.50 for the year. These losses included one ewe, two dairy heifers, two hogs, and one Angus cow. One dairy heifer was a non-breeder.

Earnings from interest charged on loans provided all members subscriptions to breed journals and awards at the following events:

Flemington State 4-H Dairy Show	$155.00
Cumberland County 4-H Dairy Show	55.00
State FFA Livestock Show	115.00
	$325.00

The New Jersey Agricultural Society continued its awards to members exhibiting the four best fitted animals at the Flemington State 4-H Dairy Show, Cumberland County 4-H Dairy Show, and to winners of the 4-H Meritorious Milk Production Records. The Frelinghuysen Memorial Awards recognizing members whose dairy animals made the highest milk production records in the 4-H and vocational agriculture programs were again presented by Mr. Joseph Frelinghuysen, Jr., at the Annual Dairy Banquet, Farmers Week. Mr. William Haffert has also continued to provide subscriptions to *New Jersey Farm and Garden* for all members of the Fund.

The resources of the New Jersey Junior Breeders' Fund have been available for 35 years to the farm youth of this State. During this time more than 3,900 loans in excess of $334,000.00 have been transacted. The original endowment of $30,000.00 is still intact, a tribute to the integrity and industry of the members, their parents and leaders.

TOTAL AMOUNT LOANED BY COUNTIES

County	Loaned 1955-56	Total Loans Since 1921
Atlantic	$ 303.00	$ 5,131.94
Bergen	200.00	1,081.80
Burlington	725.00	19,120.91
Camden	322.94	2,264.94
Cape May	.....	3,177.43
Cumberland	200.00	11,344.33
Essex	.....	805.30
Gloucester	448.01	9,835.86
Hudson	.....	.....
Hunterdon	975.00	25,063.21
Mercer	1,230.00	34,248.35
Middlesex	1,579.96	40,746.80
Monmouth	1,640.00	31,238.11
Morris	400.00	7,909.00
Ocean	359.55	4,555.55
Passaic	.....	716.25
Salem	365.00	32,411.16
Somerset	509.75	19,525.20
Sussex	2,484.72	54,750.57
Union	.....	200.00
Warren	2,020.00	30,162.23
Total	$13,762.93	$334,288.94

LIVESTOCK LOANS

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
1952-53	102	14,092.50	45	4,203.00	4	275.00	2	190.00	6	350.00	159	19,110.50
1953-54	136	16,462.50	63	5,598.20	....	.....	8	544.40	1	120.00	208	22,725.10
1954-55	63	7,358.95	59	7,070.73	5	180.00	2	130.00	....	.....	129	14,739.68
1955-56	66	8,159.72	31	4,134.96	....	.....	3	157.00	7	445.00	107	12,896.68
Total	2,120	$221,088.17	695	$64,087.98	293	$16,048.78	496	$22,902.88	29	$1,315.28	3,633	$325,443.09

Agricultural Loans*

	Feed Loans		Crossbred Lamb		Crossbred Poultry		Agricultural Production Loans		Fat Barrow Loans		Miscellaneous		Total Agricultural Loans	
	No.	Amount	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	199.08	....	.....	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
1952-53	5	207.85	4	$520.00	1	20.00	....	.....	....	.....	....	.....	10	747.85
1953-54	6	304.79	2	85.00	....	.....	1	200.00	....	.....	....	.....	9	589.79
1954-55	20	772.79	6	405.00	....	.....	6	655.77	1	64.00	....	.....	33	1,897.56
1955-56	6	350.25	7	308.00	1	72.00	....	.....	2	136.00	....	.....	16	866.25
Totals	181	$4,658.95	19	$1,318.00	9	$464.50	34	$1,581.38	18	$815.00	1	$8.02	262	$8,845.85

* 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.

THE NEW JERSEY JUNIOR BREEDERS' FUND
STATEMENT OF PROFITS AND LOSSES
From July 1, 1955, to June 30, 1956

Interest Earned:			
4% on Notes			$1,080.42
(Due but unpaid, $322.63)			
Savings Account, Raritan State Bank			1.54
Total Interest Earned			$1,081.96
Other Profit:			
Calf Emergency (Contributed by sellers; 2% on each loan, effective February 1, 1954, $160.80)		$305.35	
Lamb Emergency		16.50	
Poultry Emergency		2.50	324.35
GROSS PROFIT			$1,406.31
Less Amount Paid for:			
Accounting Fees		$160.00	
Awards		500.00	
Swine Emergency		43.50	
Stationery and Office Supplies		28.00	
Subscriptions		83.75	
Miscellaneous Expenses:			
Annual Report Fee	$ 1.00		
Ribbons for Fairs	17.80		
Dairy Dinner Awards	34.50		
Engrossing Certificates	19.25		
Miscellaneous Expense	75.00	147.55	962.80
NET PROFIT			$ 443.51

THE NEW JERSEY JUNIOR BREEDERS' FUND
STATEMENT OF ASSETS AND LIABILITIES
as at July 1, 1956

Assets

Notes Receivable, Livestock	$21,493.42	
Notes Receivable, Agricultural Loan Fund	1,159.42	$22,652.84
Less:		
Reserve for Bad Debts		693.94
		$21,958.90
Interest Receivable (Due but unpaid)		322.63
Cash, First-Mechanics National Bank, Active Account	$10,453.28	
Cash, Raritan State Bank, Savings Account	103.96	10,557.24
Protested Paper		42.94
TOTAL ASSETS		$32,881.71

Liabilities

Endowments Received		$30,000.00
Allotment for Agricultural Loans		900.00
State of New Jersey, State Board of Agriculture - Federal Loan Fund		425.00
Calf Emergency Receivable (prepaid)		72.00
Lamb Emergency Receivable (prepaid)		19.50
Undivided Profits, July 1,1955	$ 1,021.70	
Net Profit, July 1, 1955 to June 30, 1956	443.51	1,465.21
TOTAL LIABILITIES		$32,881.71

Report of the Division of Information

FRED W. JACKSON, *Director*

The agricultural population of New Jersey is an important minority located in one of the most industrialized and densely populated areas of the United States. Moreover, because of the trend toward decentralization on the part of industry and commerce and their shifts to rural sites, many of such operations are being conducted side by side with agriculture.

In such an environment there is constant need for promoting better understanding and good will between the farmer and the non-farm population of the State. To that end the fostering of a favorable attitude towards New Jersey agriculture through all media of communication at its command continues to be one of the principal functions of the Division of Information. The Division attempts to emphasize the importance of livestock and crop production to the State's economy, interpret the farmer's viewpoint to the consumer, and promote an interest in New Jersey farm products.

In addition, the Division uses the press, radio, and other available channels to keep the farmer and others informed of the services and functions of the Department. Another important duty is its work with various commodity groups in advancing the sale and distribution of the products of New Jersey farms.

In these activities the Division has enjoyed excellent cooperation from New Jersey's daily and weekly newspapers and from its radio stations. Press and radio personnel in adjoining states have also been extremely cooperative.

EDITORIAL ACTIVITIES

News Releases

During the past fiscal year, a total of 245 press releases were prepared and issued to approximately 250 newspapers, radio stations and farm publications serving the New Jersey-New York City-Philadelphia area. Regular inspection of a representative sample of New Jersey dailies and weeklies shows that releases from the Department are widely used in both the agricultural and general news columns.

Releases issued during the fiscal year, classified according to subject matter and division were:

Administration		25
Division of Animal Industry		11
Division of Markets		
Truck Crop News	25	
Other	17	42
Division of Plant Industry		15
Division of Information		
Farmers Week		
Advance	14	
Current	40	
Other	32	86
Office of Milk Industry		43
Miscellaneous		23
TOTAL		245

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

	1955-56	1954-55	1953-54
Administration	25	15	21
Division of Animal Industry	11	17	7
Division of Markets	42	45	41
Division of Plant Industry	15	22	14
Division of Information	86	116	105
Office of Milk Industry	43	27	32
Miscellaneous	23	24	19
TOTALS	245	266	239

Photographs

A continued increase in the number of requests for photographs and other pictorial copy was noted during the past fiscal year. Because of a limited budget for such materials, the Division has not been able to meet all of these requests and to take advantage of this opportunity for additional informational coverage.

However, about 525 glossy prints were sent to newspapers and publications during the past year. A number of these were in special sizes to meet the needs of papers using Fairchild or similar equipment. Thirteen sets of mats were issued, averaging between 25 and 40 mats for each mailing.

Farm Magazines

New Jersey Farm and Garden, with a circulation of 25,000 readers, continues to be an excellent medium for publicizing the activities of the Department, and acknowledgement should be

made of the outstanding cooperation of its editors and staff. In addition to the special January issue, which features Farmers Week, a page is made available each month for an editorial by the Secretary of Agriculture. The Division also prepares each month about 1,500 words of current farm topics. Noteworthy cooperation has also been given by a number of other general farm publications, as well as by magazines devoted to special commodity interests.

Publications and Circulars

The following circulars and reports were edited and published during the past year:

Circular 397	New Jersey Agricultural Statistics, 1944-1954.
Circular 398	Licensed Dealers Under the Milk Dealers' Licensing and Bonding Act, Produce Dealers' Licensing and Bonding Act (Including Live-Poultry and Egg Dealers), Cattle Dealers' Licensing Act and Disposal Plant Operators' Licensing Act.
Circular 399	Facts and Figures - Annual Potato Summary - Crop of 1955.
Report	Thirty-ninth Annual Report of the New Jersey State Department of Agriculture - July 1, 1953-June 30, 1954.
Farm Service News	Six issues - July, September, November, 1955; January, March, May, 1956.
Binding	12 issues of *New Jersey Farm and Garden*, for calendar year of 1955.
Binding	Nine volumes of *Farm Service News* - Vol. 22, No. 1, July, 1947 to Vol. 30, No. 6, May, 1956.

As of June 30, 1956, the following have been edited but delivery has not been completed by the printer:

Folder	For Your Drinking Milk Ask for New Jersey Grade A or Grade B.
Folder	For Your Drinking Milk Ask for New Jersey Premium.
Report	Fortieth Annual Report of the New Jersey State Department of Agriculture - July 1, 1954-June 30, 1955.

Publications prepared in connection with the 1956 Farmers Week were as follows:

1956 Farmers Week Program
Homemakers Program - 1956 Farmers Week
Highlights of Your Convention
Citations for Distinguished Service to New Jersey Agriculture, 1956

Six issues of the Department's bimonthly publication, *Farm Service News*, were issued during the year. Each issue was sent to about 17,000 farm and rural readers throughout the State. The

January issue was devoted entirely to Farmers Week. In March, *Farm Service News* consisted exclusively of a listing of the hatcheries and breeders participating in the Federal-State Poultry Improvement Plan, together with appropriate articles about this project. This eliminated the cost of publishing such a listing in a separate circular.

FARMERS WEEK PUBLICITY

A major project of the Division of Information each year is information work concerned with the annual Farmers Week in Trenton. Advance publicity and coverage of the more than 40 meetings held during this six-day event is the responsibility of the Division, which is also active in Farmers Week arrangements and program planning. In addition, the Division has enjoyed most effective cooperation from press and radio editors, the staff of *New Jersey Farm and Garden* and other agricultural publications, and the editorial staff of the Agricultural Extension Service at Rutgers University.

FARM PRODUCTS PROMOTION

During the past fiscal year the agricultural activities of 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, which has been in effect since 1938, has proved satisfactory to the State agencies concerned as well as to the cooperating farm organizations.

The allotment for agriculture was divided among seven projects. The allotments for each were supplemented by funds furnished by each of the cooperating commodity groups. However, 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, particularly food 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 in their advertisements and releases and to use them as much as possible in their demonstrations.

Acknowledgement again should be made of the cooperation of the members of the home economics staffs of all four of the principal New Jersey utilities. Included on their staffs are about 40 home economics specialists who are responsible for a large number of meetings, exhibits 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 at their own expense consumer leaflets on New Jersey products. One utility concern continued as sponsor of a series of general institutional advertisements in the daily and weekly press 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 the 1955-56 year follow.

The Cooperative Marketing Associations in New Jersey, Inc.

A considerable volume of New Jersey grown fruits and vegetables is marketed through the nine cooperative produce auction markets which are organized in a statewide 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. Advertisements were sponsored in each of these publications, running in July and August 1955, as well as six insertions each in April, May and June 1956. During the 1955 season, a total of more than 1,050 different buyers from 13 states and Canada purchased New Jersey products at the auctions which furnish an outlet for a considerable volume of New Jersey produce. They also establish a price level for many other transactions and so are beneficial in maintaining current market prices.

Blueberry Institute

This group, which publicized and aided in the marketing of a moderate crop of cultivated blueberries, is sponsored by a grower group. The value of the cultivated blueberry crop exceeds that of cranberries or any other small fruit. A small allotment of State funds met the cost of a series of mat releases and trade paper advertisements and a series of photographs of original blueberry recipes.

New Jersey Field Crop Improvement Cooperative Association, Inc.

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 further mention of State-certified soybeans, wheat, oats and barley in season. The advertisements now are on a full year basis and again were carried in 12 issues of *New Jersey Farm and Garden* and in five issues each of two dairy publications.

New Jersey Peach Industry Committee

This statewide organization continued last year with its promotional activities to call attention to the new varieties and the tree-ripened New Jersey peaches now available. 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 at a dinner conference and visit to an orchard. There was an excellent response in terms of newspaper reader column space, editorial mention and time on both radio and television programs. The annual dinner and reception for editors were scheduled in Gloucester and Camden counties with excellent attendance.

New Jersey Apple Institute

The New Jersey growers experienced little serious difficulty in moving the main season varieties of apples, so much of the promotional effort was concentrated again on varieties marketed in the summer and late spring months. Consequently, a series of releases, photographs and recipes was issued in July and August, 1955, illustrating how the Starr and Twenty Ounce varieties could be used by consumers.

In addition, the services of a publicity agent in New York City were 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 representatives of the utilities. Gift packages of Stayman apples were sent to the editors in December and repeated with Rome Beauty apples in March.

A conference and visits to two orchards and dinner were scheduled at the farm of a Cranbury apple grower 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 throughout the winter has been excellent and aided materially in moving the crop. A series of 20 announcements scheduled on the McCANNS AT HOME food hour on WOR again proved very effective in marketing late holdings of Rome Beauty.

New Jersey Poultry and Egg Cooperative Marketing Association, Inc.

A request was received from the group of cooperatives marketing eggs under the New Jersey State Certified label for aid in combating the depressed market situation. An allotment was made to cover the cost of posters and egg carton inserts as part of a promotion program arranged with the stores and milk dealers handling this brand of New Jersey eggs.

New Jersey Sweet Potato Industry Association

This new organization continued for a second year to successfully market improved types of New Jersey sweet potatoes. A request was granted for an allotment of funds which were used principally to provide a series of advertisements in the two main produce trade papers as well as for a series of nine mats of photographs of new sweet potato recipes.

PUBLIC RELATIONS

As in previous years, the Division of Information has continued efforts to further understanding and good will between the farm and both distributor and consumer interests which are so important to the farm economy of New Jersey. Such activities are conducted in a number of fields, many at the request of interested groups.

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 to nearly every farm 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 similar service has been developed for home economics workers to promote the more efficient use of electricity in farm homes.

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 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 1955 tour was postponed until December when the industrial group visited the Mid-Atlantic Farm and Home Show in Atlantic City.

Other activities have included the preparation of special articles, most of them with photographs, for New Jersey publications. Cooperation has been extended frequently to feature writers and regularly to press representatives assigned to the State House in preparing special articles on agriculture.

In response to a request from an overall dairy industry group, a publicity program was prepared and carried through for the Garden State Milk Council. To further advance the interests of the industry, the new organization is now extending its operation on a year-round basis.

Other activities also 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 Mid-Atlantic Farm and Home Show.

Report of the Division of Animal Industry

DR. R. A. HENDERSHOTT, *Director*

REVIEW OF THE YEAR'S ACTIVITIES

This fiscal year was a normal one for the Division. There were no serious outbreaks of livestock diseases noted in the State.

DISEASES OF POULTRY

During the winter of 1955 the poultry industry suffered considerable loss due to respiratory diseases, particularly in Ocean, Monmouth and Cumberland counties.

Fowl typhoid infection, found a year ago on two premises, was diagnosed on four additional premises this year. It continues to appear principally in commercial egg-producing plants. The test for pullorum-typhoid disease has practically eliminated typhoid from our breeding flocks.

Infected flocks are placed under quarantine until exposed birds are marketed for slaughter and the premises thoroughly cleaned and disinfected.

ORNITHOSIS

Ornithosis in turkeys is still a cause for some concern. This disease is transmissible to man and in outbreaks elsewhere in the United States has resulted in infection of personnel in turkey processing plants.

Additional research is urgently needed to provide the necessary tools for eradicating this infection. A number of research experts are working to develop a satisfactory test which will provide a means of screening turkey production flocks and removing carriers of this infection. The United States Department of Agriculture is spending fifty thousand dollars on this problem.

ANTHRAX

Anthrax was diagnosed in 15 animals on 10 premises during the year. Rigid quarantine and sanitary measures were employed along with preventive vaccination of animals remaining in the herd to bring the disease under control. Preventive vaccination was provided farm areas where deemed necessary.

BRUCELLOSIS

Through the wholehearted cooperation of farmers, county agents, the Extension Service, members of the veterinary profession, the Agricultural Research Service and milk distributing companies, New Jersey continues to move toward the goal of complete eradication of this disease. A more detailed discussion will be found in the report of the Bureau of Brucellosis Control.

TUBERCULOSIS

Annual tuberculin tests were applied to all dairy, beef and goat herds of the State during the year, resulting in 0.09 per cent reaction. A high percentage of replacement animals is introduced each year into New Jersey, making annual inspection of cattle and goats for this disease imperative. Details of progress in tuberculosis control is given later in this report by the Bureau of Tuberculosis Control.

VESICULAR EXANTHEMA

There are three important vesicular diseases of livestock of importance. They are foot and mouth disease, vesicular stomatitis and vesicular exanthema.

Foot and mouth disease last appeared in the State in 1914 and 1915. Vesicular stomatitis was last diagnosed in 1926 and vesicular exanthema has not been found since October, 1954.

A good garbage cooking law would be helpful in preventing the spread of the latter. Such laws or regulations are currently being employed in Canada and all of the states except Connecticut and New Jersey.

SCABIES IN SHEEP

During the past few years we have noticed an increase in the number and size of sheep flocks throughout the State. Parasitic diseases constitute one of the problems confronting the sheep owner.

One rather serious external parasitic condition encountered during the year was scabies. Agents of the Division have been instructed to visit and inspect all sheep flocks for this disease. During the year 23 flocks were found infested with scabies. Quarantines are imposed until all sheep on the farm have been dipped in a parasiticide and found free of scab.

EQUINE ENCEPHALOMYELITIS

This once serious disease of horses, particularly widespread in the ocean, bay and lower river counties, continued at extremely low level during the past year.

Preventive vaccination applied during the late spring prior to build up of mosquitoes and biting insects, is effective. Mosquito control, no doubt, has had a salutory effect in keeping cases at a minimum.

INSPECTIONS OF POULTRY MADE BY STATE OF ORIGIN

July 1, 1955 to June 30, 1956

State	Truck Loads	Birds	Approximate Weight in Pounds
Connecticut	157	182,000	785,000
Delaware	802	999,000	4,010,000
Kentucky	13	6,000	65,000
Maryland	19	14,000	95,000
Massachusetts	25	25,000	125,000
New Hampshire	386	390,000	1,930,000
New Jersey	1,853	2,075,000	9,285,000
New York	187	187,000	935,000
North Carolina	32	24,000	160,000
Pennsylvania	717	834,000	3,585,000
Virginia	49	25,000	245,000
West Virginia	137	65,000	685,000
Total	4,377	4,826,000	21,905,000

POULTRY CONDEMNED AT POULTRY TERMINALS

July 1, 1955 to June 30, 1956

1955	Birds Condemned	Approximate Weight in Pounds
July	2,500	10,000
August	1,300	5,200
September	1,600	6,400
October	2,400	9,600
November	2,000	8,000
December	2,300	9,200
1956		
January	1,700	6,800
February	1,800	7,200
March	2,800	11,200
April	1,800	7,200
May	2,600	10,400
June	4,400	21,800
Total	27,200	113,000

FOWL BLOOD-TESTED FOR PULLORUM DISEASE
Number and Per Cent Reacting
July 1, 1955 to June 30, 1956

County	Fowl Tested in Field	Number Reacting	Per Cent Reacting	Fowl Tested in Laboratory	Number Reacting	Per Cent Reacting	Total Fowl Tested	Total Fowl Reacting	Per Cent Reacting
Atlantic	34,751	39	.11	....	....	....	34,751	39	.11
Bergen	19,274	....	....	....	....	....	19,274	....	....
Burlington	11,621	....	....	795	....	....	12,416	....	....
Camden	....	....	....	....	....	....	....	....	....
Cape May	1,248	....	....	....	....	....	1,248	....	....
Cumberland	174,964	37	.02	....	....	....	174,964	37	.02
Essex	....	....	....	....	....	....	....	....	....
Gloucester	45,969	....	....	1,021	....	....	46,990	....	....
Hudson	....	....	....	....	....	....	....	....	....
Hunterdon	117,050	70	.06	18,452	5	.03	135,502	75	.06
Mercer	51,343	2	.004	292	....	....	51,635	2	.004
Middlesex	45,330	....	....	1,265	1	.08	46,595	1	.002
Monmouth	229,558	90	.04	....	....	....	229,558	90	.04
Morris	620	1	.16	....	....	....	620	1	.16
Ocean	215,978	6	.002	1,214	....	....	217,192	6	.003
Passaic	5,158	10	.19	267	....	....	5,425	10	.18
Salem	35,059	1	.003	....	....	....	35,059	1	.003
Somerset	22,610	6	.03	72	....	....	22,682	6	.03
Sussex	6,787	....	....	1,227	1	.08	8,014	1	.01
Union	....	....	....	....	....	....	....	....	....
Warren	6,142	....	....	230	....	....	6,372	....	....
State	1,023,462	262	.03	24,835	7	.03	1,048,297	269	.03
1954-1955-Total	1,013,313	377	.04	34,579	7	.02	1,047,892	384	.04

There were no check tests made in the Division Laboratory during the year.

SHIPMENTS OF POULTRY OUT OF THE COUNTRY

New Jersey poultrymen have been fortunate in obtaining foreign markets for both hatching eggs and breeding stock, in addition to day-old baby chicks, as is evidenced by the following tabulation of shipments made for which health certificates were issued by the Division.

NEW JERSEY EXPORTS OF HATCHING EGGS AND POULTRY

July 1, 1955 to June 30, 1956

Country To Which Consigned	Hatcheries Shipping	Hatching Eggs	Baby Chicks	Cockerels	Pullets	Pigeons
Argentina	1	....	500	....	....	....
Azores	1	....	500	....	....	....
Belgium	1	392	....	....	....	....
British Guiana	1	....	200	....	....	....
British West Indies	4	....	86,900	12,000	200	23
Canada	1	....	525	....	....	....
Greece	1	....	....	120	680	....
Italy	2	1,000	1,400	....	....	....
Lebanon	2	....	500	150	850	....
Monrovia, Africa	1	....	....	....	200	....
Puerto Rico	4	45,000	94,500	....	....	13
Venezuela	1	....	....	4,000	....	....
Totals		46,392	185,025	16,270	1,930	36

SHEEP INSPECTIONS REPORTED

July 1, 1955 to June 30, 1956

County	Total No. Inspections	Total No. Sheep Inspected	Total No. Farms Affected	Total No. Dippings	Total No. Farms Released from Quarantine
Atlantic	1	14	....	....	....
Bergen	2	20	....	....	....
Burlington	30	470	4	4	4
Camden	1	5	....	....	....
Cape May	6	132	....	....	....
Cumberland	9	150	....	....	....
Essex	....	....	....	....	....
Gloucester	8	20	5	7	5
Hudson	....	....	....	....	....
Hunterdon	11	476	....	....	....
Mercer	29	871	....	....	....
Middlesex	8	248	....	....	....
Monmouth	15	392	2	2	2
Morris	7	518	....	....	....
Ocean	6	227	1	2	1
Passaic	7	42	....	....	....
Salem	16	748	3	5	3
Somerset	30	1,504	4	10	4
Sussex	2	19	1	2	1
Union	7	245	1	1	1
Warren	17	1,500	2	4	2
State	212	7,601	23	37	23

LIVESTOCK AUCTION MARKETS

Supervision of the Harris Sales Company, Woodstown, has been continued throughout the year.

WORK PERFORMED AT HARRIS SALES

Cattle Transferred	Lots	Cattle Tuberculin Tested
Local cattle	340	556

LIVESTOCK SOLD AT HARRIS SALES STABLES

July 1, 1955 to June 30, 1956

Lambs	Cattle	Bulls	Calves	Hogs	Goats & Sheep	Steers	Horses	Reactors
1,500	5,003	505	15,980	5,014	934	1,226	414	311

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, 1955 to June 30, 1956

1955	Cattle	Sheep	Calves	Hogs	Horses
July	11,322	23,991	4,457	11,965	2
August	10,786	44,156	8,537	14,262	....
September	11,935	49,089	7,244	17,261	....
October	10,150	57,434	8,483	19,448	1
November	9,552	50,711	5,276	18,191	1
December	9,156	53,015	6,397	20,487	2
1956					
January	9,563	61,959	5,898	23,085	1
February	8,346	36,767	4,430	17,742	....
March	8,427	46,418	2,245	22,225	1
April	9,757	45,533	2,703	19,717	....
May	9,177	29,437	3,735	16,300	1
June	10,289	13,927	6,361	11,584	2
Totals	118,460	512,437	65,766	212,267	11

In addition, livestock is received in the Yards from points in New Jersey and from adjacent states.

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

July 1, 1955 to June 30, 1956

1955	Calves	Sheep	Cows	Bulls	Hogs	Steers
July	282	58	427	38	....	11
August	411	101	728	22	....	35
September	615	14	549	15	145	7
October	639	80	850	22	....	10
November	190	55	782	23	....	23
December	141	20	592	20	....	25
1956						
January	186	39	916	31	....	9
February	181	47	818	24	....	40
March	189	46	781	29	....	27
April	144	5	764	64	....	45
May	132	....	561	102	....	47
June	392	6	402	36	....	19
Totals	3,502	471	8,170	426	145	298

CATTLE IMPORTED AND RELEASED FOR DAIRY AND BREEDING PURPOSES

July 1, 1955 to June 30, 1956

Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Alabama	....	....	....	....	....	....	....	....	....	....	....	1	1
Canada	72	129	76	87	136	90	62	28	37	87	191	245	1,240
Colorado	1	....	1	1	....	....	....	1	....	....	....	....	4
Connecticut	18	3	....	1	7	6	1	....	....	....	7	1	44
Delaware	36	1	....	11	....	5	....	5	....	6	5	12	81
England	....	....	....	....	2	....	....	....	....	....	....	....	2
Florida	1	....	....	....	....	....	....	3	....	....	....	....	4
Georgia	....	....	1	....	....	....	....	....	....	....	....	....	1
Idaho	....	....	....	....	....	....	....	....	....	....	1	....	1
Illinois	2	....	....	....	6	5	2	2	1	1	2	5	26
Indiana	11	....	13	2	....	....	....	....	....	....	5	18	49
Iowa	....	....	....	....	....	....	....	....	4	....	1	8	13
Isle of Jersey	....	....	....	....	....	....	....	....	....	....	17	....	17
Kansas	....	1	....	....	....	1	....	2	....	....	....	....	4
Kentucky	....	....	1	....	....	3	....	....	1	....	....	1	6
Maine	....	....	....	1	....	....	....	....	....	....	....	....	1
Maryland	37	15	24	5	8	12	16	19	1	62	6	14	219
Massachusetts	3	....	....	2	3	6	....	....	....	....	6	2	22
Michigan	99	51	43	129	55	77	40	38	59	55	74	91	811
Minnesota	65	48	20	5	....	....	11	6	....	....	25	2	182
Mississippi	1	....	....	2	....	....	....	2	....	....	1	....	6
Missouri	11	....	....	....	....	6	....	....	5	....	....	....	22
New Hampshire	....	....	....	....	....	1	....	....	....	....	....	....	1
New York	375	288	281	375	378	314	214	214	192	227	226	229	3,313
North Carolina	....	....	....	....	....	....	....	....	....	....	1	....	1
Ohio	38	18	53	43	54	7	1	14	2	26	20	2	278
Oklahoma	....	....	3	....	1	....	....	....	1	1	3	1	10
Pennsylvania	54	56	57	91	60	112	33	22	17	29	37	25	593
Rhode Island	....	1	....	1	....	....	....	....	....	....	....	....	2
South Carolina	....	....	....	1	....	....	....	....	3	....	....	....	4
Scotland	....	1	....	....	....	....	....	....	....	....	....	....	1
Tennessee	....	....	....	1	....	....	....	....	1	....	....	....	2
Texas	1	1	1	17	....	1	....	....	1	1	1	15	39
Vermont	....	....	....	11	....	....	1	....	....	2	8	1	23
Virginia	16	....	2	7	6	3	....	1	....	....	5	5	45
Washington	....	....	....	....	1	....	....	....	....	....	1	1	3
West Virginia	....	....	1	....	....	....	....	....	....	....	....	....	1
Wisconsin	286	271	489	676	678	521	317	349	151	473	460	310	4,981
Totals	1,127	884	1,066	1,469	1,395	1,170	698	706	476	970	1,103	989	12,053

DAIRY AND BREEDING CATTLE UNDER 6 MONTHS OF AGE

IMPORTED AND RELEASED

July 1, 1955 to June 30, 1956

Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Canada	1	....	....	....	....	....	....	....	....	....	....	....	1
Maine	....	....	....	....	....	....	....	....	....	1	....	....	1
Maryland	....	....	....	....	....	....	4	....	....	2	....	....	6
Massachusetts	....	....	....	....	....	....	....	....	....	6	....	....	6
Missouri	1	....	....	....	....	....	....	....	....	....	....	....	1
New York	....	....	....	....	....	....	....	....	4	....	2	....	6
North Carolina	....	....	....	....	....	....	....	5	....	....	....	....	5
Pennsylvania	....	....	....	....	....	3	....	2	....	....	1	....	6
Ohio	....	....	....	....	14	....	....	....	....	....	....	....	14
South Carolina	....	....	....	1	....	....	....	....	....	....	....	....	1
Vermont	....	....	....	....	....	....	....	....	1	....	....	....	1
Totals	2	....	....	1	14	3	4	7	5	9	3	....	48

FEEDER STEERS IMPORTED AND RELEASED

July 1, 1955 to June 30, 1956

Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Canada	....	....	....	....	50	....	....	....	....	....	....	....	50
Florida	....	....	....	....	....	....	....	....	....	18	146	1	165
Idaho	....	....	....	....	....	59	....	....	....	....	....	....	59
Illinois	....	....	....	40	40	....	....	....	....	....	....	....	80
Lancaster, Pa.	86	42	172	130	168	47	72	8	18	195	118	211	1,267
Maryland	....	....	....	4	4	6	....	....	14	....	....	....	28
New York	....	....	....	....	....	....	....	....	....	....	4	....	4
Pennsylvania	....	....	....	....	43	74	....	40	102	....	....	....	259
Texas	60	....	....	....	....	....	....	....	....	....	....	....	60
Wyoming	....	....	....	....	101	....	....	....	....	....	....	....	101
Totals	146	42	172	174	406	186	72	48	134	213	268	212	2,073

SUMMARY OF INSHIPMENTS
July 1, 1955 to June 30, 1956

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Total cattle imported	1,127	884	1,066	1,469	1,395	1,170	698	706	476	970	1,103	989	12,053
Calves under 6 months imported	2	....	....	1	14	3	4	7	5	9	3	....	48
Total dairy and breeding cattle imported July 1955 to June 1956	1,129	884	1,066	1,470	1,409	1,173	702	713	481	979	1,106	989	12,101
Total dairy cattle imported July 1954 to June 1955	1,401	1,313	1,450	1,049	1,358	931	699	659	610	812	1,323	1,888	13,493
Feeder steers imported July 1955 to June 1956	146	42	172	174	406	186	72	48	134	213	268	212	2,073
Feeder steers imported July 1954 to June 1955	142	54	109	216	122	66	203	103	257	291	300	169	2,032
Total dairy cattle and feeder steers imported July 1955 to June 1956	1,275	926	1,238	1,644	1,815	1,359	774	761	615	1,192	1,374	1,201	14,174
Total dairy cattle and feeder steers imported July 1954 to June 1955	1,543	1,367	1,559	1,265	1,480	997	902	762	867	1,103	1,623	2,057	15,525

RECORD OF BLOOD TESTS MADE ON INSHIPPED ANIMALS

July 1, 1955 to June 30, 1956

Origin	Lots Bled	Cattle Bled	Reactors Number	Resulting Percentages
Alabama	1	1	....	....
Canada	109	1,203	3	.25
Colorado	4	4	....	....
Connecticut	15	48	....	....
Delaware	12	52	....	....
Florida	1	1	....	....
Idaho	1	1	....	....
Illinois	11	19	....	....
Indiana	5	17	....	....
Iowa	1	4	....	....
Ireland	2	2	....	....
Isle of Jersey	1	17	....	....
Kansas	2	3	....	....
Kentucky	3	5	....	....
Maryland	61	177	1	.56
Massachusetts	15	30	1	3.33
Michigan	50	739	3	.41
Minnesota	13	169	....	....
Mississippi	2	3	....	....
Missouri	8	23	....	....
Nebraska	1	1	....	....
New Hampshire	4	6	....	....
New York	450	2,940	14	.48
North Carolina	1	1	....	....
North Dakota	1	1	....	....
Ohio	25	232	....	....
Oklahoma	7	10	1	10.00
Oregon	1	1	....	....
Pennsylvania	131	541	3	.55
Rhode Island	2	2	....	....
South Carolina	1	3	....	....
Texas	10	37	....	....
Vermont	6	46	1	2.17
Virginia	19	42	....	....
Washington	4	7	....	....
West Virginia	1	1	....	....
Wisconsin	242	4,933	2	.04
Totals	1,223	11,322	29	.26

Following is a comparison of the number of cattle shipped into New Jersey during the past five years. These figures include dairy, breeding and feeding cattle and calves.

1951-52	1952-53	1953-54	1954-55	1955-56
19,565	16,339	15,548	15,525	14,174

CATTLE SHIPPED OUT OF NEW JERSEY
July, 1955 to June, 1956

1955	Lots from Herds Under Supervision	Animals from Herds Under Supervision
July	64	173
August	199	326
September	269	388
October	268	438
November	208	288
December	144	229
1956		
January	124	193
February	92	119
March	50	144
April	186	458
May	223	389
June	281	507
Totals	2,108	3,652

BUREAU OF TUBERCULOSIS ERADICATION

The following figures compare tuberculosis incidence at the close of the 1954-1955 and 1955-1956 fiscal years.

	1954-55	1955-56
Animals tested	228,919	216,388
Reactors disclosed	241	190 plus 2 goats
Per cent reaction	.11	.09
Infected herds	96	88

Fewer tests were conducted during 1955-1956 than during the preceding year. During 1955-1956, a large majority of the reactors disclosed in previously accredited herds failed to present lesions of tuberculosis when slaughtered. This situation materially reduced the need for retests of the affected herds in order to restore them to an accredited status.

STATUS OF HERDS DISCLOSING REACTIONS

Month	Reactors Disclosed	Accredited Herds	Accredited Reactors	Infected Herds	Infected Reactors	Initial Herds	Initial Reactors	Tot. Herds Disclosing Reactors	Herd Addition Reactors
July	2 goats	1	2	0	0	0	0	1	0
August	2	0	0	1	1	1	1	2	1
September	3	3	3	0	0	0	0	3	1
October	16	11	16	0	0	0	0	11	1
November	26	17	25	1	1	0	0	18	6
December	18	14	17	1	1	0	0	15	7
January	39	26	33	2	5	1	1	29	6
February	21	14	21	0	0	0	0	14	9
March	29	18	26	1	1	1	2	20	10
April	25	18	18	3	7	0	0	21	7
May	7	6	6	0	0	1	1	7	1
June	4	0	0	1	4	0	0	1	0
Total	192	128	167	10	20	4	5	142	49

Of the 192 reactions disclosed, 49 or 25.52 per cent were herd additions reacting at the time of their first test in the State and were not eligible for indemnity. These inshipped reactors continue, percentagewise, quite high and are believed to influence the statistical reaction picture for the State considerably.

A large percentage (86.98) of the total reactions were disclosed in accredited herds. In addition, most of the "no visible lesion" cases (80.22 per cent among all 192 reactors) were found in animals from accredited herds. These reactions, encountered in herds of various periods of accreditation, constitute a puzzling problem for which there does not seem to be a safe solution; the animals present tissue deviations at the point of the tuberculin injection. In this State all deviations are looked upon as being caused by tuberculosis. This is felt to be the only safe policy to avoid possible extensive outbreaks. There were no extensive breaks encountered during the year; reactions ranged from one to five in the disclosing herds.

A rather unusual reactor-disclosing herd was that of Vojtech Jozefovic, Hackettstown. This herd, comprised of 100 animals, was advertised for sale on March 19. Prior to the date of sale, the owner requested that the herd be tuberculin and blood tested. The tests resulted in three reactors, causing the herd to be designated as an infected herd. On March 19, due to a snow storm, the sale was postponed until March 30.

On March 30, representatives from the Division of Animal Industry appeared at the farm and outlined the conditions under which this infected herd could be sold:

1. The herd could be consigned to slaughter in its entirety.
2. It could be sold intact, to be held by the purchaser under an infected herd status pending the herd's passing three clean tests.
3. If the individual animals were sold, the purchaser's herd would assume the same infected herd status as the Jozefovic herd and the purchaser's entire herd would be held in quarantine pending its passing three clean tests.

When the owner was acquainted with these conditions, the public sale was cancelled and an arrangement made for the private sale of the animals under the stipulations outlined by the State representatives. The disposition of the herd has proven quite

satisfactory and all animals have passed one clean test since the reaction disclosures.

Another herd which proved quite puzzling was that of Henry Douma, Hackettstown, comprised of 104 animals. Several animals presented deviations or reactions of various size or degree when tested in January, 1956. Two of the animals which responded most positively, were designated as reactors. These animals, when slaughtered, failed to present lesions of tuberculosis. The herd, then comprised of 108 animals, was retested in March when six animals presented from slight to medium deviations. None were designated as reactors. The herd, then numbering 82 animals, was again retested in May. Test results were again quite confusing; 20 animals presented deviations. Of this number, two animals showing characteristic reactions, one animal that had shown a slight deviation in the last three tests, and one old cow considered to be possibly affected although not reacting, were designated as reactors. When slaughtered, two of the four designated reactors presented from slight to extensive lesions of tuberculosis.

During the year the State-employed veterinarians conducted 21.09 per cent of all tests and the Federal veterinarians, 2.02 per cent. Veterinary practitioners, to whom work was assigned by the supervisors, conducted 76.89 per cent. In 1954-1955, 21.77 per cent of the tests were made by State veterinarians, 4.43 per cent by Federal veterinarians and 73.80 per cent by practitioners. State veterinary personnel are called upon to perform duties other than in the tuberculosis control fields. These include rebleeding inshipments, investigating disease outbreaks and making indicated vaccinations.

Eight counties were reaccredited during the year; Hudson County was due but does not have any cattle at this time. Over the two-year period, the eight counties reaccredited showed a decrease of 517 herds and 7,554 cattle. The most marked percentage decrease in cattle took place in Union County due almost entirely to the sale of the large Tuscan Dairy. However, the decrease in herds and cattle throughout the State is quite evident.

COUNTIES LISTED FOR REACCREDITATION

Union County				
July 1, 1953		58 herds		1,283 cattle
July 1, 1955		39 herds		299 cattle
	Decrease	19 herds	Decrease	984 cattle
Morris County				
August 1, 1953		591 herds		11,395 cattle
August 1, 1955		524 herds		10,995 cattle
	Decrease	67 herds	Decrease	400 cattle
Camden County				
November 1, 1953		176 herds		1,965 cattle
November 1, 1955		137 herds		1,692 cattle
	Decrease	39 herds	Decrease	273 cattle
Cumberland County				
November 1, 1953		596 herds		6,925 cattle
November 1, 1955		476 herds		6,071 cattle
	Decrease	120 herds	Decrease	854 cattle
Atlantic County				
February 1, 1954		105 herds		650 cattle
February 1, 1956		95 herds		438 cattle
	Decrease	10 herds	Decrease	212 cattle
Cape May County				
February 1, 1954		83 herds		478 cattle
February 1, 1956		63 herds		409 cattle
	Decrease	20 herds	Decrease	69 cattle
Burlington County				
June 1, 1954		821 herds		25,822 cattle
June 1, 1956		710 herds		23,299 cattle
	Decrease	111 herds	Decrease	2,523 cattle
Salem County				
June 1, 1954		894 herds		18,875 cattle
June 1, 1956		763 herds		16,636 cattle
	Decrease	131 herds	Decrease	2,239 cattle

SUMMARY FOR 1955-1956

On June 30, 1956 there were 8,488 herds of 194,937 head of cattle under supervision, a decrease of 995 herds and 9,683 cattle from the number recorded at the beginning of the fiscal year.

During the year initial tests were conducted on 509 herds of 4,303 cattle, resulting in the disclosure of eight reactors or 0.19 per cent reaction. The percentage of reaction disclosed on tests of cattle added to herds under supervision was 2.32 or 44 reactors in 1,895 cattle tested.

A total of 216,388 tuberculin tests was conducted, resulting in 190 reactors or 0.09 per cent reaction as compared with 0.11 per cent a year ago. Of the 190 reactors disclosed, 141 were eligible for indemnity; of those eligible, 19 were registered and 122 grade animals.

10-YEAR SUMMARY OF TUBERCULIN TESTING

	Herds Under Supervision	Animals Under Supervision	Tests Conducted	Reactors Resulting	Per Cent Reaction
1946-1947	14,347	202,034	255,447	949	.37
1947-1948	13,478	201,238	248,997	411	.17
1948-1949	12,692	200,817	236,937	378	.16
1949-1950	11,962	205,105	230,187	242	.11
1950-1951	11,273	200,496	227,980	298	.13
1951-1952	10,683	207,959	232,611	234	.10
1952-1953	10,415	215,660	239,489	176	.07
1953-1954	9,797	214,212	238,747	245	.10
1954-1955	9,483	204,620	228,919	241	.11
1955-1956	8,488	194,937	216,388	190	.09

In 1955-1956 we imported 12,101 head of dairy cattle, of which 1,895 were retested as herd additions, disclosing 44 reactors. In 1954-1955, 13,493 head of dairy cattle were imported and 2,472 were subjected to herd addition tests, resulting in 58 reactors.

The amount of state indemnity paid during this fiscal year for reactors condemned decreased from an average of $84.21 for the fiscal year 1954-1955 to $82.83 for 1955-1956. During the year 12,101 dairy cattle and 2,073 steers - a total of 14,174 head - were imported as compared with a total of 15,525 during the previous year, a decrease of 1,351.

CATTLE TUBERCULIN TESTED UNDER ACCREDITED HERD PLAN

July 1, 1955 to June 30, 1956

	Lots	Registered Animals	Grade Animals	Total
INITIAL TESTS				
Tested	509	521	3,782	4,303
Reacted		1	7	8
Percentage of Reactors:		.19		
HERD ADDITION TESTS				
Tested	540	59	1,836	1,895
Reacted		1	43	44
Percentage of Reactors:		2.32		
OTHER TESTS				
Tested	8,082	38,394	171,796	210,190
Reacted		15	123	138
Percentage of Reactors:		.07		
Tested				216,388
Reacted				190
Percentage of Reactors				.09
Percentage of Reactors Based on Cattle Population				.10

STATE INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST
July 1, 1955 to June 30, 1956

Class of Cattle	Animals	Amount Paid	Average State Indemnity Paid Per Head
Registered	19	$ 2,664.54	$140.24
Grade	122	9,015.88	73.90
Registered and Grade	141	$11,680.42	82.84

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO TUBERCULIN TEST
July 1, 1955 to June 30, 1956

Class of Cattle	Animals	Amount Paid	Average Salvage Received Per Head
Registered	19	$ 2,355.88	$123.99
Grade	122	12,856.87	105.38
Registered and Grade	141	$15,212.75	107.89

FEDERAL INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST
July 1, 1955 to June 30, 1956

Class of Cattle	Animals	Amount Paid	Average Federal Indemnity Paid Per Head
Registered	19	$ 900.44	$47.39
Grade	122	3,041.71	24.93
Registered and Grade	141	$3,942.15	27.96

Total amount received by owners for reactors (Sum of salvage, Federal and State Indemnity)	$30,835.32
Average amount received per head by owners for reactors	$ 218.69

TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS
July 1, 1955 to June 30, 1956

County	Amount Paid
Burlington	$ 479.10
Cumberland	75.00
Gloucester	75.00
Hunterdon	1,517.85
Mercer	150.00
Middlesex	150.00
Morris	1,100.62
Ocean	75.00
Salem	825.00
Somerset	600.00*
Sussex	4,350.00
Warren	2,282.85
State	$11,680.42

* In addition $12.50 State indemnity was paid in July, 1955 for two goats condemned on tuberculin test in the herd of Thurman Lawson, Somerville. No salvage or federal indemnity was paid.

TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS

From Beginning of Accredited Herd Work in 1916 to June 30, 1956

County	Amount Paid
Atlantic	$ 10,229.81
Bergen	37,793.59
Burlington	531,898.05
Camden	19,452.55
Cape May	10,954.64
Cumberland	85,420.63
Essex	40,686.29
Gloucester	67,306.56
Hudson	4,455.78
Hunterdon	378,101.84
Mercer	191,502.90
Middlesex	85,743.88
Monmouth	143,474.25
Morris	165,820.86
Ocean	34,349.08
Passaic	37,153.60
Salem	384,270.17
Somerset	230,030.04
Sussex	1,071,144.17
Union	40,867.91
Warren	403,416.23
State	$3,974,072.83

INFECTED HERD RECORD

June 30, 1956

County	Infected Herds	Cattle
Burlington	4	155
Cumberland	1	5
Gloucester	1	23
Hunterdon	14	552
Mercer	3	141
Middlesex	2	68
Morris	20	900
Ocean	1	3
Salem	10	632
Somerset	4	168
Sussex	8	581
Warren	20	1,079
State	88	4,307

HERDS AND CATTLE UNDER STATE AND FEDERAL SUPERVISION
TUBERCULIN TESTS MADE AND REACTORS DISCLOSED

County	Herds Under Supervision June 30, 1956	Herds Fully Accredited June 30, 1956	Cattle Under Supervision June 30, 1956			Tuberculin Tests Made July 1, 1955 to June 30, 1956	Reactors Disclosed	Per Cent Infection
			Registered	Grade	Total			
Atlantic	96	72	34	406	440	492	....	....
Bergen	78	64	264	567	831	923	....	....
Burlington	709	642	3,449	19,853	23,302	24,925	10	.04
Camden	138	122	433	1,230	1,663	918	....	....
Cape May	60	56	76	333	409	409	....	....
Cumberland	452	406	566	5,192	5,758	5,238	1	.02
Essex	40	36	291	552	843	800	....	....
Gloucester	515	474	1,139	4,381	5,520	6,027	1	.02
Hudson	....	....	....	....	....	....	....	....
Hunterdon	1,307	1,196	5,566	24,325	29,891	32,500	24	.07
Mercer	378	354	2,857	4,879	7,736	8,200	4	.05
Middlesex	358	301	103	5,652	5,755	9,089	3	.03
Monmouth	570	528	3,056	5,700	8,756	8,449	....	....
Morris	509	415	2,477	8,440	10,917	12,855	30	.23
Ocean	122	107	168	877	1,045	1,153	1	.09
Passaic	67	64	31	483	514	579	....	....
Salem	764	687	1,398	15,272	16,670	19,649	14	.07
Somerset	504	462	4,066	8,146	12,212	13,097	6	.05
Sussex	876	761	5,793	28,816	34,609	39,915	60	.15
Union	33	28	17	219	236	24	....	....
Warren	912	804	2,153	25,677	27,830	31,146	36	.12
State	8,488	7,579	33,937	161,000	194,937	216,388	190	.09

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

July 1, 1955 to June 30, 1956

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
		TESTED		REACTORS			TESTED		REACTORS			TESTED		REACTORS	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
1955															
July	9	6	164	....	....	2	1	5	....	....	27	101	1,002	....	....
August	8	70	79	1	....	....	....	5	....	....	25	59	896	....	1
September	3	2	5	....	....	1	6	....	....	....	101	87	1,655	....	1
October	12	4	24	....	....	....	....	....	....	....	200	571	4,203	....	4
November	13	17	15	....	1	1	....	23	....	3	188	2,185	4,095	....	1
December	19	60	345	....	....	1	2	4	....	2	167	788	4,053	....	....
1956															
January	20	16	41	....	....	3	....	24	....	....	172	870	3,596	....	7
February	17	5	36	....	....	2	....	20	....	....	147	717	3,611	2	....
March	16	3	57	....	....	....	....	12	....	2	239	1,041	4,951	....	4
April	15	2	176	....	....	....	....	....	....	....	127	1,389	3,219	1	5
May	26	27	78	....	1	....	....	13	....	....	152	886	2,925	1	....
June	12	....	47	....	....	....	2	8	....	....	91	117	1,219	4	....
Total	170	212	1,067	1	2	10	11	114	....	7	1,636	8,811	35,425	8	23
Per Cent Reaction				.47	.19				....	6.14				.09	.06
Average Per Cent Reaction				.23					5.60					.07	

CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ON THE STAFF OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

July 1, 1955 to June 30, 1956

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
		TESTED		REACTORS			TESTED		REACTORS			TESTED		REACTORS	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
1955															
July	1	....	1	....	....	....	....	....	....	....	12	....	490	....	....
August	2	....	3	....	....	....	....	3	....	....	2	....	59	....	....
September	6	....	9	....	....	....	....	....	....	....	5	....	127	....	....
October	2	1	3	....	....	1	....	3	....	....	5	4	186	....	....
November	....	....	....	....	....	....	....	....	....	....	1	....	42	....	....
December	2	....	29	....	....	....	....	....	....	....	28	104	643	....	....
1956															
January	2	....	2	....	....	....	....	....	....	....	8	4	163	....	....
February	....	1	1	....	....	....	....	....	....	....	8	84	412	....	....
March	2	....	16	....	....	....	....	....	....	....	18	423	541	....	....
April	....	....	....	....	....	....	....	....	....	....	14	3	382	....	....
May	4	6	6	....	....	....	....	1	....	1	16	210	209	....	....
June	4	....	10	....	....	....	....	....	....	....	25	....	191	....	....
Total	25	8	80	....	....	1	....	7	....	1	142	832	3,445	....	....
Per Cent Reaction				....	....				....	14.29				....	....
Average Per Cent Reaction				....						14.29				....	

CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ACCREDITED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE

July 1, 1955 to June 30, 1956

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
		TESTED		REACTORS			TESTED		REACTORS			TESTED		REACTORS	
1955	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
July	1	....	1	....	....	32	1	102	....	....	58	784	352	....	....
August	4	2	34	....	....	51	7	96	....	....	51	379	124	....	....
September	12	34	60	....	....	63	2	401	....	1	285	1,300	3,249	....	1
October	18	5	217	....	....	55	3	149	....	1	579	1,867	13,862	1	10
November	21	2	199	....	....	26	2	85	....	2	554	2,543	11,484	2	17
December	52	32	405	....	....	43	6	136	....	5	731	4,140	16,767	....	11
1956															
January	42	6	380	....	2	40	....	123	....	3	894	3,931	20,922	3	24
February	32	4	235	....	....	52	4	132	1	8	793	3,552	16,971	....	10
March	43	3	409	....	2	46	8	179	....	8	783	3,838	19,136	....	13
April	40	94	345	....	....	45	....	130	....	7	985	3,701	20,790	1	11
May	39	86	297	....	1	53	1	131	....	....	512	1,892	7,815	....	3
June	10	33	53	....	....	23	14	51	....	....	79	824	1,454	....	....
Total	314	301	2,635	....	5	529	48	1,715	1	35	6,304	28,751	132,926	7	100
Per Cent Reaction				....	.19				2.08	2.04				.02	.08
Average Per Cent Reaction				.17					2.04					.07	

SIX YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

County	July, 1955 to June, 1956					July, 1954 to June, 1955				
	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	440	....	....	492	....	516	....	....	298	....
Bergen	831	....	....	923	....	1,020	....	....	1,138	....
Burlington	23,137	10	.04	24,925	.04	24,667	26	.11	25,280	.10
Camden	1,616	....	....	918	....	1,751	....	....	1,854	....
Cape May	409	....	....	409	....	434	....	....	325	....
Cumberland	5,748	1	.02	5,238	.02	6,232	6	.10	6,539	.09
Essex	835	....	....	800	....	854	....	....	860	....
Gloucester	5,460	1	.02	6,027	.02	6,281	1	.02	5,315	.02
Hudson	....	....	....	....	....	....	....	....	36	....
Hunterdon	29,900	24	.08	32,500	.07	31,961	15	.05	32,693	.05
Mercer	7,593	4	.05	8,200	.05	8,275	4	.05	8,619	.05
Middlesex	5,679	3	.05	9,089	.03	5,795	....	....	8,237	....
Monmouth	8,802	....	....	8,449	....	9,579	17	.18	11,618	.15
Morris	10,670	30	.27	12,855	.23	10,887	20	.18	12,896	.16
Ocean	1,082	1	.10	1,153	.09	1,151	1	.09	1,206	.08
Passaic	499	....	....	579	....	572	....	....	534	....
Salem	16,725	14	.08	19,649	.07	17,507	28	.16	19,458	.14
Somerset	12,105	6	.05	13,097	.05	12,714	9	.07	13,473	.07
Sussex	34,628	60	.17	39,915	.15	35,708	83	.23	43,799	.19
Union	218	....	....	24	....	299	....	....	979	....
Warren	27,724	36	.13	31,146	.12	28,417	31	.11	33,762	.09
State	194,101	190	.10	216,388	.09	204,620	241	.12	228,919	.11

SIX YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

County	July, 1953 to June, 1954					July, 1952 to June, 1953				
	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	658	....	....	749	....	675	....	....	439	....
Bergen	1,291	....	....	1,292	....	1,257	....	....	1,296	....
Burlington	25,794	16	.06	27,668	.06	26,766	11	.04	27,303	.04
Camden	2,007	1	.05	1,837	.05	2,002	....	....	2,007	....
Cape May	478	....	....	986	....	501	....	....	514	....
Cumberland	6,828	4	.06	5,950	.07	7,131	5	.07	7,435	.07
Essex	748	....	....	771	....	786	....	....	838	....
Gloucester	6,544	5	08	7,189	.07	6,783	1	.01	7,086	.01
Hudson	37	....	....	37	....	27	....	....	29	....
Hunterdon	32,493	14	.04	34,271	.04	31,735	16	.05	33,372	.05
Mercer	8,593	2	.02	8,995	.02	8,468	2	.02	9,229	.02
Middlesex	5,929	3	.05	9,301	.03	6,728	1	.01	9,392	.01
Monmouth	10,055	3	.03	12,362	.02	10,283	6	.06	11,761	.05
Morris	11,708	27	.23	13,346	.20	11,407	35	.31	12,874	.27
Ocean	1,183	....	....	1,271	....	1,250	....	....	1,361	....
Passaic	792	....	....	1,372	....	774	....	....	733	....
Salem	18,873	30	.16	21,720	.14	19,454	29	.15	22,509	.13
Somerset	13,234	7	.05	14,562	.05	14,336	5	.03	15,206	.03
Sussex	36,821	110	.30	41,758	.26	36,059	45	.12	41,284	.11
Union	1,083	....	....	1,849	....	1,283	....	....	2,408	....
Warren	29,063	23	.08	31,461	.07	27,955	20	.07	32,413	.06
State	214,212	245	.11	238,747	.10	215,660	176	.08	239,489	.07

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	....	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

GOATS

TUBERCULOSIS

County	Under Supervision June 30, 1956		Fully Accredited June 30, 1956		Number Tested July, 1955 to June, 1956	
	Herds	Goats	Herds	Goats	Herds	Goats
Atlantic	14	103	10	97	14	103
Bergen	21	102	16	92	5	46
Burlington	12	60	5	40	13	67
Camden	9	30	4	22	3	11
Cape May	1	2	....	....	1	7
Cumberland	5	43	4	42	2	39
Essex	4	55	4	55	2	52
Gloucester	31	71	21	49	29	65
Hudson	....	....	....	....	....	....
Hunterdon	35	370	23	301	37	445
Mercer	11	37	9	33	6	23
Middlesex	14	56	9	50	15	80
Monmouth	23	125	17	102	25	126
Morris	41	279	30	253	19	224
Ocean	10	24	1	2	7	19
Passaic	11	78	6	58	8	69
Salem	12	51	4	9	12	52
Somerset	42	467	25	407	48	796
Sussex	8	69	5	60	3	20
Union	2	5	2	5	....	....
Warren	16	101	10	69	4	46
State	322	2,128	205	1,746	253	2,290

BRUCELLOSIS

Atlantic	13	101	7	81	12	100
Bergen	20	100	11	75	5	45
Burlington	11	51	4	30	8	41
Camden	8	23	1	7	5	17
Cape May	2	9	....	....	1	7
Cumberland	5	35	3	32	2	31
Essex	4	52	4	52	2	48
Gloucester	34	93	16	32	19	36
Hudson	....	....	....	....	....	....
Hunterdon	42	368	21	329	39	433
Mercer	11	35	7	28	6	24
Middlesex	15	68	8	46	13	84
Monmouth	33	134	11	67	30	143
Morris	37	257	24	221	17	188
Ocean	9	23	....	....	9	35
Passaic	12	71	8	57	9	93
Salem	12	38	5	12	8	40
Somerset	43	426	26	378	40	570
Sussex	7	58	4	43	3	3
Union	4	18	3	16	....	....
Warren	19	74	7	38	7	47
State	341	2,034	170	1,544	235	1,985

BUREAU OF SWINE DISEASE CONTROL

VESICULAR EXANTHEMA

At the beginning of the fiscal year there were 453 garbage-feeding hog farms in the State, of which 35 had been released from quarantine, because they were now cooking garbage or had resorted to feeding grain. During the fiscal year 122 garbage-feeding farms started cooking garbage or feeding grain and were no longer under quarantine. In addition, 30 grain-feeding farms, located in quarantine areas, were released, making a total of 152 farms released during the year. Of the 122 garbage feeders removed from quarantine, six have been sold and 11 have returned to feeding raw garbage. At the end of the fiscal year there were 136 garbage feeders properly cooking and nine feeders who turned to the feeding of grain, making a total of 145 former raw garbage feeders who were released from quarantine.

In addition to the individual farms released there have been areas in the State released as follows:

All of Hunterdon County, excepting Lebanon Township.
All of Bergen and Essex counties.
All of Cape May County, excepting one small area in Lower Township.
Upper Freehold Township, Monmouth County.

Following townships in Gloucester County:

East Greenwich	South Harrison	Washington
Elk	Franklin	Woolwich
Greenwich	West Deptford	Harrison
Logan		

Following townships in Burlington County:

Medford	Easthampton	Mt. Laurel
Mansfield	Bass River	Shamong
Chesterfield	Springfield	Delran
Tabernacle	Washington	

Voorhees Township, Camden County.

Areas presently under quarantine are:

All of Hudson, Union, Middlesex, Ocean, Atlantic and Morris counties.
All of Monmouth, excepting Upper Freehold Township.
Lebanon Township, Hunterdon County.
Deptford, Mantua, Monroe and Glassboro townships, Gloucester County.
All of Camden County, excepting Voorhees Township.
All of Burlington County, excepting released townships listed above.

The following counties were never quarantined:

Sussex	Warren	Somerset
Passaic	Mercer	Salem
Cumberland		

All swine movements, either interstate or intrastate, must be accompanied by a permit issued by an authorized agent of the Division. During the year there was one prosecution of a swine movement violation. In July, Ben Schatzman, Somerville, was cited for six swine movement violations. These violations were mainly for the movement of swine from farm to farm, from quarantined areas to non-quarantined areas, and for moving swine interstate with improper or no permits. A hearing was held in September in the office of William C. Lynn, Acting Secretary of Agriculture. The respondent and his attorney admitted guilt to four of the violations. The hearing resulted in a determination fining Schatzman $100.00 for each admitted violation or a total of $400.00.

Personnel engaged in swine disease control activities make semi-monthly inspections of all garbage-feeding farms, periodically inspect grain-feeding farms, and act in an advisory capacity in the cooking and other phases of garbage-feeding operations. In addition to the State personnel, the Federal Government has assigned two and three veterinarians for full or part time duty and from eight to eleven inspectors and enforcement personnel to swine disease control work in New Jersey.

No evidence of old or active lesions of vesicular exanthema has been encountered in New Jersey since October, 1954, but every precaution continues to be taken to prevent the possible introduction of any vesicular infection, including foot and mouth disease, into the State.

HERDS AND SWINE UNDER INSPECTION

June 30, 1956

	NON-INFECTED						INFECTED			
			No Garbage Fed Herds		No. Swine in Garbage Fed Herds					
County	No. Grain Fed Herds	No. Swine in Grain Fed Herds	Raw	Cooked	Raw	Cooked	Inf. Herds Fed Garbage	No. Swine in Inf. Herds Feeding Garbage	TOTALS Herds	Swine
Atlantic	79	2,709	44	3	4,960	1,510	....	....	126	9,179
Bergen	19	667	....	5	....	4,306	....	....	24	4,973
Burlington	258	5,110	25	15	2,708	14,010	....	....	298	21,828
Camden	154	1,319	9	7	921	2,150	....	....	170	4,390
Cape May	106	2,442	30	3	2,974	650	....	....	139	6,066
Cumberland	362	2,679	6	2	728	500	....	....	370	3,907
Essex	9	314	2	....	631	....	....	....	11	945
Gloucester	617	3,985	19	77	7,420	80,061	....	....	713	91,466
Hudson	....	....	21	10	26,214	39,743	....	....	31	65,957
Hunterdon	413	7,150	2	2	1,325	3,600	....	....	417	12,075
Mercer	116	2,261	10	1	1,131	102	....	....	127	3,494
Middlesex	125	3,262	11	2	981	185	....	....	138	4,428
Monmouth	363	5,669	41	6	1,819	6,592	....	....	410	14,080
Morris	166	1,611	16	1	6,678	100	....	....	183	8,389
Ocean	93	990	11	1	433	1,200	....	....	105	2,623
Passaic	4	9	2	....	72	....	....	....	6	81
Salem	679	6,242	3	....	35	....	....	....	682	6,277
Somerset	165	3,649	10	....	1,060	....	....	....	175	4,709
Sussex	169	2,126	4	....	205	....	....	....	173	2,331
Union	11	351	2	....	350	....	....	....	13	701
Warren	222	2,214	1	....	3	....	....	....	223	2,217
State	4,130	54,759	269	135	60,648	154,709	....	....	4,534	270,116

VESICULAR EXANTHEMA INSPECTIONS MADE
July 1, 1955 to June 30, 1956

	INFECTED PREMISES			NON-INFECTED PREMISES											
							Garbage Fed Farms								
	Garbage Fed Farms			Grain Fed Farms			Raw			Cooked					
County	State	Federal	Total	State	Federal	Total	State	Federal	Total	State	Federal	Total	Infected Premises	Non-Inf. Premises	Total Inspections
Atlantic	....	....	....	49	....	49	817	....	817	45	1	46	....	912	912
Bergen	....	....	....	37	....	37	....	....	....	96	....	96	....	133	133
Burlington	....	....	....	....	17	17	4	621	625	7	239	246	....	888	888
Camden	....	....	....	2	....	2	252	....	252	103	....	103	....	357	357
Cape May	....	....	....	116	....	116	543	....	543	22	....	22	....	681	681
Cumberland	....	....	....	33	....	33	182	....	182	36	1	37	....	252	252
Essex	....	....	....	....	....	....	19	....	19	....	....	....	....	19	19
Gloucester	....	....	....	....	....	....	4	874	878	11	1,119	1,130	....	2,008	2,008
Hudson	....	....	....	....	....	....	13	519	532	17	218	235	....	767	767
Hunterdon	....	....	....	36	....	36	95	....	95	47	....	47	....	178	178
Mercer	....	....	....	....	....	....	184	....	184	11	....	11	....	195	195
Middlesex	....	....	....	29	....	29	246	....	246	27	....	27	....	302	302
Monmouth	....	....	....	1	....	1	810	....	810	65	....	65	....	876	876
Morris	....	....	....	8	....	8	327	25	352	1	....	1	....	361	361
Ocean	....	....	....	....	22	22	1	235	236	....	23	23	....	281	281
Passaic	....	....	....	....	....	....	58	....	58	....	....	....	....	58	58
Salem	....	....	....	2	....	2	10	....	10	....	....	....	....	12	12
Somerset	....	....	....	71	....	71	163	....	163	1	....	1	....	235	235
Sussex	....	....	....	2	....	2	58	....	58	....	....	....	....	60	60
Union	....	....	....	....	....	....	113	....	113	....	....	....	....	113	113
Warren	....	....	....	6	....	6	5	....	5	....	....	....	....	11	11
State	....	....	....	392	39	431	3,904	2,274	6,178	489	1,601	2,090	....	8,699	8,699

VESICULAR EXANTHEMA PERMITS ISSUED FOR THE MOVEMENT OF GRAIN FED SWINE

July 1, 1955 to June 30, 1956

	PERMITS ISSUED BY				SWINE MOVEMENTS			
						Intra and Inter State		Total
County	State	Federal	Private	Total	For Slaughter	Feeders	Breeders	Swine Moved
Atlantic	27	....	7	34	145	150	....	295
Bergen	26	1	....	27	47	128	....	175
Burlington	40	51	35	126	1,136	407	43	1,586
Camden	5	10	2	17	79	185	1	265
Cape May	12	2	....	14	298	293	3	594
Cumberland	11	1	7	19	793	235	4	1,032
Essex	18	2	2	22	235	13	....	248
Gloucester	7	151	68	226	9,930	2,133	42	12,105
Hudson	....	....	....	....	....	....	....	....
Hunterdon	24	298	133	455	1,936	1,819	10	3,765
Mercer	43	10	39	92	708	108	5	821
Middlesex	97	5	34	136	2,912	301	15	3,228
Monmouth	269	17	41	327	2,051	1,512	7	3,570
Morris	13	5	63	81	385	165	1	551
Ocean	29	4	12	45	334	89	....	423
Passaic	....	....	1	1	16	....	....	16
Salem	46	12	19	77	2,459	714	....	3,173
Somerset	61	41	57	159	2,447	157	8	2,612
Sussex	52	1	32	85	407	836	8	1,251
Union	1	....	2	3	9	24	....	33
Warren	18	2	17	37	863	189	1	1,053
State	799	613	571	1,983	27,190	9,458	148	36,796

Vesicular Exanthema Permits Issued for the Movement of Cooked Garbage Fed Swine

July 1, 1955 to June 30, 1956

County	Permits Issued By			Swine Movements			
	State	Federal	Total	For Slaughter	Intra and Inter State Feeders	Breeders	Total Swine Moved
Atlantic	16	5	21	269	1,310	....	1,579
Bergen	142	20	162	508	6,858	....	7,366
Burlington	5	254	259	8,305	10,742	50	19,097
Camden	1	32	33	145	1,738	....	1,883
Cape May	10	1	11	136	575	....	711
Cumberland	9	2	11	252	556	....	808
Essex	....	....	....	....	....	....	....
Gloucester	9	2,144	2,153	63,261	77,101	517	140,879
Hudson	783	850	1,633	76,555	3,175	157	79,887
Hunterdon	26	86	112	874	6,381	20	7,275
Mercer	4	2	6	57	64	....	121
Middlesex	13	1	14	386	11	....	397
Monmouth	137	35	172	5,333	9,478	16	14,827
Morris	1	....	1	20	....	....	20
Ocean	....	24	24	230	1,163	....	1,393
Passaic	....	....	....	....	....	....	....
Salem	....	....	....	....	....	....	....
Somerset	....	....	....	....	....	....	....
Sussex	....	....	....	....	....	....	....
Union	....	....	....	....	....	....	....
Warren	....	....	....	....	....	....	....
State	1,156	3,456	4,612	156,331	119,152	760	276,243

VESICULAR EXANTHEMA PERMITS ISSUED FOR THE MOVEMENT OF RAW GARBAGE FED SWINE

July 1, 1955 to June 30, 1956

	PERMITS ISSUED BY			SWINE MOVEMENTS				
					For Slaughter & Special Processing	To Farms for		Total Raw Garbage Fed Swine
County	State	Federal	Total	For Regular Slaughter		Feeding	Breeding	
Atlantic	97	10	107	666	21	1,817	30	2,534
Bergen	....	....	....	....	....	....	....	....
Burlington	7	155	162	2,039	189	8,742	....	10,970
Camden	7	21	28	287	....	1,216	....	1,503
Cape May	41	7	48	534	50	1,352	30	1,966
Cumberland	14	....	14	44	....	138	....	182
Essex	2	....	2	....	....	35	....	35
Gloucester	7	394	401	1,112	....	20,966	330	22,408
Hudson	488	106	594	15,134	10,405	2,219	50	27,808
Hunterdon	44	47	91	1,031	347	379	....	1,757
Mercer	49	....	49	617	39	192	....	848
Middlesex	56	1	57	739	687	....	....	1,426
Monmouth	168	2	170	1,296	87	1,408	25	2,816
Morris	77	24	101	971	635	600	....	2,206
Ocean	7	23	30	281	12	426	....	719
Passaic	13	....	13	33	15	62	....	110
Salem	....	....	....	....	....	....	....	....
Somerset	51	....	51	558	282	255	7	1,102
Sussex	2	....	2	8	....	....	....	8
Union	9	....	9	177	26	....	....	203
Warren	....	....	....	....	....	....	....	....
State	1,139	790	1,929	25,527	12,795	39,807	472	78,601

SUMMARY OF PERMITS ISSUED FOR THE MOVEMENT OF SWINE AND THE NUMBER OF SWINE MOVED

July 1, 1955 to June 30, 1956

	PERMITS ISSUED				SWINE MOVEMENTS			
County	Total Grain Fed Swine	Total Raw Garbage Fed Swine	Total Cooked Garbage Fed Swine	Total Permits Issued	Total Grain Fed Swine	Total Raw Garbage Fed Swine	Total Cooked Garbage Fed Swine	Total Swine Moved
Atlantic	34	107	21	162	295	2,534	1,579	4,408
Bergen	27	....	162	189	175	....	7,366	7,541
Burlington	126	162	259	547	1,586	10,970	19,097	31,653
Camden	17	28	33	78	265	1,503	1,883	3,651
Cape May	14	48	11	73	594	1,966	711	3,271
Cumberland	19	14	11	44	1,032	182	808	2,022
Essex	22	2	....	24	248	35	....	283
Gloucester	226	401	2,153	2,780	12,105	22,408	140,879	175,392
Hudson	....	594	1,633	2,227	....	27,808	79,887	107,695
Hunterdon	455	91	112	658	3,765	1,757	7,275	12,797
Mercer	92	49	6	147	821	848	121	1,790
Middlesex	136	57	14	207	3,228	1,426	397	5,051
Monmouth	327	170	172	669	3,570	2,816	14,827	21,213
Morris	81	101	1	183	551	2,206	20	2,777
Ocean	45	30	24	99	423	719	1,393	2,535
Passaic	1	13	....	14	16	110	....	126
Salem	77	....	....	77	3,173	....	....	3,173
Somerset	159	51	....	210	2,612	1,102	....	3,714
Sussex	85	2	....	87	1,251	8	....	1,259
Union	3	9	....	12	33	203	....	236
Warren	37	....	....	37	1,053	....	....	1,053
State	1,983	1,929	4,612	8,524	36,796	78,601	276,243	391,640

SUMMARY OF THE SWINE IMPORTED FOR SLAUGHTER PURPOSES
July 1, 1955 to June 30, 1956

	Swine
Armour and Company, Jersey City	244,444
Walter Blaker, Clarksboro	129
C. W. Brown, Mount Royal	21,037
Delaware Packing Co., Trenton	21,280
John Englehorn & Son, Newark	496,306
Frank Gazzaro, Hammonton	2,257
Charles Haag, Inc., Hoboken	111,648
C. Miller & Co., No. Bergen	224,916
Swift and Co., Jersey City	278,892
Trenton Packing Co., Trenton	22,025
VanWagenen & Schickhaus, Harrison	183,116
Wildwood Packing Co., Wildwood	16,474
Total	1,601,524

Up until December 31, 1955 at which time special processing was discontinued there were 13,796 swine weighing approximately 3,039,249 lbs. consigned to Charles Haag, Inc., Secaucus.

FEEDER AND BREEDING SWINE IMPORTED
July 1, 1955 to June 30, 1956

County	Feeders	Breeders
Bergen	2,264	3
Burlington	639	3
Cape May	82	....
Cumberland	41	....
Gloucester	36,200	12
Hudson	51,461	....
Hunterdon	5,248	....
Monmouth	9,158	6
Morris	23	....
Salem	174	6
Somerset	....	9
State	105,290	39

BUREAU OF BRUCELLOSIS CONTROL

Eradication of brucellosis in New Jersey began February 5, 1927, when the first official agglutination test was conducted by Dr. R. A. Hendershott, then director of the laboratory. The brucellosis eradication program has been voluntary, emphasizing cooperation with farmers who desired to eliminate this costly disease from their herds.

The Cooperative Brucellosis Eradication Program was revised by legislation effective July 1, 1946. The revision was effected in compliance with recommendations of the Advisory Committee on Brucellosis Eradication. At that time, the chairman of this important committee was Lloyd B. Wescott of Clinton. The farsighted program provided even more incentive for cattle owners to join the battle against brucellosis.

The fiscal year 1955 - 1956 marked the completion of 10 years

of brucellosis eradication under the revised laws and regulations of 1946. During this period, brucellosis eradication made sound progress. Brucellosis is no longer the major cause of abortion, poor production and related losses. There is little doubt that the virtual elimination of brucellosis as a major problem has played an important role in helping New Jersey milk production set new records. The comparison outlined below gives an indication of the progress made.

	June 30, 1956	June 30, 1946
Herds in plans using testing	7,305	1,592
Per cent of total herds	86%	11%
Cattle in herds testing	181,028	29,069
Per cent of total cattle	93%	14%
Herds certified brucellosis-free	3,849	920
Per cent of total herds	45%	6%
Cattle in certified herds	86,478	11,107
Per cent of total cattle	44%	6%
Herds not brucellosis testing	1,183	13,275
Cattle in untested herds	13,909	172,280

The revised laws and regulations provided for official calfhood vaccination against brucellosis at State expense starting July 1, 1946. It is believed that nearly all calves raised in New Jersey are vaccinated against brucellosis. Vaccination has been provided with or without blood testing of herds. When the herds utilizing calfhood vaccination without testing are added to the tested herds recorded above, it is observed that 7,876 herds (93 per cent of the herds in the State) of 190,760 animals (98 per cent of the cattle in the State) are engaged in the brucellosis eradication program.

The Advisory Committee on Brucellosis Eradication, under Chairman William J. Lauderdale, Lambertville, met July 29, 1955. In compliance with recommendations of this committee, coupled with other studies, the State Board of Agriculture made additional improvements in the Cooperative Brucellosis Eradication Program.

The action of the State Board of Agriculture serves to facilitate elimination of brucellosis from infected herds. It requires tagging and quarantining of brucellosis reactors effective July 1, 1956, requires immediate slaughter of brucellosis reactors starting July 1, 1957, provides for compulsory area testing when deemed advisable by the State Board, establishes the age of official Brucella vaccination at four through eight months, and urges that such vaccination be conducted at five, six or seven months when possible.

Atlantic County was designated as a modified certified brucellosis-free area on May 1, 1956, becoming New Jersey's second county to be so designated. Cape May County has been modified certified brucellosis-free since January 1, 1947.

SUMMARY

The Cooperative Brucellosis Eradication Program enables farmers to eliminate this costly disease which is capable of causing severe financial losses. Furthermore, it provides the means by which the dairymen can be sure their herds are qualified for the State Department of Health requirement that milk will be produced only by brucellosis-free herds effective April 1, 1958. Therefore, the program serves a dual role by protecting the livestock industry and insuring an improved, safe product for consumers.

STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
JULY 1, 1955 TO JUNE 30, 1956

Class of Cattle	Animals	Amount Paid	Average State Indemnity Paid Per Head
Registered	129	$ 19,205.65	$148.88
Grade	2,004	149,707.35	74.70
Registered and Grade	2,133	$168,913.00	$ 79.19

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST
JULY 1, 1955 TO JUNE 30, 1956

Class of Cattle	Animals	Amount Paid	Average Salvage Received Per Head
Registered	129	$ 14,111.70	$109.39
Grade	2,004	225,734.17	112.64
Registered and Grade	2,133	$239,845.87	$112.45

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
JULY 1, 1955 TO JUNE 30, 1956

Class of Cattle	Animals	Amount Paid	Average Federal Indemnity Paid Per Head
Registered	129	$ 6,443.99	$49.95
Grade	2,004	50,072.14	24.99
Registered and Grade	2,133	$56,516.13	$26.50

Total amount received by owners for reactors (Sum of salvage, Federal and State indemnity)	**$465,275.00**
Average amount received per head by owners for reactors	**$218.13**

BRUCELLOSIS TESTING IN NEW JERSEY

1945 — 1956

	ALL TESTING PLAN A, B		PLAN C		ALL PLANS		CALVES OFFICIALLY VACCINATED	REACTORS INDEMNIFIED
	HERDS	CATTLE	HERDS	CATTLE	HERDS	CATTLE		
1955 - 1956	7,305	181,028	623	9,746	7,928	190,774	17,514	2,133
1954 - 1955	6,937	173,091	1,084	23,465	8,021	196,556	17,886	1,801
1953 - 1954	5,852	144,909	1,783	46,783	7,635	191,692	22,029	653
1952 - 1953	5,129	113,225	2,663	64,385	7,792	177,610	23,626	362
1951 - 1952	4,019	81,499	3,086	77,489	7,105	158,988	22,394	254
1950 - 1951	3,427	66,944	3,224	83,607	6,651	150,551	19,944	166
1949 - 1950	3,099	60,930	3,311	82,658	6,410	143,588	18,305	191
1948 - 1949	2,595	52,671	2,967	75,878	5,562	128,549	16,183	190
1947 - 1948	2,030	45,153	2,390	67,874	4,420	113,027	14,813	206
1946 - 1947	1,761	30,548	1,698	54,271	3,459	84,819	13,381	203
1945 - 1946	1,592	29,069	.....	.....	1,592	24,069	.....	209

BRUCELLOSIS SERVICE FEES AND INDEMNITY PAID

1945 — 1956

	State Indemnity Paid	Federal Indemnity Paid	State Veterinary Service Fees For Testing	Federal Veterinary Service Fees For Testing	State Veterinary Service Fees For Vaccination
1955 - 1956	$168,913.00	$56,516.13	$14,433.25	$41,585.98	$22,024.50
1954 - 1955	142,561.23	46,105.99	24,880.25	18,554.00	20,790.50
1953 - 1954	53,787.83	8,071.00	37,602.55	.....	24,121.50
1952 - 1953	30,883.20	10,339.77	33,826.95	.....	25,771.50
1951 - 1952	23,676.13	7,950.45	12,427.35	.....	24,480.50
1950 - 1951	14,070.37	4,904.19	8,973.50	.....	22,447.50
1949 - 1950	17,027.83	5,745.34	7,395.05	.....	21,137.50
1948 - 1949	18,521.50	6,289.40	6,397.05	.....	18,704.00
1947 - 1948	20,666.25	7,077.12	5,312.75	.....	17.210.50
1946 - 1947	17,814.89	6,337.06	3,358.90	.....	14,975.00
1945 - 1946	16,349.96	6,835.27	1,916.00	.....	.....

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, 1955 to June 30, 1956

County	Reactors Appraised			Appraised Value			Total Amount Paid to Owners (Salvage, State, & Federal Indemnity)			Average Amount Paid Owners Per Head		
	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total
Atlantic	....	3	3	$	$ 825.00	$ 825.00	$	$ 646.35	$ 646.35	$	$215.45	$215.45
Bergen	1	3	4	335.00	775.00	1,110.00	277.05	639.22	916.27	277.05	213.07	229.07
Burlington	25	319	344	8,590.00	88,065.00	96,655.00	7,269.58	64,254.33	71,523.91	290.78	201.42	207.92
Camden	1	3	4	350.00	875.00	1,225.00	302.70	664.91	967.61	302.70	221.64	241.90
Cape May	....	....	....	....	....	....	....	....	....	....	....	....
Cumberland	7	79	86	2,605.00	20,275.00	22,880.00	2,234.24	16,014.56	18,248.80	319.18	202.72	212.20
Essex	2	7	9	710.00	1,910.00	2,620.00	604.59	1,531.48	2,136.07	302.30	218.78	237.34
Gloucester	2	24	26	725.00	6,875.00	7,600.00	676.81	5,415.81	6,092.62	338.41	225.66	234.33
Hudson	....	....	....	....	....	....	....	....	....	....	....	....
Hunterdon	18	156	174	7,360.00	48,720.00	56,080.00	5,346.13	33,530.83	38,876.96	297.01	214.94	223.43
Mercer	1	41	42	300.00	9,549.00	9,849.00	257.18	7,929.76	8,186.94	257.18	193.41	194.93
Middlesex	....	52	52	....	13,565.00	13,565.00	....	11,276.36	11,276.36	....	216.85	216.85
Monmouth	4	51	55	1,275.00	13,290.00	14,565.00	1,193.44	11,146.49	12,339.93	298.36	216.60	224.36
Morris	8	110	118	3,015.00	29,402.00	32,417.00	2,428.31	23,222.32	25,650.63	303.54	211.11	217.38
Ocean	3	16	19	1,125.00	4,205.00	5,330.00	1,006.48	2,928.89	3,935.37	335.49	183.06	207.12
Passaic	....	9	9	....	2,503.00	2,503.00	....	2,205.58	2,205.58	....	245.06	245.06
Salem	12	192	204	4,465.00	50,714.00	55,179.00	3,857.63	41,131.39	44,989.02	321.47	214.23	220.53
Somerset	1	59	60	380.00	16,206.00	16,586.00	333.90	13,004.51	13,338.41	333.90	220.42	222.31
Sussex	22	476	498	8,119.00	131,938.00	140,057.00	7,059.87	101,259.65	108,319.52	320.90	212.73	217.51
Union	....	....	....	....	....	....	....	....	....	....	....	....
Warren	22	404	426	8,040.00	105,180.00	113,220.00	6,913.43	88,711.22	95,624.65	314.25	219.58	224.47
State	129	2,004	2,133	$47,394.00	$544,872.00	$592,266.00	$39,761.34	$425,513.66	$465,275.00	$308.23	$212.33	$218.13

Reactors to the Test for Brucellosis Appraised, the Amount of Salvage Received and the State and Federal Indemnity Paid

July 1, 1955 to June 30, 1956

County	Reactors Appraised			Amount of Salvage Received			Amount of State Indemnity Paid			Amount of Federal Indemnity Paid		
	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total
Atlantic	....	3	3	$	$ 346.35	$ 346.35	$	$ 225.00	$ 225.00	$	$ 75.00	$ 75.
Bergen	1	3	4	77.05	339.22	416.27	150.00	225.00	375.00	50.00	75.00	125.
Burlington	25	319	344	2,273.83	32,423.31	34,697.14	3,747.16	23,856.02	27,603.18	1,248.59	7,975.00	9,223.
Camden	1	3	4	102.70	364.91	467.61	150.00	225.00	375.00	50.00	75.00	125.
Cape May	....	....	....	....	....	....	....	....	....	....	....	
Cumberland	7	79	86	846.04	8,127.11	8,973.15	1,038.20	5,912.45	6,950.65	350.00	1,975.00	2,325.
Essex	2	7	9	204.59	831.48	1,036.07	300.00	525.00	825.00	100.00	175.00	275.
Gloucester	2	24	26	276.81	3,015.81	3,292.62	300.00	1,800.00	2,100.00	100.00	600.00	700.
Hudson	....	....	....	....	....	....	....	....	....	....	....	
Hunterdon	18	156	174	1,761.13	17,930.83	19,691.96	2,685.00	11,700.00	14,385.00	900.00	3,900.00	4,800.
Mercer	1	41	42	57.18	3,846.76	3,903.94	150.00	3,058.00	3,208.00	50.00	1,025.00	1,075.
Middlesex	....	52	52	....	6,095.63	6,095.63	....	3,880.73	3,880.73	....	1,300.00	1,300.
Monmouth	4	51	55	448.95	6,078.19	6,527.14	544.49	3,795.54	4,340.03	200.00	1,272.76	1,472.
Morris	8	110	118	828.31	12,348.20	13,176.51	1,200.00	8,124.23	9,324.23	400.00	2,749.89	3,149.
Ocean	3	16	19	406.48	1,409.46	1,815.94	450.00	1,129.63	1,579.63	150.00	389.80	539.
Passaic	....	9	9	....	1,305.58	1,305.58	....	675.00	675.00	....	225.00	225.
Salem	12	192	204	1,457.63	21,937.70	23,395.33	1,800.00	14,393.69	16,193.69	600.00	4,800.00	5,400.
Somerset	1	59	60	133.90	7,104.51	7,238.41	150.00	4,425.00	4,575.00	50.00	1,475.00	1,525.
Sussex	22	476	498	2,659.87	53,789.01	56,448.88	3,300.00	35,578.11	38,878.11	1,100.00	11,892.53	12,992.
Union	....	....	....	....	....	....	....	....	....	....	....	
Warren	22	404	426	2,577.23	48,440.11	51,017.34	3,240.80	30,178.95	33,419.75	1,095.40	10,092.16	11,187.
State	129	2,004	2,133	$14,111.70	$225,734.17	$239,845.87	$19,205.65	$149,707.35	$168,913.00	$6,443.99	$50,072.14	$56,516.

STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1956

Class of Cattle	Animals	Amount Paid
Registered	1,450	$154,205.67
Grade	7,616	480,074.08
Registered and Grade	9,066	$634,279.75

Average State Indemnity Paid Per Head:

Registered	$134.09
Grade	63.03
Registered and Grade	69.96

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1956

Class of Cattle	Animals	Amount Paid
Registered	1,450	$140,851.95
Grade	7,616	809,627.21
Registered and Grade	9,066	$950,479.16

Average Salvage Received Per Head:

Registered	$ 97.14
Grade	106.31
Registered and Grade	104.84

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST
December 16, 1940 to June 30, 1956

Class of Cattle	Animals	Amount Paid
Registered	1,444*	$ 62,339.08
Grade	7,622	169,410.22
Registered and Grade	9,066	$231,749.30

Average Federal Indemnity Paid Per Head:

Registered	$43.17
Grade	22.23
Registered and Grade	25.56

Total amount received by owners for reactors (Sum of salvage, Federal and State Indemnity)	$1,816,508.21
Average amount received per head	$200.36

* One claim was paid during the fiscal year 1945-1946 involving six animals paid on a registered basis by the State and on a grade basis by the Federal Government.

Reactors to Test for Brucellosis Appraised, Amount of Salvage Received and State and Federal Indemnity Paid

December 16, 1940 to June 30, 1956

County	Reactors Appraised			Amount of Salvage Received			Amount of State Indemnity Paid			Amount of Federal Indemnity Paid		
	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total
Atlantic	1	77	78	$ 28.95	$ 4,934.76	$ 4,963.71	$ 78.02	$ 2,979.17	$ 3,057.19	$ 50.00	$ 1,580.08	$ 1,630.08
Bergen	6	27	33	518.53	4,281.01	4,799.54	621.49	1,790.87	2,412.36	286.93	638.83	925.76
Burlington	148	904	1,052	15,136.02	96,559.84	111,695.86	17,920.91	64,804.22	82,725.13	6,393.43	20,801.72	27,195.15
Camden	13	46	59	1,252.58	4,775.94	6,028.52	1,797.00	2,971.61	4,768.61	650.00	1,013.16	1,663.16
Cape May		64	64		3,555.61	3,555.61		1,995.17	1,995.17		1,216.49	1,216.49
Cumberland	80	343	423	10,155.56	37,229.92	47,385.48	9,630.32	20,999.87	30,630.19	3,518.90	7,348.03	10,866.93
Essex	2	23	25	204.59	1,831.69	2,036.28	300.00	876.55	1,176.55	100.00	382.51	482.51
Gloucester	33	214	247	4,609.33	26,501.31	31,110.64	3,905.43	13,980.25	17,885.68	1,435.69	4,719.30	6,154.99
Hudson		2	2		357.53	357.53		150.00	150.00		50.00	50.00
Hunterdon	178	573	751	17,493.50	70,623.53	88,117.03	21,102.80	40,232.62	61,335.42	7,874.80	13,362.65	21,237.45
Mercer	111	485	596	10,238.11	53,926.77	64,164.88	10,920.45	25,579.91	36,500.36	4,678.49	10,332.39	15,010.88
Middlesex	87	681	768	5,523.97	49,368.00	54,891.97	4,597.82	25,441.21	30,039.03	2,966.90	13,984.70	16,951.60
Monmouth	72	243	315	7,699.39	26,242.20	33,941.59	6,404.68	14,809.91	21,214.59	2,998.88	5,224.47	8,223.35
Morris	179	555	734	13,828.78	52,441.35	66 270.13	18,510.97	34,515.83	53,026.80	8,009.83	13,089.14	21,098.97
Ocean	3	27	30	406.48	2,535.32	2 941.80	450.00	1,853.33	2,303.33	150.00	619.39	769.39
Passaic	9	69	78	823.95	6,022.07	6,846.02	1,015.95	3,654.02	4,669.97	430.01	1,483.83	1,913.84
Salem	102	978	1,080	11,866.25	107,195.53	119,061.78	11,551.42	63,003.66	74,555.08	4,204.83	19,460.15	23,764.98
Somerset	165	406	571	14,390.58	37,061.15	51,451.73	16,264.60	22,608.90	38,873.50	6,997.71	8,821.91	15,819.62
Sussex	141	961	1,102	15,945.34	113,158.78	129,104.12	16,323.96	71,155.80	87,479.76	6,253.82	22,582.06	28,835.88
Union		10	10		724.60	724.60		399.41	399.41		193.60	193.60
Warren	120	928	1,948	10,730.04	110,300.30	121,030.34	12,809.85	66,271.77	79,081.62	5,238.86	22,505.81	27,744.67
State	1,450	7,616	9,066	$140,851.95	$809,627.21	$950,479.16	$154,205.67	$480,074.08	$634,279.75	$62,339.08	$169,410.22	$231,749.30

Reactors to Test for Brucellosis Appraised, Their Appraised Value, Total and Average Amount Received by Owners from Salvage, State and Federal Indemnity

December 16, 1940 to June 30, 1956

County	Reactors Appraised			Appraised Valuation			Total Amount Paid to Owners (Salvage, State and Federal Indemnity)			Average Amount Paid Owners per Head		
	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total	Registered	Grade	Total
Atlantic	1	77	78	$185.00	$10,740.00	$10,925.00	$156.97	$9,494.01	$9,650.98	$156.97	$123.30	$123.73
Bergen	6	27	33	1,590.00	7,575.00	9,165.00	1,426.95	6,710.71	8,137.66	237.83	248.54	246.60
Burlington	148	904	1,052	46,475.00	236,470.00	282,945.00	39,450.36	182,165.78	221,616.14	266.56	201.51	210.66
Camden	13	46	59	4,090.00	10,715.00	14,805.00	3,699.58	8,760.71	12,460.29	284.58	190.45	211.19
Cape May		64	64		7,560.00	7,560.00		6,767.27	6,767.27		105.74	105.74
Cumberland	80	343	423	25,855.00	77,452.00	103,307.00	23,304.78	65,577.82	88,882.60	291.31	191.19	210.12
Essex	2	23	25	710.00	3,600.00	4,310.00	604.59	3,090.75	3,695.34	302.30	134.38	147.81
Gloucester	33	214	247	11,420.00	53,875.00	65,295.00	9,950.45	45,200.86	55,151.31	301.53	211.22	223.28
Hudson		2	2		730.00	730.00		557.53	557.53		278.77	278.77
Hunterdon	178	573	751	57,514.00	163,613.50	221,127.50	46,471.10	124,218.80	170,689.90	261.07	216.79	227.28
Mercer	111	485	596	30,600.00	101,884.00	132,484.00	25,837.05	89,839.07	115,676.12	232.77	185.24	194.09
Middlesex	87	681	768	14,545.00	99,895.00	114,440.00	13,088.69	88,793.91	101,882.60	150.44	130.39	132.66
Monmouth	72	243	315	19,400.00	55,130.00	74,530.00	17,102.95	46,276.58	63,379.53	237.54	190.44	201.20
Morris	179	555	734	48,047.00	121,874.00	169,921.00	40,349.58	100,046.32	140,395.90	225.42	180.26	191.28
Ocean	3	27	30	1,125.00	6,600.00	7,725.00	1,006.48	5,008.04	6,014.52	335.49	185.48	200.48
Passaic	9	69	78	2,685.00	13,798.00	16,483.00	2,269.91	11,159.92	13,429.83	252.21	161.74	172.18
Salem	102	978	1,080	31,395.00	240,237.00	271,632.00	27,722.50	189,659.34	217,381.84	271.79	193.93	201.28
Somerset	165	406	571	45,500.00	84,395.00	129,895.00	37,652.89	68,491.96	106,144.85	228.20	168.70	185.89
Sussex	141	961	1,102	45,594.00	269,820.50	315,414.50	38,523.12	206,896.64	245,419.76	273.21	215.29	222.70
Union		10	10		1,450.00	1,450.00		1,317.61	1,317.61		131.76	131.76
Warren	120	928	1,048	33,598.00	238,812.40	272,410.40	28,778.75	199,077.88	227,856.63	239.82	214.52	217.42
State	1,450	7,616	9,066	$420,328.00	$1,806,226.40	$2,226,554.40	$357,396.70	$1,459,111.51	$1,816,508.21	$246.48	$191.59	$200.36

HERDS AND ANIMALS IN HERDS UNDER BRUCELLOSIS TESTING PROGRAM AND THOSE CERTIFIED BRUCELLOSIS-FREE
June 30, 1956

County	PLAN A		PLAN B		Total	Total
	Herds	Animals	Herds	Animals	Herds	Animals
Atlantic	96	440	....	....	96	440
Certified	64	207	....	....	64	207
Bergen	58	614	4	153	62	767
Certified	25	443	....	....	25	443
Burlington	510	18,306	38	1,914	548	20,220
Certified	230	8,078	....	....	230	8,078
Camden	90	1,351	4	185	94	1,536
Certified	42	669	....	....	42	669
Cape May	60	409	....	....	60	409
Certified	52	397	....	....	52	397
Cumberland	416	5,196	8	185	424	5,381
Certified	286	3,619	....	....	286	3,619
Essex	32	773	....	....	32	773
Certified	19	601	....	....	19	601
Gloucester	457	5,114	14	388	471	5,502
Certified	329	3,677	....	....	329	3,677
Hudson	....	....	....	....	....	....
Certified	....	....	....	....	....	....
Hunterdon	1,157	27,091	65	2,947	1,222	30,038
Certified	733	17,392	....	....	733	17,392
Mercer	347	7,285	7	489	354	7,774
Certified	256	5,179	....	....	256	5,179
Middlesex	350	4,840	4	60	354	4,900
Certified	203	1,103	....	....	203	1,103
Monmouth	547	8,612	5	569	552	9,181
Certified	334	6,059	....	....	334	6,059
Morris	341	9,204	12	943	353	10,147
Certified	152	3,729	....	....	152	3,729
Ocean	118	965	4	113	122	1,078
Certified	80	520	....	....	80	520
Passaic	72	613	....	....	72	613
Certified	38	198	....	....	38	198
Salem	617	15,191	16	559	633	15,750
Certified	277	7,996	....	....	277	7,996
Somerset	493	10,860	17	721	510	11,581
Certified	325	8,414	....	....	325	8,414
Sussex	612	27,703	49	2,307	661	30,010
Certified	222	11,393	....	....	222	11,393
Union	27	131	....	....	27	131
Certified	16	110	....	....	16	110
Warren	604	22,363	54	2,434	658	24,797
Certified	166	6,694	....	....	166	6,694
State	7,004	167,061	301	13,967	7,305	181,028
Certified	3,849	86,478	....	....	3,849	86,478

INITIAL TESTS FOR BRUCELLOSIS

July 1, 1955 to June 30, 1956

	Initial Clean Tests		Initial Tests With Reactors			Total Initial Tests Made			
	Herds	Cattle	Herds	Cattle	Reactors	Herds	Cattle	Reactors	Per Cent
1955									
July	19	332	11	569	42	30	901	42	4.66
August	37	295	1	52	5	38	347	5	1.44
September	75	590	10	367	38	85	957	38	3.97
October	80	1,101	17	696	39	97	1,797	39	2.17
November	99	820	23	959	82	122	1,779	82	4.16
December	112	1,414	17	722	44	129	2,136	44	2.1
1956									
January	120	1,675	27	1,478	86	147	3,153	86	2.7
February	126	1,355	29	1,077	91	155	2,432	91	3.7
March	115	1,195	22	837	44	137	2,032	44	2.17
April	108	1,093	23	1,136	73	131	2,229	73	3.3
May	100	802	12	625	51	112	1,427	51	3.6
June	45	311	4	268	9	49	579	9	1.6
Total	1,036	10,983	196	3,786	604	1,232	19,769	604	3.1

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

July 1, 1955 to June 30, 1956

County	Received	Negative	Positive	Suspicious	Samples Not Tested Ins. Sera	Hemolyzed	Broken
Atlantic	447	430	3	14	....	....	....
Bergen	749	691	16	42	....	....	....
Burlington	22,700	20,977	527	1,172	7	11	6
Camden	905	876	8	18	2	....	1
Cape May	343	343	....	....	....	....	....
Cumberland	5,312	5,001	104	202	5	....	....
Essex	505	478	12	15	....	....	....
Gloucester	4,477	4,234	84	151	7	....	1
Hudson	....	....	....	....	....	....	....
Hunterdon	27,752	26,398	355	970	8	....	21
Mercer	7,017	6,634	82	297	4	....	....
Middlesex	10,184	9,896	69	217	1	....	1
Monmouth	8,977	8,412	89	472	1	2	1
Morris	9,930	9,392	162	360	4	8	4
Ocean	1,099	1,011	30	56	1	....	1
Passaic	607	572	11	23	....	....	1
Salem	16,713	15,933	244	524	6	1	5
Somerset	10,804	10,165	126	502	4	1	6
Sussex	34,110	31,859	689	1,479	28	15	40
Union	18	18	....	....	....	....	....
Warren	30,465	28,473	586	1,365	20	4	17
State	193,114	181,793	3,197	7,879	98	42	105

Per Cent Negative	94.14
Per Cent Positive	1.66
Per Cent Suspicious	4.08
Per Cent Not Tested	.13

SUMMARY—BLOOD SAMPLES DRAWN FROM CATTLE—ROUTINE BRUCELLOSIS TESTS

July 1, 1955 to June 30, 1956

Veterinarians Bleeding	Lots	Animals
New Jersey Division of Animal Industry	610	9,484
United States Animal Disease Eradication Division	1,020	25,558
Accredited Practitioners (State and Federal Expense)	6,430	158,072
Accredited Practitioners (Tests at Owner's Expense)	1,803	13,293
Totals	9,863	206,407

SUMMARY—BLOOD SAMPLES DRAWN FROM INSHIPPED CATTLE—BRUCELLOSIS TESTS

New Jersey Division of Animal Industry	848	6,222
United States Animal Disease Eradication Division	119	1,429
Accredited Practitioners (State Expense)	.....	.....
Accredited Practitioners (Tests at Owner's Expense)	256	3,671
Totals	1,223	11,322

SUMMARY—BLOOD SAMPLES DRAWN FROM GOATS—ROUTINE BRUCELLOSIS TESTS

New Jersey Division of Animal Industry	44	210
United States Animal Disease Eradication Division	63	533
Accredited Practitioners (State Expense)	124	1,215
Accredited Practitioners (Tests at Owner's Expense)	.....	.....
Totals	231	1,958

SUMMARY—MISCELLANEOUS BLOOD SAMPLES DRAWN—ROUTINE BRUCELLOSIS TESTS

New Jersey Division of Animal Industry	....	.....
Accredited Practitioners (Tests at Owner's Expense)	6	16 Goats
	5	51 Hogs
	1	1 Horse

RESULTS OF MILK RING TEST
July 1, 1955 to June 30, 1956

County	Samples Submitted	Samples Negative	Samples Suspicious	Samples Broken, Sour, etc.	Herds Tested	Animals in Tested Herds	Clean Herds	Animals in Clean Herds	Herds Suspicious	Animals in Suspicious Herds
Atlantic	3	1	.....	2	1	17	1	17	.....	.....
Bergen	5	5	.....	.....	1	170	1	23	.....	.....
Burlington	742	713	25	4	153	9,101	135	8,473	18	775
Camden	29	29	.....	.....	9	394	9	394	.....	.....
Cape May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland	322	310	12	.....	118	4,549	107	4,020	11	529
Essex	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	204	201	3	.....	59	2,466	57	2,408	2	58
Hudson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hunterdon	1,292	1,257	33	2	291	11,262	268	10,516	23	746
Mercer	126	118	8	.....	39	1,700	33	1,462	6	238
Middlesex	71	58	13	.....	15	504	12	398	3	106
Monmouth	194	187	5	2	47	2,262	43	2,101	4	161
Morris	218	212	5	1	46	2,324	42	2,144	4	180
Ocean	28	23	.....	5	11	505	11	505	.....	.....
Passaic	12	12	.....	.....	3	69	3	69	.....	.....
Salem	500	461	40	2	204	8,246	174	6,944	30	1,302
Somerset	475	458	17	.....	117	5,406	107	4,952	10	454
Sussex	770	704	23	43	119	8,148	103	7,281	16	867
Union	.....	.....	.....	.....	.....	.....	....	.....	.....	.....
Warren	900	869	31	.....	163	7,329	143	6,498	20	831
State	5,891	5,618	215	61	1,396	64,452	1,249	58,205	147	6,247

CALFHOOD VACCINATION REPORTED

July 1, 1955 to June 30, 1956

County	Plan A			Plan B			Plan C			Total		
	Lots	Calves	Unofficial	Lots	Calves	Unofficial	Lots	Calves	Unofficial	Lots	Calves	Unofficial
Atlantic	5	7	....	....	....	....	2	5	....	7	12	....
Bergen	15	69	....	2	5	....	1	6	....	18	80	....
Burlington	408	1,544	8	62	229	....	84	247	5	554	2,020	13
Camden	34	132	....	5	15	....	7	11	....	46	158	....
Cape May	6	17	....	....	....	....	....	....	....	6	17	....
Cumberland	121	352	1	13	43	....	3	4	....	137	399	1
Essex	14	84	....	5	36	....	....	....	....	19	120	....
Gloucester	138	452	....	13	25	....	13	26	....	164	503	....
Hudson	....	....	....	....	....	....	....	....	....	....	....	....
Hunterdon	989	2,669	2	84	257	....	100	208	....	1,173	3,134	2
Mercer	215	720	2	18	84	....	7	12	....	240	816	2
Middlesex	45	132	....	25	235	....	3	15	....	73	382	....
Monmouth	307	1,091	13	13	49	....	10	31	....	330	1,171	13
Morris	193	660	5	30	174	....	10	29	....	233	863	5
Ocean	21	60	....	8	29	....	5	11	4	34	100	4
Passaic	10	18	....	2	9	....	2	3	....	14	30	....
Salem	347	1,086	....	21	69	3	34	97	....	402	1,252	3
Somerset	377	1,061	1	23	91	....	22	45	....	422	1,197	1
Sussex	708	2,138	....	85	461	....	177	458	2	970	3,057	2
Union	2	2	....	....	....	....	1	1	....	3	3	....
Warren	535	1,757	1	73	205	1	80	238	....	688	2,200	2
State	4,490	14,051	33	482	2,016	4	561	1,447	11	5,533	17,514	48

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

To June 30, 1956

County	Plan A		Plan B		Plan C		Total	
	Herds	Cattle	Herds	Cattle	Herds	Cattle	Herds	Cattle
Atlantic	8	251	....	....	....	....	8	251
Bergen	10	403	1	48	4	14	15	465
Burlington	348	16,729	35	1,864	72	1,712	455	20,305
Camden	36	1,014	4	185	9	155	49	1,354
Cape May	13	204	....	....	....	....	13	204
Cumberland	138	3,766	3	119	7	140	148	4,025
Essex	7	429	1	207	1	1	9	637
Gloucester	111	3,719	12	366	7	69	130	4,154
Hudson	....	....	....	....	....	....	....	....
Hunterdon	918	24,499	87	2,859	122	655	1,127	28,013
Mercer	229	6,520	6	35	10	181	245	6,736
Middlesex	192	3,206	....	....	2	90	194	3,296
Monmouth	272	7,291	7	531	21	129	300	7,951
Morris	184	7,261	7	688	28	208	219	8,157
Ocean	28	781	3	92	6	88	37	961
Passaic	15	257	....	....	3	6	18	263
Salem	350	11,965	9	351	31	347	390	12,663
Somerset	339	10,351	13	574	26	202	378	11,127
Sussex	515	25,696	51	1,865	161	3,750	727	31,311
Union	18	114	....	....	3	31	21	145
Warren	475	18,900	48	2,188	110	1,968	633	23,056
State	4,206	143,356	287	11,972	623	9,746	5,116	165,074

CALVES VACCINATED FOR BRUCELLOSIS

July 1, 1946 to June 30, 1956

County	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	Total
Atlantic	....	....	3	25	13	102	63	41	52	12	311
Bergen	19	18	69	53	46	60	60	50	46	80	501
Burlington	1,898	1,982	2,206	2,566	2,842	2,892	2,797	2,638	2,173	2,020	24,014
Camden	82	88	94	115	145	240	210	183	217	158	1,532
Cape May	....	....	1	4	19	11	20	21	20	17	113
Cumberland	251	381	451	546	518	596	578	500	410	399	4,630
Essex	86	99	76	78	94	89	89	105	102	120	938
Gloucester	239	304	353	364	594	621	746	622	518	503	4,864
Hudson	....	....	....	....	....	....	....	....	....	....	....
Hunterdon	2,261	2,732	3,005	3,298	3,664	4,200	4,704	4,263	3,111	3,134	34,372
Mercer	979	905	845	935	1,092	1,194	1,107	1,007	774	816	9,654
Middlesex	507	456	521	625	590	731	661	656	478	382	5,607
Monmouth	780	828	1,136	1,207	1,189	1,343	1,340	1,366	1,083	1,171	11,443
Morris	814	890	758	853	972	1,090	1,173	972	899	863	9,284
Ocean	37	93	88	84	114	120	115	116	99	100	966
Passaic	32	24	19	26	35	45	39	45	22	30	317
Salem	723	835	1,010	1,179	1,276	1,476	1,664	1,624	1,317	1,252	12,356
Somerset	1,109	1,246	1,349	1,470	1,499	1,711	1,820	1,493	1,227	1,197	14,121
Sussex	1,920	2,204	2,368	2,913	3,085	3,711	3,725	3,518	3,023	3,057	29,524
Union	22	34	23	22	34	70	31	21	15	3	275
Warren	1,622	1,694	1,808	1,942	2,123	2,092	2,684	2,788	2,300	2,200	21,253
State	13,381	14,813	16,183	18,305	19,944	22,394	23,626	22,029	17,886	17,514	186,075

LOTS, CALVES, HEIFERS AND ADULTS VACCINATED FOR BRUCELLOSIS CONTROL

July 1, 1946 to June 30, 1956

County	Lots	Calves Vaccinated	Unofficial
Atlantic	52	311	4
Bergen	104	501	8
Burlington	5,131	24,014	233
Camden	366	1,532	103
Cape May	56	113	....
Cumberland	1,298	4,630	15
Essex	155	938	15
Gloucester	1,386	4,864	31
Hudson	....	....	....
Hunterdon	11,010	34,372	207
Mercer	2,711	9,654	251
Middlesex	1,128	5,607	16
Monmouth	2,991	11,443	247
Morris	2,120	9,284	355
Ocean	292	966	5
Passaic	125	317	8
Salem	3,495	12,356	65
Somerset	4,297	14,121	104
Sussex	7,961	29,524	385
Union	138	275	12
Warren	5,639	21,253	114
State	50,455	186,075	2,178

DIVISION LABORATORY REPORT

July 1, 1955 to June 30, 1956

BLOOD TESTS MADE FOR BRUCELLOSIS ON INSHIPPED ANIMALS

Samples received	11,326*
Samples broken	21
Insufficient sera	4
Tests completed	11,301*
Reactors	29
Negative	11,272*

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

BLCOD TESTS MADE FOR BRUCELLOSIS ON ANIMALS IN HERDS UNDER SUPERVISION

Samples received	208,047
Samples broken	106
Insufficient sera	102
Tests completed	207,839
Reactors	3,309
Suspicious	8,150
Negative	196,320
Hemolyzed	60

MILK RING (BRT) TESTS FOR BRUCELLOSIS

Samples received	5,888
Samples broken	34
Samples sour	27
Samples tested	5,827
Suspicious	215
Negative	5,612

HOTIS TESTS MADE FOR MASTITIS ON MILK SAMPLES OF ANIMALS

Number of animals	136
Number of samples	541
Streptococci	97
Negative	416
Other organisms	40

BLOOD TESTS MADE FOR PULLORUM DISEASE OF POULTRY

Samples received	24,835
Insufficient sera	1
Tests set	24,834
Tests read	24,834
Negative	24,834

BACTERIOLOGICAL, MICROSCOPIC AND POST MORTEM EXAMINATIONS

Animal	Number Specimens Received	Specimen Received	Condition Suspected	Laboratory Findings
Avian	189	Birds	S. pullorum-typhoid	Negative
Avian	28	Birds	S. pullorum-typhoid	S. pullorum recovered
Avian	9	Birds	S. pullorum-typhoid	Fowl typhoid recovered
Avian	1	Bird	Fowl typhoid	Fowl leukosis
Avian	5	Birds	Unknown	Omphalitis
Avian	1	Drake	Botulism	Botulism
Bovine	9	Ears	Anthrax	Recovered B. anthracis
Bovine	2	Ears & spleens	Anthrax	Recovered B. anthracis
Bovine	1	Ear & spleen	Anthrax	Negative
Bovine	5	Ears	Anthrax	Negative
Bovine	14	Feti	Brucella abortus, vibrio fetus, trichomonas fetus	Negative
Bovine	8	Milk samples	Brucella	Negative
Bovine	4	Milk samples	Pathogens	Negative
Bovine	3	Milk samples	Bacteria causing mastitis	Negative
Bovine	2	Milk samples	Pathogenic organisms	Intermediate coliform & staph albus
Bovine	4	Milk samples	Pathogenic organisms	Streptococci & staphylococci
Bovine	1	Blood sample	Anthrax	Recovered B. anthracis
Bovine	1	Blood sample	Anthrax	Negative

BACTERIOLOGICAL, MICROSCOPIC AND POST MORTEM EXAMINATIONS (*continued*)

Animal	Number Specimens Received	Specimen Received	Condition Suspected	Laboratory Findings
Bovine	5	Blood samples	Leptospirosis	Negative
Bovine	1	Bacterial culture	Clostridium tertium	Gram-positive aerobic organism
Bovine	1	Spleen	Anthrax	Recovered B. anthracis
Bovine	1	Specimen from hygroma	Brucella abortus	Evidence of Brucella abortus
Bovine	3	Urine	Leptospirosis	Negative
Bovine	3	Vaginal swabs	Pathogenic organisms	Negative
Cavy	1	Rabbit	Unknown	Undetermined
Cervidae	1	Spleen, liver, lung, kidney	Pathogenic organisms	Negative
Cervidae	1	Ear	Anthrax	Negative
Ovine	1	Lung	Tuberculosis	Evidence of acid-fast organisms
Ovine	1	Heart, liver, spleen	Clostridium chauvolier, clostridium oedematiens	Negative
Ovine	1	Skin scrapings and wool	Mange mites	Negative
Ovine	1	Wool	Anthrax	Negative
Ovine	1	Ear	Anthrax	Negative
Porcine	2	Suckling pigs	Cause of death	Gastritis & enteritis of lower intestine
Porcine	1	Body tissues & blood	Hog cholera, H.S. salmonella	Negative
Porcine	1	Hog	Unknown	Suspicious of Salmonellosis or Pasteurellosis but unable to recover causative organisms

Report of the Division of Markets

WARREN W. OLEY, *Director*

The summer of 1955 was one that farmers in the State consider the most unfavorable in their memory. Commencing in June and continuing into August, New Jersey experienced a severe drought. This, coupled with above-average temperatures, resulted in crop losses of a very serious nature. Yields and quality were reduced sharply and market returns were low. In August two hurricanes took their toll in wind damage and floods. The second storm ran up a big repair bill for farmers where private roads were washed out, crops drowned and fields eroded with heavy loss in top soil. But the hurricanes did break the drought and gave fall crops a chance to recover.

Most of the field crops like wheat, oats and barley, which were harvested under ideal conditions in July, yielded well. The early hay crop was also good, and this helped out later in the season when some dairymen were forced to feed their stock because of dried up pastures.

Most of the State's potato crop is now grown under irrigation and the 1955 harvest was good. Prices, however, averaged lower than in any recent year. Important crops like tomatoes were hard hit. Yields were low and quality as shown by our inspection records was the poorest in the more than 20 years processors have purchased on the basis of our inspection.

Low milk prices are a chronic and justified complaint of the dairy farmer. The past 12 months have not been much different from any other recent year, but milk demand has been fairly steady and surpluses in New Jersey, while a burden, are not as serious as in other nearby states.

The poultry industry started the year with a couple of favorable months. The egg market had picked up, and this also was true of broilers. Feed prices had decreased a little and poultrymen were encouraged. The favorable conditions ended early in the fall and poultry producers have operated very unfavorably most of the balance of the year.

President Eisenhower's signing of the compromise farm bill toward the end of the fiscal year provides for a Soil Bank, from which farmers can be paid for taking land out of cultivation. Most of the money made available will be used to pay farmers for agreeing to withdraw land from production of basic crops. The balance of moneys made available, or around 450 million dollars, will be payable for conversion of other cropland to grass, trees, and similar soil conserving uses on a long term basis. It is doubtful if many New Jersey growers will avail themselves of these programs.

The new act abandoned the earlier attempt to revive 90 per cent of parity supports, but does increase supports on feed grains (other than corn) with no restrictions on planting. This action on feed grains is detrimental to poultry and dairy interests in this State where purchased feed probably accounts for 60 per cent of the cost of production. New Jersey farmers will not gain materially by the new act.

As the fiscal year drew to a close, it appeared that the prices of most farm products were improving. The chief discouraging element has been the adverse weather conditions from March through May.

The various programs of the Division show general gains, although there was a decrease in the volume of fruit and vegetable inspection work, due to unfavorable growing conditions.

The Division has continued close cooperation with other State agencies and with the Federal Department of Agriculture. Relations with the State Department of Health have developed in a cordial way as has work with the Division of Weights and Measures of the Department of Law and Public Safety. The Department of Conservation and Economic Development has assisted financially in promotional work for some programs. This aid has been handled through the Division of Information of this Department. Relations with the Agricultural Experiment Station and the Agricultural Extension Service are excellent.

The following pages give in some detail the objectives and accomplishments of all sections of the Division, and certain accomplishments of other organizations where the Division is partly responsible for programs of work.

BUREAU OF FRUIT AND VEGETABLE SERVICE

The Bureau of Fruit and Vegetable Service is concerned with the marketing of fruits and vegetables produced in New Jersey. Its activities include the establishment and development of outlet facilities such as local auction markets and terminal markets in large adjacent cities. Another function is educational and promotional work to create and stimulate consumer demand for New Jersey products. The Bureau also works with growers and shippers toward the improvement of grading and packing.

Among the Bureau's principal duties are the inspection and certification of fruits and vegetables to be marketed in domestic and foreign markets in fresh form, and the grading of raw crops for processing. The Federal and State Departments of Agriculture and the New Jersey Agricultural Society are cooperatively responsible, under a three-way agreement, for the operation of the inspection service in New Jersey. The United States and New Jersey Departments are jointly responsible for the proper interpretation and application of grade standards and general supervision of the conduct of the work. The United States Department is further responsible for supplying trained and experienced personnel, and for training and licensing new personnel as needed. The New Jersey Agricultural Society is responsible for the collection of fees for services rendered and payment of costs of operation of the service. This arrangement was instituted in August, 1945, and has proven very satisfactory. The agreement provides an area of mutual understanding between the Federal and State Departments in which each makes available a national and State service which neither could render as effectively on a separate basis.

The amount of work performed has varied from year to year. The fluctuations have been influenced mainly by crop production, regulations in marketing certain commodities and market prices during harvesting.

For the past several years the volume of inspections of crops for the fresh market has declined, the main reason being a reduction in potato work. During 1955-56 shipping point inspections on all products, except those for processing, amounted to about 65 per cent of the previous year.

The growth of the frozen food industry has been phenomenal

in the past decade and has had a tremendous impact upon the marketing of fruits and vegetables. Processors of frozen foods and canned products have shown a steadily increasing interest in purchasing raw supplies on the basis of standards or contract specifications. This has resulted in the growth of the inspection service in this field. In an attempt to improve the quality of the service much time and effort have gone into the study of better application of established principles and procedures, and the development of visual aids and mechanical devices designed to eliminate, or check the accuracy of, human judgment in the grading of certain products. Especially is this true of the mechanical color measuring equipment with which experiments are now being conducted. If it proves to be practical in the grading of tomatoes for processing, it will greatly facilitate the work.

Of inestimable value to producers of crops for processing has been the observation by inspectors at grading platforms as to ways and means by which they could obtain better grades by following better harvesting and handling practices and by field supervision of help. Better grades mean better returns for their crops.

PURPOSE OF INSPECTION

The inspection service is permissive and provides unbiased inspection and certification at reasonable cost. It is designed to aid in the orderly marketing of fresh fruits and vegetables. It furnishes information to growers, shippers, receivers and other interested parties that enables trading on a basis of mutual understanding. Inspection is available to applicants on carlots, trucklots, warehouse and storage lots of fruits and vegetables at the point of origin. Inspections may be made at railroad sidings, on farms, in storages and elsewhere. A means by which selling and buying may be done on a national and international scale with mutual confidence between buyer and seller is provided by the service. Proper certification of the products inspected offers proof of compliance with Federal or State regulations, export requirements, and Government programs or contracts for purchasing. Controversies between carriers, storage companies, shippers and receivers are usually settled by acceptance as prima facie evidence of the facts contained in official certificates covering products involved in disputes.

With approximately half the vegetable acreage in New Jersey planted to crops for processing, this industry is perhaps the most important outlet for Jersey grown vegetables, exclusive of white potatoes. The two main processing crops grown are tomatoes and asparagus.

Most processors in New Jersey contract with growers for delivery of their raw crops in advance of the season. The majority of contracts are based on Federal or State standards while others contain specifications unrelated to fixed standards.

Processors who purchase under contracts based on standards request the services of this Bureau in grading and certifying the product for the purpose of establishing the value of each load delivered. Contracts specify prices to be paid for certain quality which is established by sampling each load, analyzing the samples according to the standards, and applying the percentages to the entire load. Prices paid to growers are directly proportionate to quality delivered. The purpose of this system of purchasing is to encourage the growers to deliver quality which will net them the highest returns and at the same time provide the processor an opportunity to maintain high standards on the finished product at minimum cost. The grading service is performed by Federal - State inspection personnel employed by the New Jersey Agricultural Society.

Growers who contract with processors of such commodities as asparagus, tomatoes, carrots, peas, lima beans, cucumbers for pickling, red sweet peppers, green tomatoes, sweet potatoes, snap beans, apples and others are guarded against a fluctuating fresh market by having a fixed contract price. They are further benefited by assistance, now offered by most processors through their field personnel, in over-all cultural practices and insect and disease control.

CERTIFYING FRESH PRODUCE

Apples

Despite general drought conditions during June and July, apples were not as severely affected as most other crops. The general quality was good and most growers were able to pack high quality fruit. A few growers in one producing area discontinued their spray program ahead of normal years and some of the desir-

able dessert varieties became rather heavily infested with codling moth. The result was that most of these apples were marketed to processing plants at prices considerably below fresh market.

The two greatest factors affecting the number of requests for apple inspections are prices on the domestic market and prices offered by foreign markets. Domestic prices on fresh pack apples were very good throughout the harvesting and storage period this season. Under these conditions the volume of inspections is affected adversely. With an outlet for off-grade fruit through processing plants, growers were able to exercise greater care in grading and packing of fruit for immediate shipment or for storage and later shipment. Shippers seemed to have no difficulty in making sales in domestic markets without shipping point inspection and certification.

Inspection and certification of apples for export are mandatory under the U. S. Export Apple and Pear Act. Shippers selling apples or pears in foreign trade must secure inspection either at the original shipping point or port of export.

About 60 per cent of the apple inspections this fiscal year, covering about the same per cent of total volume inspected, was certified for export. The remaining stock was certified for storage or domestic shipment. Only a small percentage was inspected on the basis of the U. S. Standards for Apples for Processing.

This fiscal year only 150 lots of apples covering 91,427 bushels were inspected and certified compared with 369 lots and 178,647 bushels last year.

Green Corn

A number of growers in Burlington County have participated for several years in a program to furnish green corn to consumers in its freshest, sweetest and most succulent condition. This season they were faced with the lowest prices since the program began in 1945. With good growing conditions and irrigation, they produced an excellent crop. Ears were large and well developed and almost entirely free of worms and worm damage. Although plantings were spaced at intervals of a week or more apart, extremely high temperatures in July brought the later planting along ahead of normal and growers found themselves faced with total plantings ready for harvest at about the same time. To further add to the dilemma

green corn was still available in plentiful supply from competitive areas in other states and markets were over-supplied. Buyers who normally get their supplies in New Jersey remained in southern areas where supplies of good quality corn at low prices were available.

Prices were poor at the very beginning of harvest and declined further as the New Jersey crop began its flow to markets. Harvesting of green corn cannot be delayed once it reaches its peak of perfection. After that, it is only a matter of hours before it begins the process of hardening. Competition was so keen that loads grading U. S. Fancy before shipment were rejected at buyers' warehouses several hours later. No definite proof was obtainable but sufficient circumstantial evidence indicated that these buyers were offered corn of equal quality at prices considerably below those agreed upon for the lots which they later rejected.

The New Jersey Agricultural Society Federal-State inspector, assigned to the Cooperative Growers' Association of Beverly to inspect shipments of green corn handled by the market, worked only three weeks this season. It was not necessary to put in the long hours he was accustomed to in previous seasons, mainly because of the discontinuance of the field-fresh program. The market requested certification on only 30 shipments this year, although the inspector inspected more. The 30 lots contained 10,186 wirebound crates and 350 bags. Each of these containers holds about one bushel of corn. Three lots were inspected for another shipper in the Burlington area; these were purchased for military installations by the Quartermaster Marketing Center.

Total inspections and certifications of green corn this fiscal year amounted to 33 lots covering 12,273 containers as compared with 91 lots covering 29,032 containers last season.

White Potatoes

The weather pattern experienced in the two previous seasons was repeated again this year. Early in the growing season rainfall was frequent but generally of the showery type. Although below normal, it was sufficient to produce good stands. However, as the summer advanced insufficient rain and general drought conditions dried up streams and ponds and lowered the water table to the extent that, although an estimated 80 per cent of the commercial

potato acreage in New Jersey is under irrigation, farmers were unable to irrigate because of the lack of water supply.

Cloudburst type rains occurred at the end of the first week in August, followed by the backlash from two hurricanes in the next two weeks and flood conditions throughout the potato areas. Decay was reported in many fields as a result of the earlier heat followed by excessive rain.

Prices to growers ranged from $1.00 to $1.15 per hundredweight during most of the season and very few growers broke even, while most lost up to $250 per acre, or perhaps more.

Digging began about the second week in July. Unirrigated acreages were forced to early maturity by the heat and drought conditions. There was no Government purchase program or price support on white potatoes in New Jersey and no mandatory inspection. Requests for inspection were well below last year and might have been lower but for purchases by the Quartermaster Marketing Center, the agency of the United States Government responsible for supplying food to military training installations. A representative of QMC was located in the State again this season for this purpose. Inspection and certification is mandatory on all Government purchases to insure that contract specifications are met. Specifications on white potato purchases this season were U. S. No. 1—Size A, 2 inch minimum diameter, 16 ounce maximum weight, and not more than moderately skinned. Growers who packed and sold through this outlet experienced no particular difficulty in meeting these specifications.

Shortly after the first of the calendar year there was an increase in applications for white potato inspections. This was brought about by warnings to potato shippers of misbranding for grade on shipments in interstate commerce, by officials charged with the enforcement of the provisions of the Perishable Agricultural Commodities Act. Although there was very little volume left in the State at this time, white potato shippers wished to exercise more caution in grading and packing and requested inspection to further assure avoiding violation of the PAC Act.

Regulation of potato shipments under a Federal Marketing Agreement and Order is favored by a large segment of the potato industry in New Jersey. During the last week of February 1956, there were four meetings held throughout the principal white

potato producing areas to explore the possibility of having New Jersey-produced potatoes again regulated under a marketing agreement and order. Such a program was instituted for the seasons of 1950 and 1951, and New Jersey potatoes were well received and gained a favorable reputation and wide distribution under the program. Many growers objected to the inconvenience of the program regulation requiring compulsory inspection and at the end of the 1951 season it was terminated by referendum.

In May 1956 a hearing was held in Hightstown by representatives of the United States Department of Agriculture. The purpose of the hearing was to give all segments of the white potato industry in New Jersey an opportunity to present testimony, for or against the reinstitution of a marketing agreement and order. The results of that meeting were not known by the close of the fiscal year.

This year Federal-State inspectors inspected and certified 493 lots of white potatoes at shipping points throughout the State, covering 142,810 hundredweights. Last year 632 lots were inspected covering 181,664 hundredweights.

Sweet Potatoes

Ordinarily sweet potatoes are not covered as a separate item in this report; however, due to the institution of a Government purchase program for the purpose of removing large storage supplies held by growers, it appears worthy of separate mention.

On March 12, 1956, after an appeal from New Jersey growers, the Government instituted a purchase program to aid sweet potato growers in New Jersey in disposing of surplus sweet potatoes for the purpose of strengthening the sagging commercial markets.

Under this program, Federal funds were used to purchase sweet potatoes in New Jersey for distribution to school lunches, hospitals, institutions and other eligible outlets. The only eligible vendors were growers or grower organizations. Eligible varieties were those commonly produced in New Jersey. Grade requirements were U. S. Commercial or better. The price was $2.00 per bushel

f. o. b. transportation facility, for potatoes meeting program specifications.

Vendors were required to furnish the United States Department of Agriculture with official inspection certificates issued by the Federal-State Inspection Service, certifying quality, condition, grade and count for each shipment. Under this program 33 carlots containing 20,279 bushels were shipped. The movement of these potatoes served to strengthen the commercial market, which was the original purpose of the program.

Other Vegetables

Shipments of fresh asparagus to Canada was continued this year but in much smaller volume than the past few years. For the most part, prices on the domestic markets were well above what Canadian buyers were willing to pay.

Under the Canadian Import Requirements shipments of fresh asparagus to Canada must be inspected and certified as meeting at least the U. S. No. 2 grade for fresh market asparagus. Individual containers must be marked to denote shipper's name and address, grade, country of origin and the words "Inspected For Export." When these regulations are met, inspection certificates covering such shipments must contain the statement "Meets Canadian Import Requirements."

Total asparagus shipments to Canada this season amounted to 14 truck lots containing 8,873 30-pound crates or 266,190 pounds as compared with 435,909 pounds for the same period the year before. Some of the brokers who normally ship to Canada admitted they could realize more on their asparagus in domestic markets this season than they could by shipping to Canada.

In addition to products covered in detail in this report, shipments and storage lots of products such as cabbage, cucumbers, lettuce, onions, peaches, rutabagas and mixed vegetables were inspected and certified. A total of 31 lots was inspected covering 11,751 packages. Federal-State inspectors were also stationed at several of the shipping point fruit and vegetable auction markets for inspection and arbitration purposes.

CANNERY CROPS

Asparagus

The largest individual project within this Bureau is the grading of asparagus for processing. Processors of this crop have gradually spread their receiving stations throughout the producing areas, thereby necessitating more inspection personnel to handle the grading operation than any other commodity.

New Jersey ranks second only to California in asparagus production for fresh market and processing. Approximately 60 per cent of the production in New Jersey goes to processing plants.

Competition to get contracts has resulted in processors establishing receiving stations in production areas to enable growers to make deliveries without undue inconvenience. This has served as an aid in getting growers to sign contracts with processors having a receiving station nearest their farms.

The grading service on crops for processing is permissive and must be requested just as it is for produce moving to fresh market. Contracts between processors and growers form the basis upon which one agrees to buy and the other to sell. Such contracts may be based directly upon the existent standards or may deviate in part or totally from any recognized standards. Most asparagus is contracted on the basis of the New Jersey Standards for Green Asparagus for Canning or Freezing or variations thereof. The standards are flexible in such things as specified length and diameter of spears, point of measurement, and length of minimum green color. Contracts between processors and growers may deviate from grade specifications in these and other factors but, if the Federal-State Inspection Service is requested to do the grading, the contracts must be specific in what such deviations shall be. Contracts not based on standards must clearly state the terms and specifications to be used as a basis for grading. The inspection service has no part in the terms and agreements between procesors and producers. However, it does have a responsibility, through the grading service, in seeing that both parties live up to the terms of the contract.

Actual operation of grading consists of selection of representative samples of asparagus from each load delivered and analyzing it in accordance with contract specifications. Grade percentages are determined in this way and the processor applies the percentages to the entire lot delivered in order to determine

the value of the load. Price per pound for the portion of the load meeting acceptable quality, size, color, etc., is specified in the contract between processor and grower.

Last season there were six different type contracts in operation. This season asparagus was purchased on the basis of five types.

Four of these were based on the New Jersey grade and deviated therefrom and from each other only in individual contract specifications regarding length of spears, diameter of spears and length of green color. Under two of these contracts growers received payment for spears of N. J. No. 1 and No. 2 quality while the other two restricted payment to N. J. No. 1 quality only. The fifth was a canner-grower contract with no particular reference to standards.

During April 1956 arrangements were made with the personnel office in Washington, D. C., for transferring personnel to New Jersey to handle our asparagus grading work. Agreements between the processors, the New Jersey Agricultural Society and the State Department of Agriculture were negotiated as authority to perform the service. Including supervisory personnel, 48 men were needed to handle the grading at the 31 receiving stations operated by five processors and 10 brokers.

The season got under way at the end of April; quality delivered was fair until about the middle of May. Early in May heavy infestations of asparagus beetles did extensive damage and adverse weather prevented growers from exercising effective control measures. Below normal temperatures throughout most of the asparagus season and especially during May resulted in considerably reduced volume for the season.

Most of the volume of asparagus this year, as in other years, was delivered on the basis of N. J. No. 1, 7 inch spear, ⅜ inch minimum diameter at base of spear, 4½ inch minimum green. Under these specifications New Jersey Agricultural Society inspectors graded a total of 43,331,816 pounds this year as compared with 48,599,510 pounds last year. Average grades this season were 72 per cent N. J. No 1 for which growers were paid at contract prices; 7 per cent was below grade and size specifications and 21 per cent was classified as butts. Last year the average grades were 73 per cent N. J. No. 1, 6 perer cent below grade and size and 21 per cent butts.

Asparagus graded on the basis of canner-grower contracts this season totaled 4,844,184 pounds with averages of 87 per cent pay weight and 13 per cent butts. The culls under this contract were too negligible to mention. Last season 4,323,542 pounds were graded with averages of 89 per cent pay weight and 11 per cent butts. Again the fraction of culls was negligible. Total volume of asparagus graded this year under all types of contracts was 53,614,572 pounds while last year it was 57,020,222 pounds.

Tomatoes

The largest and most important crop produced for processing in the Garden State is tomatoes. Normally New Jersey ranks third in the nation in the production of this crop. Although this year it remained in third place in acreage planted, surpassed only by California and Indiana, it dropped to fourth place from the standpoint of tonage, yielding to Ohio which had an 11.7 ton per acre average on its 15,800 acres. Average for New Jersey was four tons on 25,200 acres.

There was good reason for this poor average production in New Jersey. Those who are acquainted with the production of tomatoes in commercial quantities know that weather is the most important factor governing yields and quality. There have been previous seasons when weather conditions were considered unfavorable but none has ever been as detrimental to yield and quality throughout the entire season as was experienced this year. In short, tomatoes were subjected to periods of the driest, the hottest and the wettest weather on record for New Jersey.

Several processing plants began receiving tomatoes in South Jersey as early as the third week in July. This is a relatively early starting date, but the heat and drought conditions forced some of the early set to mature sooner than is normally expected. July deliveries were light in volume and most loads were pale and poorly colored. Inside color of mature fruits fades with high temperatures. The ripening process is severely affected when temperatures are above 90 degrees. Red color will not develop but gives way to yellow. Before the end of July in some fields, particularly those in sandy soil, vines wilted and opened up permitting the sun to burn and blister the exposed fruits while

still green. It was apparent that most fields had a fair crown set but blossoms, which normally set the limb crop, blasted from the heat and dropped off.

The drought was broken on August 7 by heavy rains. On August 12 and again on August 18 there were flooding rains from hurricanes Connie and Diane which struck the eastern seaboard with devastating damage to field crops in general and tomatoes in particular.

By the end of August estimated receipts at processing plants were little more than one-third of those for the same period the year before. One processor and one receiving station closed operations for the season at the end of August. This was the earliest closing date on record.

Volume of tomatoes for processing continued to decline in September and general quality remained relatively poor. Processors who normally continued operations throughout the month, realized that the condition of tomato fields, especially in South Jersey, indicated no possible chance for any material increase in volume. They requested that the inspection force be reduced to a minimum.

By the 10th of the month the original force of 24 men was reduced to only 10. These were handling grading assignments at five processing plants and three receiving stations.

Only in the northernmost areas where the soil is heavy did the quality improve and volume increase after the effects of the drought and floods had dissipated. Tomato fields in these areas held up and vines continued to produce to the end of the season.

Normally it takes from 40 to 45 Federal-State inspectors to handle the tomato grading work. This season there were never more than 24 men assigned. Total volume graded this season was only 36,710 tons. This was less than half of the previous low of 73,549 tons in 1945, when weather conditions were generally adverse to tomato production. Average grades were below those of any previous year. They were 47 per cent U. S. No. 1; 49 per cent U. S. No. 2 and 4 per cent culls. In 1954, 130,462 tons were graded with average grades of 62 per cent U. S. No. 1; 36 per cent U. S. No. 2 and 2 per cent culls.

SUMMARY 1955 CANNERY TOMATO SEASON AND COMPARISON WITH PREVIOUS 10 YEARS

Seasons	Total Tons	U. S. No. 1 (Per Cent)	U. S. No. 2 (Per Cent)	Culls (Per Cent)
1955	36,710	47	49	4
1954	130,462	62	36	2
1953	192,623	66	32	2
1952	127,418	57	39	4
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

Other Cannery Crops

Asparagus and tomatoes are the two main crops grown for processing in New Jersey, but there are several other commodities for which the grading service is requested. Each of these commodities was graded on the basis of the U. S. Standards for Processing for the particular product. The products graded this season and the volume of each are as follows:

Product	Pounds
Carrots	13,536,000
Red Sweet Peppers	336,000
Green Tomatoes	268,000
Sweet Potatoes	200,000
Blueberries	94,000

TERMINAL INSPECTION

The primary project of this Bureau deals with inspection and certification of products grown and packed in New Jersey and shipped both intra and interstate. However, inspections are also made, at the request of receivers, on products moving in interstate commerce to various terminal markets in New Jersey. Most requests are for potato inspections but various other commodities are also inspected in carlot and trucklot quantities, and smaller lots are oftentimes inspected for hospital and institutional supplies. Most of these lots are for replacement of items rejected upon original delivery to the hospital or institution concerned.

The only inspectors eligible to make terminal inspections are those who have been authorized by the USDA by letter of authorization. In addition to the chief of the bureau, there were two

full-time Society inspectors and one Department inspector eligible to do work this fiscal year. All terminal inspections are certified on straight Federal certificates rather than the Federal-State type used for reporting shipping point inspections.

During this fiscal year these men inspected and certified at various terminals the commodities and qualities of each listed below:

Product	Quantity
White Potatoes	33,524 hundredweight
Onions	13,125 - 50-pound sacks
Oranges	6,240 - boxes
Sweet Potatoes	4,118 - bushels
Tomatoes	652 - 60-pound crates
Cabbage	575 - 50-pound sacks
Watermelons	83 - melons

The following table shows the 10-year record of shipping point inspections by products:

TEN-YEAR RECORD OF SHIPPING POINT INSPECTIONS BY PRODUCTS

	46-47	47-48	48-49	49-50	50-51	51-52	52-53	53-54	54-55	55-56
Apples	349	213	100	789	234	796	157	228	369	150
Asparagus	44	3	50	93	46	10	45	36	24	14
Beans	....	....	....	....	1	....	1	2	....	....
Beets	....	....	....	....	1	....	....	1	....	....
Cabbage	4	13	3	8	5	4	7	2	1	6
Carrots	2	5	5	6	....	....	1	1	1	....
Cauliflower	....	1	5	2	....	....	....	....	....	....
Celery	6	11	5	2	....	....	....	....	....	....
Corn	82	100	91	37	67	92	113	135	91	33
Cucumbers	1	2	3	8	....	1	4	49	1	5
Lemons	1	1	....	1	....	....	....	....	....	....
Lettuce	4	1	4	1	2	....	5	1	5	1
Onions	10	38	36	28	15	42	14	27	28	15
Onions, Green	....	....	10	....	....	....	2	1	....	....
Parsley	....	....	....	1	....	....	....	....	....	....
Peaches	3	....	....	1	1	5	3	3	8	1
Peppers	12	78	36	48	....	5	5	2	....	....
Potatoes	11,333	14,066	12,586	10,454	18,429	9,989	1,748	782	632	493
Radishes	....	1	7	3	....	....	....	....	....	....
Rutabagas	....	....	....	....	....	....	3	....	....	1
Spinach	....	1	....	2	....	....	1	....	....	....
Squash	....	....	....	1	6	....	....	....	....	....
Sweet Potatoes	41	5	33	5	26	12	7	24	9	33
Tomatoes	....	6	....	1	1	....	....	4	....	....
Turnips	15	2	....	1	....	....	1	....	....	....
Mixed Fruits & Vegetables	....	357	684	550	....	....	....	....	....	....
Mixed Vegetables	31	210	155	128	3	....	2	1	3	2
Totals	11,938	15,114	13,813	12,170	18,837	10,956	2,119	1,299	1,172	754

The following items were inspected for delivery to State institutions and hospitals, mostly as replacement for items rejected:

Product	Quantity
Onions	211,700 pounds
White Potatoes	135,750 pounds
Oranges	7,840 pounds
Apples	2,400 pounds
Sweet Potatoes	2,300 pounds
Celery	2,300 pounds
Bananas	2,040 pounds
Cabbage	2,000 pounds
Beets	880 pounds
Carrots	650 pounds
Lettuce	480 pounds
Lemons	374 pounds
Grapefruit	320 pounds
Garlic	10 pounds
Total	369,040 pounds

MARKET ACTIVITIES

Because of extremely adverse weather conditions, yields of farm crops and quality of fruits and vegetables suffered from the start of the year. The marketing situation was further complicated because of conditions in the latter half of the previous year. In the spring of 1955, states south of New Jersey suffered a disastrous freeze that not only destroyed crops, but set back the south's marketing period from two to three weeks. Thus, when New Jersey began to harvest its late spring and summer crops growers were faced with very abundant competing supplies from these southern states.

Some examples of volume and prices at the produce auction markets as compared with the summer season of 1954 emphasize this situation. The volume of snap beans, which is a very important crop in New Jersey, was off 20 per cent at the auctions and the price averaged $1.60 a bushel as compared with $2.58 in 1954.

Sweet corn was sold at an average price of $1.25 for 50 ears as compared with $2.17 in 1954 and the volume harvested was 30 per cent lower. A large volume of Jersey sweet corn was not harvested because the price was too low. In the case of spring season lettuce, more than half the acreage in important sections of South Jersey was plowed under because of low prices. Only 140,337 crates were sold at South Jersey markets as compared with

272,474 crates the preceding year. The price to the producer averaged $1.14 a crate as compared with $2.36 a crate in 1954.

There was one exception. The peach crop in the south was virtually wiped out by the freeze in the spring of 1955. As a result, a large part of the New Jersey crop brought very high prices. This favorable situation continued until competition from states west and north of New Jersey became heavy. In 1955, 46 per cent of all peaches sold over the auctions were moved by August 13 at an average price of $5.27 a bushel. This was the week-end date during which the prices declined rapidly. The balance of 54 per cent of peach sales which took place after August 13 brought an average of $2.64 a bushel to the grower.

As in former years, the Division has worked closely with associations and individuals conducting marketing operations. Ten of the markets again supplied weekly statistical material which enabled the Division to carry out certain promotional activities. The weekly price reports as obtained from these market associations are of great value not only to this office but to the Federal Crop Reporting Service and to the College of Agriculture.

Representatives of the Division attended many of the monthly directors' meetings of marketing associations and all of the annual association meetings. There are constant requests for advice or assistance from market managers and from other association representatives. The Division works closely with the shipping point auction associations, as well as with city market associations and commodity groups. A more detailed report of the activities of these groups follows.

Shipping Point Auction Markets

Following the method of reporting in annual reports of former years, information is given on the complete calendar or crop-growing year rather than on parts of the two years which comprise a fiscal year. This report covers the entire marketing year of 1955, in addition to some material relative to the first six months of 1956. According to custom, complete information for the spring of 1956 will be embodied in the annual report of 1956-57.

Weather conditions during 1955 and their effect on the marketing of 1955 crops have already been described. Information on price comparisons was taken from statistics developed at

the produce auction markets. The hurricane and accompanying rainfall in August did do considerable damage which was apparent on the markets through September. But the hurricane did break the drought and conditions improved greatly at the markets and for the fall sales.

Sales during the spring months and, in fact, through June were good. One crop which is very important to New Jersey is strawberries. While prices for strawberries were not as high as in 1954, volume sold more than compensated for this. Strawberries are sold in crates of several sizes. When all sales were computed in terms of the 24-quart crate, the total for 1955 at the auctions was 77,957 as compared with 54,131 in 1954. There were also increases in asparagus, onions, blueberries and raspberries.

Total volume on the nine produce auctions was slightly below 1954, but the value of all sales was $224,145.86 above the value in 1954. Total volume includes some direct sales not made over the auction block.

Seven of the produce auctions operated during part of the last half of the fiscal year. The other two markets will not open until after July 1 because of the lateness of the season in 1956. The volume during the first six months of 1956 was 0.4 per cent larger than in the first six months of 1955, but prices were slightly lower. Average prices per package this year were $2.95 as compared with $3.00 in the first six months of 1955. This is true largely because of slightly lower prices for asparagus. Asparagus is the largest of the spring crops.

The accompanying chart gives the sales volume and cash returns at the nine shipping point markets for the 1955 season. It also compares those sales with the season of 1954.

The following table shows the principal commodities sold at the fruit and vegetable auctions. This table covers the year ending December 31, 1955, and the comparison with the year 1954.

SUMMARY OF SALES AT FRUIT AND VEGETABLE AUCTION MARKETS

Market	Season of 1955 — Number of Packages Sold	Season of 1955 — Value of Sales	Season of 1954 — Number of Packages Sold	Season of 1954 — Value of Sales
Beverly	239,586	$262,556.47	285,013	$406,744.15
Beverly Consigned and Direct	335,339	633,114.43	250,528	556,223.21
Cedarville	528,072	930,571.93	632,524	1,363,173.50
Glassboro	351,229	773,632.30	308,861	621,462.88
Hammonton	278,348	977,689.40	229,093	828,910.53
Hammonton — Blues				
to Processors	158,310 lbs.	30,117.53	335,143 lbs.	73,731.46
Direct	268,467 bu.	307,045.65	.....	.....
Hightstown				
Hightstown	353,368	425,036.11	371,384	410,589.31
Consigned and Direct	40,231	49,372.67	31,230	78,262.35
Landisville				
Landisville	551,766	925,369.58	525,389	855,343.15
Consigned and Direct	85,013	157,982.03	82,079	159,149.67
Pedricktown	157,025	461,795.10	154,308	460,027.45
Swedesboro	747,953	2,051,293.10	622,428	1,773,279.70
Vineland	706,038	1,118,708.99	788,621	1,293,242.07
Totals — By Auction	3,913,385	$7,926,652.98	3,917,621	$8,012,772.74
Value — All Sales	.....	$9,104,285.29	.....	$8,880,139.43

Average price per package (by auction), 1955	$2.026
Average price per package (by auction), 1954	$2.045
Per cent of decrease in price per package, all commodities (by auction), 1955 under 1954	0.929%

(In addition to markets listed, other markets may have had special sales, no record of which is available in Division of Markets office.)

PRINCIPAL COMMODITIES SOLD AT FRUIT AND VEGETABLE AUCTION MARKETS
VOLUME IN 1955 WITH 1954 COMPARISONS

Commodity	Unit	1955	1954
Apples	Bushels	24,330	24,578
Peaches	Bushels	195,763	229,818
Blackberries	Crates, 12 pints	9,030	10,612
Blueberries & Huckleberries	Crates, 12 pints	176,686	155,180
Raspberries	Crates, 12 pints	7,294	6,746
Strawberries	Crates, 24 quarts	77,957	54,131
Asparagus	Crates, 12 bunches	528,914	431,974
Beans, Lima	Bushels	19,310	30,057
Beans, Snap	Bushels	147,776	165,724
Beets	Bushels	16,287	12,692
Broccoli-rabe	Crates	51,710	37,154
Cabbage	Bushels	46,605	55,346
Cantaloupes	Bushels	39,657	38,182
Carrots	Bushels	2,349	2,484
Cauliflower	Crates, 1½ bushel	3,214	7,118
Corn, Sweet	Bushels or sacks	71,040	108,736
Cucumbers and Pickles	Bushels	169,113	193,648
Dandelion	Bushels	25,879	21,749
Eggplants	Bushels	81,025	69,551
Lettuce	Crates, 2 dozen	168,674	311,556
Okra	Climax baskets, 12 quarts	35,553	35,736
Onions	Sacks, 50 pounds	125,308	95,114
Parsley	Bushels	31,592	29,865
Peppers	Bushels	535,833	519,516
Potatoes, Sweet	Bushels	273,236	235,477
Potatoes, White	Sacks, 100 pounds	30,029	16,910
Radishes	Crates	14,122	14,331
Scallions	Crates	15,780	15,293
Squash	One-half bushel	63,499	88,270
Tomatoes	Climax baskets	500,755	542,875
Watermelons	Each	11,577	20,618
Watermelons-Icebox	Bushels	2,505	3,057
Miscellaneous	Packages	493,571	333,523

City Farmers' Markets

The largest and most important of the markets located in cities are owned and operated by farmers' associations. The Division had a very important part in organizing and developing these markets. They are located in Paterson, Newark, Trenton, and Bradley Beach (Asbury Park). Representatives of the Division have met on occasions with the directors of three of these

markets during the year and have been of some assistance in an advisory way. For the last few years sales have fallen off on the wholesale city farmers' markets. Part of this has been due to a reduction in farm acreage near the cities. Some is due to the fact that labor conditions are so tight that farmers prefer to sell in a way that does not require so much of their time. The system of super markets also has affected the markets.

The Trenton Farmers' Market is an exception to the situation. This market sells at retail and has been of great value to a large consuming public in and near Trenton.

For 30 years we have obtained a weekly report from the largest of South Jersey's city farmers' markets. This is the Atlantic City Market. It is owned and operated by Atlantic City. The same situation prevails in this market. Sales become fewer each year. Only a few years ago total sales value for a year was more than double the total value for the present year. During the past year only 195,100 bushels of fruits and vegetables were sold as compared with 209,600 bushels the previous year. There were 36,650 dozens of eggs and 28,251 pounds of poultry as compared with 48,715 dozens of eggs and 46,252 pounds of poultry in the 1954 - 55 year.

Miscellaneous

In past years this report has described the work of "The Cooperative Marketing Associations in New Jersey, Inc." This organization represents 16 marketing cooperatives with thousands of farmer members. The State association has an annual meeting and occasional special meetings. Active committees work for the good of New Jersey's cooperative marketing groups. In the State organization the 10 member associations that market fruit and vegetables meet separately during the crop production year. Five meetings of this group were held in the fiscal year. The association, through its fruit and vegetable section finances *Auction News* which is prepared and distributed weekly by the Bureau of Market Reporting and Cooperatives, and also finances auction market advertising through an arrangement with the Division of Information. Funds are raised by prorating cost among the nine produce auctions. The director has served as secretary of this association since its organization more than 20 years ago.

The Division again aided in the arrangement of fruit and vegetable displays at the New Jersey Mid-Atlantic Farm & Home Show. It was instrumental in staging a sweet potato exhibit of packed half-bushels of sweets and judged the exhibits. The bureau chief and supervisor also staged an apple grading and identification contest for vocational agricultural and F. F. A. students and awarded prizes. They also put up an apple display illustrating the official U. S. grades used in New Jersey.

BUREAU OF MARKET REPORTING AND COOPERATIVES

Reliable and timely information on supply, movement and price is essential to intelligent, orderly and efficient marketing.

A cooperative, to be successful and strong, must be organized carefully and legally, have clarity of purpose, be adequately financed, be managed efficiently and impartially, and provide a service to its patron members that is equal to or better than the service of competitors.

The Bureau has certain responsibilities in both of these lines of work. In handling these programs through one bureau important services are correlated. The crop and marketing information program, carried on though the press and radio and by direct mailing, helps New Jersey producers plan their crop schedule to receive the best returns. The cooperative project is designed to help cooperatives remain strong through effectual internal programs and to be able to continue the services to their members for which they were formed.

The reason for close correlation of work is that in either of these two programs certain factors may develop that would favorably or adversely affect the other program. As such a condition arises, the situation can quickly be either explained or developed in a helpful manner.

New Jersey cooperatives market from 60 to 80 million dollars worth of New Jersey production each year. This includes fruits, vegetables, livestock, eggs, poultry, and fish as well as some field crops. A cooperative handling a large volume of a commodity may recognize a weakness or strength before it is apparent in the decreasing terminal market trading. At other times, general trading conditions throughout the country may emphasize this condition before it is recognized in local trading.

MARKET REPORTING

The Bureau's crop and market information service includes all kinds of information that may have some effect on the marketing of a New Jersey grown crop. The service begins with the farmers' intentions-to-plant report. This covers all competing areas and is followed by the estimated acreage report. As the season progresses, an expected yield and production report is published that influences long-range marketing. Disease troubles, insect pests and weather in competing areas are covered. The truck supply, export possibilities, and Government regulations, as they affect New Jersey farmers, are brought to growers' and shippers' attention. Information is also given on packages to be used and the situation in supplies for farmers' needs. Also, sometimes included are such items as the effect of labor difficulties in allied agricultural industries, promotional activities in competition, the situation in the labor market and a host of other pertinent items of interest. The Bureau staff analyzes, sifts and compresses this information into short paragraphs for easy reading by interested producers.

Distribution of this information is by Bureau mailings such as the *Weekly Market Review*, *Market Conditions* and *Daily Potato Destinations Reports*. *The Truck Crop News* and newspaper articles are prepared and released in cooperation with other agencies. Spot news such as effects of floods, hurricanes and drought are prepared for the wire services at their request.

Contacts are maintained with various agencies of the United States Department of Agriculture, departments of agriculture in other states, grower sales organizations over the country as well as within the State, individuals who are growers, shippers or receivers and with organizations representing an allied industry such as package manufacturers.

Promotional Work

A continuation of the crop and market information service stretches from the Bureau in the opposite direction toward the consumer as a promotional effort. Articles are prepared for *The Packer* and *The Produce News* giving first buyers and receivers up-to-date information on products available and the quality and volume that can be expected. Going further toward the consumer is information given to food editors which assists them in writing their columns. These columns usually pinpoint the dates that consumers can expect certain well-known New Jersey

items to appear in the local stores and usually include menus in which the product can be used. Asparagus, berries, sweet corn, tomatoes, peaches, apples and peppers are items that lend themselves well to this type of promotion.

Advertising

A program is carried on in cooperation with the Division of Information and The Cooperative Marketing Associations in New Jersey, Inc., which, through paid advertising, pinpoints the auction markets and the commodities that are offered in volume during the week. Advertising is placed in the trade papers and is aimed at attracting new buyers and new markets. The *Auction News* is an information sheet paid for by the auction markets on a prorated basis which is mailed to some 700 buyers and which goes into detail as to expected volumes and varieties of all of the commodities offered at each of the auction markets for the coming week.

Daily Price Reporting

New Jersey does not have a separate daily market reporting service for its growers. Because of our position between two of the greatest primary receiving markets, New York and Philadelphia, we have for many years had a cooperative agreement with the Federal Department of Agriculture whereby the State pays a small part of the salary of market reporters in those two cities and in turn the daily reports that are issued from the market news offices in New York and Philadelphia are made available to our New Jersey people. Special reference in those reports is directed to products for sale from New Jersey.

Daily Potato Destinations Reporting

Throughout the shipping season reports are compiled daily on the destinations of New Jersey potatoes in hundredweight by states. This important function is fully under control of and was organized by this Division. Information is disseminated by first-class mail to cooperators and to the USDA where it is placed on their leased wire for release in other areas.

Weekly Market Reports

The *Weekly Market Review*, previously mentioned, is a review

of prices of feeds, grains, eggs, poultry, livestock, fruits and vegetables, and minimum milk prices. It is a four-page publication whose value to producers is acknowledged by the requests and receipt of first-class postage from several to speed the delivery. This report is issued throughout the year except during the week between Christmas and New Year's.

Market Conditions Reports are issued as the season requires on 10 important commodities. If the marketing season is a long one, such as is the case for apples or sweet potatoes, more issues devoted to these commodities are published. For a short season commodity like strawberries, only one or two reports are published. One may precede our own season by many weeks and will feature expected competition. Another may be at the beginning of our season and report actual market conditions to be faced. *Market Conditions Reports* are carried as a service over almost all of the year.

Annual Potato Summary

The *Annual Potato Summary* is prepared in circular form and is a fairly complete digest of conditions during the planting, harvesting and marketing season for the crop year. Requests for this circular have come mostly from growers, dealers, trucking associations, railroad companies, agricultural economists and managers of potato market groups. Distribution of the crop by states is one of the important items in the circular. This compares the yearly distribution of the crop so that efforts can be made to increase acceptance in areas where the volume has declined. Actually, for the past few years our marketing, geographically, has not been restricted but has expanded in some instances. New Jersey sells potatoes in 30 states and does some exporting.

COOPERATIVES

The work with cooperatives is both regulatory and educational. The regulatory part of the work is outlined in the New Jersey Agricultural Co-operative Associations Act; Chapter 13, Title 4 of the Revised Statutes. Among other requirements the State law requires the filing of financial statements with the Secretary of Agriculture and provides a penalty in the form of dissolution of the cooperative if this is not done for three consecutive years.

Actually, the regulatory work is a minor part of the project, which consists mainly of service and information activities. Services include consultations on by-law amendents, incorporation and allied functions. An important part of the information work is the publication of *New Jersey Cooperative News*, which is mailed to the directors and managers of record. The *News* carries articles explaining changes in the law, if any, at both the State and Federal level, and other information which may strengthen cooperatives in their activities.

The chief of the Bureau has been in charge of groups of young people who have attended the American Institute of Cooperation at Cornell and Purdue universities in the last two years. The Institute is an educational organization devoted entirely to the problems of cooperatives. The bureau chief's attendance at state councils of cooperatives meetings in New York, Pennsylvania and Delaware has been very helpful in handling similar problems that occur in our own State.

The bureau chief was again responsible for planning the afternoon program devoted to cooperative work during Farmers Week. For this meeting nationally known speakers were obtained. The Farm Show at Atlantic City in 1955 presented another opportunity for a cooperative day program, which featured a Presidents' Luncheon attended by some 80 persons. The principal topic was "Area Promotion or Area Competition." Later the group was divided into marketing, purchasing and service cooperatives interests wth different topics for discussion and suitable speakers.

During the fiscal year four cooperatives were incorporated, two cooperatives were dissolved for a net gain of two during the year and a June 30, 1956, total of 117.

In carrying out its work, the Bureau has cooperated with many groups, including the Extension Service, the New Jersey Agricultural Society, the New Jersey Horticultural Society, The Cooperative Marketing Associations in New Jersey, Inc., the New Jersey Crop Reporting Service, the USDA Market News office and many other agencies and organizations.

DAIRY PRODUCTS MARKETING

Supervision of this program had been handled by the division director for 17 months, since the loss of a supervisor in the

summer of 1954. On January 1, 1956, a supervisor of dairy products standardization was appointed subject to promotion approval by Civil Service. The new supervisor is a man of long experience in the work of the project and well liked by the cooperating farmers and dealers with whom we work. Since taking over at the beginning of the calendar year, he has instituted some changes in the work which have proven to be constructive, and has developed an improved morale in other employees in the project. His appointment has greatly improved the service rendered to dairymen in the State.

The supervisor has attended several dairy farmer meetings, not directly connected with our official grades work. He has attended some Office of Milk Industry hearings and attends all of the State Dairy Council meetings. He is a member of the marketing committee of the State Dairy Council. These contacts make it possible for him to speak for the Division on dairy matters that come to his attention. Most of his meetings and other contacts are in connection with the official milk grading work of the Division and are referred to under the following heading.

NEW JERSEY OFFICIAL GRADES

The volume of milk sold under Division supervision increased during the year to 125,820 quarts daily. This is about a 5 per cent rise over a year ago. At the close of the year there were 20 dealers handling the supply from regulated farmers. Five of these were producer dealers, 14 were purchasing dealers and one produced and purchased additional supplies. There were 327 dairy farmers, or an increase of 18 over the preceding year, whose production was under supervision.

During the fiscal year the semi-annual physical examination of all cows in the program was maintained. There were 11,618 cows examined by approved veterinarians. The accompanying table is a summary of both fall and spring examinations and the totals indicate results of two periods of examination.

It is interesting to note that whereas 20 years ago at least one-third of the milk produced in this program was sold as raw milk, today only one of these 20 dealers handles any raw milk.

During the spring semi-annual physical examination of herds,

a change in practice was made. Formerly, the veterinarians left one copy of the results of the physical examination with the producer and mailed two copies to the State Department of Agriculture. The Department in turn forwarded one copy to the respective milk dealers. Under the new procedure, the veterinarian leaves two copies of the physical examination report with the producer and instructs the producer to forward one of the copies to his dealer with the next delivery of milk. The veterinarian is responsible for sending one copy to the Department of Agriculture. In herds where there are cows infected with mastitis, the veterinarian leaves three official reinspection report blanks with the producer and instructs him to call his own veterinarian to re-examine the infected cows as soon as he thinks they have recovered. The dairyman must then forward one copy of the recovery statement, signed by his veterinarian, to his milk dealer with the following delivery of milk and one copy to the Department of Agriculture, keeping one copy for his own records. This system has worked out very satisfactorily for the producer, dealer and the Department of Agriculture by eliminating time in getting the information to those concerned.

After much thought and discussion, the supervisor suggested a change in the dairy farm and processing plant score sheets to conform with the new point system which was recommended by the New Jersey Department of Health and adopted by several municipal boards of health. This suggestion was approved by the director of the division. New forms are in the process of being printed and will be put into effect in the fall when the semi-annual inspections of farms under supervision are due.

Once each year every milk plant employee, and farm employee where milk is sold as raw must be examined by a physician to determine if he is medically satisfactory to handle milk. In the past year 151 employees were given milk handlers' cards by the Department of Agriculture after satisfactorily passing the medical examination.

Several municipal boards of health have accepted the Department of Agriculture milk handlers' certificates. This has eliminated duplication and expense which previously existed. Medical certificates issued by the Department are due July 1 of each year. Some municipal boards of health require their certificates January 1. After some discussion of this matter a plan was worked out by the supervisor whereby Department of Agriculture certificates

would be accepted by municipal health officers.

The New Jersey Dairy Laboratories in New Brunswick, of which Dr. David Levowitz is director, has made the microscopic analyses of all milk samples taken in the Division's control work. During the year 4,567 samples were collected and analyzed and reports sent from this office to producers, dealers and health officers cooperating.

During the year 85 warning letters were sent out from this office to producers having two consecutive high counts. There were eight producers suspended from their market because of a third consecutive high count but all were reinstated as soon as sanitary conditions had been corrected or a satisfactory bacteria count had been secured from the producer.

RESULTS OF VETERINARIAN EXAMINATION OF HERDS BY COUNTIES

County	Herd Examinations	Animal Examinations	Animals Passed	Animals Isolated	Animals Condemned
Burlington	38	1,425	1,402	23	....
Hunterdon	273	8,934	8,849	81	4
Mercer	22	782	768	13	1
Monmouth	23	876	854	22	....
Morris	89	3,264	3,248	16	....
Somerset	193	5,968	5,899	68	1
Sussex	38	1,235	1,209	26	....
Warren	17	752	751	1	....
Totals	693	23,236	22,980	250	6

Herds in which all animals were passed	536	or 77.34%
Herds in which animals were accepted	157	or 22.66%
Animals passed	22,980	or 98.90%
Animals isolated	250	or 1.08%
Animals condemned	6	or 0.02%

During the months of March, April and May, 1956 the dairy inspectors and the supervisor of the dairy products standarization project took a special course in milk sanitation at Rutgers University which was sponsored by the State Department of Health. The course ran for 10 weeks and was held each Wednesday night for that period. The subjects lectured on were the laws pertaining to the production, processing and care in the distribution of milk and milk products. The importance of the water supply and disposal systems on the farms and processing plants was emphasized, as well as the condition of the equipment which comes directly in contact with the milk. The importance of a sufficient supply of hot water, steam and refrigeration in order to secure and maintain a satisfactory finished product for the consumer was also stressed.

The supervisor attended several hearings called by the Office of Milk Industry. These hearings were called for all interested parties to give testimony in behalf of price changes. As the flush season of 1956 was at its height, the Office of Milk Industry called a hearing for June 4, and as a result of that hearing, all wholesale and retail prices were to be restored as of July 1, 1956. No controls on these prices have been in effect since February 1955.

The Division was able to secure a supply of leaflets on New Jersey produced milk to be circulated through the cooperating milk dealers and other methods to advertise the milk produced, processed and sold under the supervision of the Department of Agriculture. These leaflets were a reprint of one used a few years ago. There was quite a demand for a new supply.

LIVESTOCK AUCTION MARKETS

Sales on the six livestock auctions operating in New Jersey were slightly below the sales in the 1954 - 55 year. The difference in volume and total receipts, however, was less than 1 per cent. Three of these markets are operated by associations incorporated under the cooperative law. The other three are privately owned and operated. The auctions have filled a real need in New Jersey. Their weekly reports are a valuable source of material for the Division's marketing work.

The two tables accompanying this section show the operation of the New Jersey livestock auction markets. The first table is similar to the one given in the report of former years and shows volume and total receipts by markets for the fiscal year.

The second table breaks down reports for a full calendar year and gives the kind of livestock, the volume and the average price for each species by markets.

NEW JERSEY LIVESTOCK AUCTION MARKETS

1955 to 1956

Market	Number of Head	Value
Flemington	20,913	$ 701,220.85
Hackettstown	51,660	2,522,035.54
Mount Holly	3,838	78,828.50
New Egypt	10,194	616,679.87
Sussex	43,188	1,830,851.10
Woodstown	30,449	1,451,789.94
Totals	160,242	$7,201,405.80

SUMMARY OF LIVESTOCK SOLD OVER NEW JERSEY AUCTIONS BY SPECIES DURING 1955

Species	Flemington Number of Head	Flemington Weighted Av. Price Per Cwt.	Hackettstown Number of Head	Hackettstown Weighted Av. Price Per Cwt.	Mount Holly Number of Head	Mount Holly Weighted Av. Price Per Cwt.
Cows	2,160	$10.58	11,815	$10.73	162	$ 9.86
Bulls	115	13.43	790	14.28	5	12.80
Heifers	418	13.34	1,072	12.78	4	11.35
Steers	42	15.60	401	18.29	11	11.63
Calves	16,467	18.55	32,240	18.77	3,348	16.85
Hogs	1,237	13.94	1,201	15.32	63	15.92
Sheep	367	7.38	812	7.39	18	9.48
Lambs	505	18.05	1,503	17.98	52	22.66
	New Egypt		Woodstown		Sussex	
Cows	2,961	11.36	4,575	11.35	10,958	10.13
Bulls	190	15.07	380	14.91	617	14.57
Heifers	2	17.00	575	15.30	584	12.22
Steers	414	19.78	925	19.58	91	15.64
Calves	6,087	17.97	15,511	19.37	31,510	16.23
Hogs	105	13.29	3,576	14.93	139	16.10
Sheep	169	7.99	379	7.28	198	8.52
Lambs	240	19.15	1,331	19.20	217	16.27

Weighted average price is average price each day of sale weighted by number of animals sold.

BUREAU OF POULTRY SERVICE

The poultry industry recession persisted during fiscal year 1955 - 56, but with some improvement as the New Jersey annual average price of eggs rose nearly 6.5 cents per dozen. New Jersey market eggs have averaged below 50 cents per dozen wholesale at the farm for 24 of the 30 months from January, 1954 to July, 1956. There were only 24 months of comparably low prices during the previous eight years, January 1946 to January 1954. Poultry meat prices also remained at relatively low levels. Feed costs were slightly lower than the previous year.

In spite of unfavorable poultry industry economic conditions, the Bureau of Poultry Service continued to perform its assigned duties at near record levels of accomplishment. Five new egg marketing projects joined the official grading program. Although there were 10 fewer hatcheries under State supervision, principally because the owners have gone out of business either permanently or for the duration of the recession, nearly one - third more chicks were produced by the supervised hatcheries.

The New Jersey market egg flock was reduced nearly 3 million birds during the past year to a total of 15,979,000 birds. The hens and pullets population had been growing for the previous 20 years, having reached the 5 million mark in 1939, 10 million in 1949, and

18,864,000 on January 1, 1955. The State's human population is nearing 5¼ million, therefore, domestic consumption of an egg a day per capita provides an outlet for the egg production of about 11 million birds.

POULTRY STANDARDIZATION

Operating under the N. J.-U. S. Poultry Improvement Plan for the 21st year, the Bureau certified 982,779 birds in 467 flocks in 18 counties, with 102 hatcheries cooperating. The number of birds in participating flocks was 5 per cent less than the record high of 1,034,633 birds in 1952-53, and 2.77 per cent more than 1954-55. Production of chicks in the State supervised hatcheries was approximately 38,500,000, about 30 per cent more than the previous year's 29,000,000. About 350,000 turkey poults were produced under State supervision.

There were 117 privately-employed workers certified as flock selectors, and 123 as pullorum-typhoid testing agents working in various phases of the N.J.-U.S. National Poultry Improvement Plan. The performance of each selecting and testing agent is periodically checked by Department personnel.

The State inspector and seasonally employed assistant are supported by fees paid by participants.

Department personnel blood-tested and selected 339,156 birds (34.5 per cent of the total) and 643,623 birds were handled 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. The work of the agents has been very satisfactory. Selecting agents operated in two breeding stages, Approved and Certified. Testing agents operated in both Passed and Clean pullorum-typhoid stages.

New Jersey now has 458 Pullorum-Typhoid Clean flocks in a total of 467 hatching egg flocks under supervision. The number of birds in the Clean classification increased from 855,510 in 1954-55 to 969,526 in 1955-56.

The average participating flock numbered 2,104 birds last year, three times greater than the average of 10 years ago.

The total capacity of the participating hatcheries in New Jersey is 13,295,330 eggs per setting. The average hatchery capacity is 130,347 eggs per setting, about 40.7 per cent greater than 10 years ago.

The classifications used this season were:

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

The scope of the services the poultry standardization program rendered is indicated in Poultry Table 1.

POULTRY TABLE 1

N.J.-U.S. Improvement Plans	Number in 1955-56	Number in 1954-55	Per cent Changes in 1955
Number of flocks cooperating	467	510	— 8.4
Total number of breeders	982,779	956,233	+ 2.8
Number of hatcheries cooperating	102	112	— 8.9
Hatchery capacity cooperating	13,295,330	13,456,510	— 1.19
Hatchery capacity in New Jersey	15,545,000	15,150,000	+ 2.6
Number of birds in pullorum-typhoid classes only	875	345	+153.6
Number of birds in Approved stages	942,547	904,042	+ 4.3
Number of birds in Certified stages	39,357	51,846	— 24.0
Number of birds in ROP Trapnest	4,203	3,203	+ 31.2
Number of birds qualified in Register of Merit	213	327	— 34.8
Number of birds qualified for Honor Roll	101	257	— 60.7
Number of females in ROP breeding pens	1,049	1,100	— 4.6
Number of ROP cockerels leg banded	3,155	4,381	— 27.9
Percentage of birds reacting to the pullorum-typhoid test	0.0228	0.0238	....
Number of flock inspections	340	759	— 55.2
Number of hatchery inspections	112	233	— 51.9
Number of ROP inspections	19	31	— 38.7

Poultry Tables 2 and 3 give the classification and distribution of birds under supervision, and the number of birds banded by breeds and by counties. Ocean County leads in numbers of breeding birds, followed by Monmouth, Cumberland and Hunterdon.

White Leghorns accounted for 80.1 per cent of the total of all varieties enrolled in the State program. New Hampshires and Rhode Island Reds went down in numbers, the former significantly to 9,224 birds compared with 28,188 birds in 1954-55. Plymouth Rocks also decreased in number, there having been 3,357 of the Barred variety and 19,849 White Rocks. White and buff Cornish stock continued to grow in popularity because of the demand for Cornish males to be crossed on other varieties to produce meatier-type progeny.

POULTRY TABLE 2
CLASSIFICATION AND DISTRIBUTION OF BIRDS UNDER SUPERVISION IN THE POULTRY STANDARDIZATION PROGRAM
Number of Birds

County	Number of Flocks	N. J. - U. S. Certified Pullorum-Typhoid Passed	N. J. - U. S. Certified Pullorum-Typhoid Clean	N. J. - U. S. Approved Pullorum-Typhoid Passed	N. J. - U. S. Approved Pullorum-Typhoid Clean	N. J. - U. S. Pullorum-Typhoid Passed	N. J. - U. S. Pullorum-Typhoid Clean	Totals
Atlantic	13	.....	.....	388	32,703	.....	.....	33,091
Bergen	4	.....	.....	.....	11,663	.....	.....	11,663
Burlington	12	.....	.....	.....	11,017	.....	.....	11,017
Camden	1	.....	.....	.....	521	.....	.....	521
Cape May	2	.....	.....	.....	10,297	.....	.....	10,297
Cumberland	90	.....	2,928	.....	144,416	.....	.....	147,344
Gloucester	23	.....	17,728	.....	31,295	.....	.....	49,023
Hunterdon	72	.....	478	.....	133,946	.....	.....	134,424
Mercer	20	.....	3,027	8,444	34,082	.....	.....	45,553
Middlesex	22	.....	.....	726	47,746	.....	573	49,045
Monmouth	51	.....	.....	.....	190,968	.....	.....	190,968
Morris	1	.....	.....	.....	619	.....	.....	619
Ocean	77	.....	15,196	.....	203,448	.....	.....	218,644
Passaic	9	.....	.....	3,695	1,166	.....	.....	4,861
Salem	38	.....	.....	.....	37,134	.....	.....	37,134
Somerset	14	.....	.....	.....	28,183	.....	.....	28,183
Sussex	15	.....	.....	.....	7,711	.....	302	8,013
Warren	3	.....	.....	.....	2,379	.....	.....	2,379
Totals	467	.....	39,357	13,253	929,294	.....	875	982,779

POULTRY TABLE 3

NUMBER OF BREEDERS, BY COUNTIES, BREEDS OR VARIETIES

County	S. C. White Leghorns	New Hampshires	Rhode Island Reds	Barred Rocks	White Rocks	Cornish	Crosses	Incross bred	Others	Turkeys	Totals
Atlantic	23,324	.....	882	.....	.....	.....	8,885	.....	.....	.....	33,091
Bergen	10,846	184	.....	.....	633	.....	.....	.....	.....	.....	11,663
Burlington	4,987	.....	.....	.....	.....	.....	5,235	.....	.....	795	11,017
Camden	.....	.....	.....	.....	.....	.....	.....	.....	.....	521	521
Cape May	10,297	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,297
Cumberland	105,796	363	3,988	.....	1,710	2,302	27,360	5,575	250	.....	147,344
Gloucester	35,784	895	.....	.....	2,334	469	8,983	.....	.....	558	49,023
Hunterdon	88,244	873	4,742	2,929	8,765	589	27,414	.....	112	756	134,424
Mercer	28,531	449	1,307	.....	2,326	.....	3,335	8,444	870	291	45,553
Middlesex	46,916	205	.....	26	.....	.....	.....	.....	573	1,325	49,045
Monmouth	153,193	515	.....	.....	370	.....	25,360	11,530	.....	.....	190,968
Morris	619	.....	.....	.....	.....	.....	.....	.....	.....	.....	619
Ocean	217,195	.....	.....	.....	276	.....	.....	.....	19	1,154	218,644
Passaic	2,138	1,332	344	148	617	.....	.....	.....	19	263	4,861
Salem	25,767	4,408	.....	254	2,818	.....	3,887	.....	.....	.....	37,134
Somerset	26,261	.....	1,620	.....	.....	.....	120	.....	.....	182	28,183
Sussex	5,577	.....	775	.....	.....	104	.....	.....	331	1,226	8,013
Warren	2,215	.....	.....	.....	.....	.....	.....	.....	.....	164	2,379
Totals	787,690	9,224	13,658	3,357	19,849	3,464	110,579	25,549	2,174	7,235	982,779

Interior egg quality improvement work through Record of Peformance, family breeding, started five years ago, continues to progress. Three New Jersey ROP breeders are selecting poultry families for the factor of interior egg quality, with the Bureau's technical assistance.

Participation in the Turkey Improvement Program totaled 7,235 birds in 1955 - 56, a 21.8 per cent decrease from 1954 - 55.

Three new agents qualified at the 15th annual school for flock selectors and pullorum-typhoid testers. Instructors from the College of Agriculture cooperated with the Division of Markets and the Division of Animal Industry.

One Federal supervisor was in the State once this year. The National Poultry Improvement Plan Conference in Colorado Springs was attended by Earl W. Garrison, Bridgeton, as the State's official delegate, accompanied by one staff member.

Lists of participating breeding flocks and hatcheries, with their official ratings, were published in *Farm Service News*.

COOPERATIVE MARKETING

The cooperative egg marketing associations with which the Bureau of Poultry Service worked in various programs last year handled 1,529,894 cases of eggs, all wholesale graded, approximately one - quarter of the State's total production. The foregoing statistics include only six "egg auctions" and one "bargaining cooperative," FARMCO. The Bureau also worked with seven other bargaining cooperatives, but no statistics can be reported because no official inspection was performed, and no volume and price reporting program is now feasible.

Actual volume and dollar value of eggs is reported for the auction markets located at Vineland, Mount Holly, Hightstown and Flemington, which are under State inspection supervision; and at Hackettstown and Paterson, which operate on market grades. These six cooperatives marketed 1,181,742 cases of eggs, 1.24 per cent less than last year. The total value was $17,167,436.32, 10.10 per cent more than the previous year. The average price per case of eggs, regardless of size or quality, was $14.53 or 48.43 cents per dozen, 15.3 per cent more than the 1954 - 55 average of 42.0 cents per dozen.

Vineland again commanded the highest annual average price

POULTRY TABLE 4
SUMMARY OF EGG AND POULTRY AUCTION MARKETS
July 1, 1955 to June 30, 1956

Market	Cases of Eggs	Value of Eggs	Crates of Poultry	Pounds of Poultry	Value of Poultry	Total Value
Flemington	410,378	$5,945,699.42	54,586	2,582,673	$573,614.80	$6,519,314.22
Hackettstown	24,271	335,541.30	8,425	495,219	106,339.54	441,880.84
Hightstown	132,372	1,912,376.76	13,292	650,362	132,856.28	2,045,233.04
Mount Holly	55,679	779,465.93	15,589	822,945	190,174.17	969,640.10
Paterson	41,543	592,546.62	7,192	403,318	74,865.73	667,412.35
Vineland	517,499	7,601,806.29	.....	.....	.....	7,601,806.29
Totals	1,181,742	$17,167,436.32	99,084	4,954,517	$1,077,850.52	$18,245,286.84

Average price per case, 1955-56 $14.53
Average price per case, 1954-55 $12.60

Average price per pound of live poultry, 1955-56 $0.217
Average price per pound of live poultry, 1954-55 $0.202

of $14.69 per case; Flemington's annual average price was $14.69: Hightstown averaged $14.45; Paterson, $14.26; Mount Holly, $14.00; and Hackettstown, $13.82.

Five cooperative auctions conduct live poultry sales and sold a total of 4,954,517 pounds of poultry which was 764,205 pounds or 13.36 per cent less than the previous year. The total value of live poultry was $1,077,850.52 which was 0.69 per cent less than last year. The five auctions' 1955-56 average-per-pound price of 21.7 cents was 0.74 per cent more than the previous year's 20.2 cents. On the basis of individual markets, Mount Holly had the highest average price per pound of 23.1 cents per pound; Flemington averaged 22.2 cents; Hackettstown, 21.5 cents; Hightstown, 20.4 cents; and Paterson, 18.6 cents per pound for all varieties and qualities of live poultry items.

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.

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

Month	1955	For Comparison 1954	1939
July	$0.4497	$0.4510	$0.2647
August	.5299	.4355	.2678
September	.5274	.4038	.2948
October	.4790	.3643	.3029
November	.5123	.4180	.3318
December	.5829	.3857	.2453
	1956	1955	1939
January	.5235	.3852	.2372
February	.4450	.4700	.2260
March	.4758	.4738	.2305
April	.4483	.4342	.2218
May	.4284	.3870	.2146
June	.4211	.4450	.2384

The development of the marketing program is traced in Table 6 "Ten Years of Progress in New Jersey Poultry and Egg Auction Sales."

POULTRY TABLE 6

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

Year	Number Cases of Eggs	Number Crates of Poultry	Pounds of Poultry	Total Combined Value Eggs and Poultry
1955-56	1,181,742	99,084	4,954,517	$18,245,286.84
1954-55	1,348,732	112,629	5,718,722	18,148,548.35
1953-54	1,334,554	116,074	5,869,994	22,068,208.60
1952-53	1,291,951	114,313	5,869,308	23,083,519.57
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
Totals	10,506,006	1,090,580	57,023,766	$178,617,650.08

Auction Markets Egg-Feed Ratio

Study of the appended ratios of egg prices compared with feed costs (Poultry Table 7) reveals that six months (August, September, November and December, 1955 and January and March, 1956) were favorable economically. A rule of thumb assumption is that an egg-feed ratio of 8 dozen = 100 pounds is an indication of poultry prosperity. The entire previous year July, 1954 to June, 1955 had monthly ratios reflecting economic conditions unfavorable for market egg production. Because respiratory diseases made sharp inroads on egg production during the past winter, the improved prices of that period were partially offset by lowered volume marketed by those farmers whose flocks were affected.

The annual range of egg price variation occurred between the December, 1955 high of 58.29 cents and the June, 1956 low of 42.11 cents per dozen.

POULTRY TABLE 7

NEW JERSEY EGG AUCTIONS—EGG-FEED RATIO

		JULY			AUGUST			SEPTEMBER		
		1955	1954	1939	1955	1954	1939	1955	1954	1939
EGGS										
Total dozens sold		2,604,570	3,131,760	891,300	2,752,980	3,363,840	900,540	3,077,130	3,726,960	855,660
Total price paid	dollars	1,171,326	1,412,458	235,920	1,459,039	1,464,841	241,138	1,622,851	1,504,788	252,290
Av. price per doz.	dollars	.4497	.4510	.2647	.5299	.4355	.2678	.5274	.4038	.2948
FEED										
Av. 100 lb. scratch	dollars	3.95	4.10	1.60	3.85	4.15	1.50	3.80	4.10	1.86
Av. 100 lb. mash	dollars	4.50	5.00	2.18	4.50	5.00	2.16	4.40	4.95	2.02
Av. laying ration	dollars	4.23	4.55	1.89	4.18	4.58	1.83	4.10	4.53	1.94
RATIOS										
Doz. eggs required to buy 100 lb. feed		9.4	10.1	7.1	7.9	10.5	6.8	7.8	11.2	6.6
No. lb. feed one doz. eggs will buy		10.6	9.9	14.0	12.7	9.5	14.6	12.9	8.9	15.2

		OCTOBER			NOVEMBER			DECEMBER		
		1955	1954	1939	1955	1954	1939	1955	1954	1939
EGGS										
Total dozens sold		3,137,850	3,702,060	995,430	2,988,150	3,568,500	969,330	2,811,060	3,362,880	1,135,350
Total price paid	dollars	1,503,066	1,348,560	301,571	1,530,880	1,491,507	302,285	1,638,548	1,296,899	278,465
Av. price per doz.	dollars	.4790	.3643	.30296	.5123	.4180	.3118	.5829	.3857	.2453
FEED										
Av. 100 lb. scratch	dollars	3.75	4.10	1.78	3.70	4.10	1.77	3.70	4.10	1.83
Av. 100 lb. mash	dollars	4.45	4.80	2.54	4.35	4.80	2.25	4.35	4.85	2.58
Av. laying ration	dollars	4.10	4.45	2.16	4.03	4.45	2.14	4.03	4.48	2.20
RATIOS										
Doz. eggs required to buy 100 lb. feed		8.6	12.2	7.1	7.9	10.6	6.9	6.9	11.6	9.0
No. lb. feed one doz. eggs will buy		11.7	8.2	14.0	12.7	9.4	14.6	14.5	8.6	11.2

POULTRY TABLE 7—*Continued*

NEW JERSEY EGG AUCTIONS—EGG-FEED RATIO

		JANUARY			FEBRUARY			MARCH		
		1956	1955	1939	1956	1955	1939	1956	1955	1939
EGGS										
Total dozens sold		2,682,060	3,219,690	1,099,080	2,798,340	2,875,470	1,085,550	3,250,680	3,650,700	1,372,230
Total price paid	dollars	1,404,152	1,240,248	260,807	1,245,371	1,351,554	245,377	1,546,828	1,729,583	316,304
Av. price per doz.	dollars	.5235	.3852	.2373	.4450	.4700	.2260	.4758	.4738	.2395
FEED										
Av. 100 lb. scratch	dollars	3.70	4.10	1.54	3.70	4.10	1.54	3.70	4.10	1.56
Av. 100 lb. mash	dollars	4.30	4.85	2.04	4.35	4.80	2.04	4.35	4.75	2.06
Av. laying ration	dollars	4.00	4.48	1.79	4.03	4.45	1.79	4.03	4.42	1.81
RATIOS										
Doz. eggs required to buy 100 lb. feed		7.6	11.6	7.5	9.05	9.46	7.9	8.5	9.3	7.9
No. lb. feed one doz. eggs will buy		13.1	8.6	13.3	11.0	10.56	12.6	11.8	10.7	12.7

		APRIL			MAY			JUNE		
		1956	1955	1939	1956	1955	1939	1956	1955	1939
EGGS										
Total dozens sold		3,085,020	3,301,650	1,213,620	3,347,040	3,488,640	1,388,070	2,917,380	3,069,780	1,117,170
Total price paid	dollars	1,383,000	1,433,861	269,177	1,433,855	1,350,199	297,863	1,228,520	1,366,321	266,289
Av. price per doz.	dollars	.4483	.4342	.2218	.4284	.3870	.2146	.4211	.4450	.2384
FEED										
Av. 100 lb. scratch	dollars	3.75	4.00	1.58	3.90	4.05	1.64	3.90	4.00	1.69
Av. 100 lb. mash	dollars	4.45	4.65	2.11	4.65	4.65	2.18	4.65	4.55	2.18
Av. laying ration	dollars	4.10	4.32	1.84	4.28	4.35	1.91	4.28	4.28	1.94
RATIOS										
Doz. eggs required to buy 100 lb. feed		9.1	9.95	8.3	9.99	11.2	8.9	10.1	9.6	8.1
No. lb. feed one doz. eggs will buy		10.9	10.1	12.1	10.0	8.89	11.2	9.8	10.39	12.3

Feed was cheaper by about 7.5 per cent than a year earlier. The saving was 33 cents a bag (100 pounds) if monthly prices are averaged. The 1955 - 56 hypothetical average New Jersey layer produced 189 eggs at a feed cost of $4.11, and an income of $9.15 for eggs, leaving a balance of $5.04 per bird for all other costs. Comparisons for a year earlier are: Feed cost, $4.44; egg income, $7.94; balance, $3.50. That hen's counterpart in the "golden year" of 1948 when egg prices averaged 61.38 cents would have produced an income of $11.60 at a feed cost of $5.08, leaving $6.52.

GRADING AND INSPECTION SERVICE

The total volume of eggs graded under the supervision of Bureau of Poultry Service personnel totaled 2,185,232 cases, or 65,559,960 dozens, a decrease of 7.68 per cent from last year. Of that quantity 1,115,928 cases, or 33,362,840 dozens, were inspected and graded in accordance with official New Jersey Wholesale Grades for eggs at the cooperative auction markets located at Vineland, Mount Holly, Hightstown and Flemington.

Eggs inspected prior to delivery to public institutions totaled 1,061,940 dozens, packaged in 35,398 30-dozen cases after candling to conform with official Consumer Grades. Grading certificates were issued for each lot inspected.

Thirty-four firms under contract with the Department apply official New Jersey Consumer Grades for eggs to the eggs candled and graded into retail packages, and 684,720 cases or 20,531,600 dozens were prepared for market in this manner. The contracts were amended May 1, 1956, to provide more accurate reports of the volume of product officially graded.

Another service rendered on request is the inspection of eggs to determine percentages of different qualities in the lot of eggs involved. No grade classification is applied but certificates are issued. Bureau personnel inspected 1,134 cases under this plan. One producer organization, under contract and employing a qualified grader licensed by this Department, provides a similar service for its membership. This association marketed 10,444,560 dozens or 348,152 cases of eggs during the year.

The Bureau supervised inspection of a small part of the volume of eggs graded for institutional delivery, serving in behalf of the

United States Department of Agriculture and issuing Federal certificates. Under Federal-State agreement, two firms candled and graded eggs into consumer packages, affixing United States Department of Agriculture grade labels. Late in the fiscal year these firms terminated their Federal contracts and applied for grading service under State supervision. There was no longer any appreciable need for a Federal-State agreement covering egg grading and, therefore, it was terminated by the United States Department of Agriculture.

Supervisory visits were made to all plants under contract for grading service. The Department has licensed a qualified grader at each plant who is required to maintain conformity to grade as the eggs are packaged. The facts of each supervisory examination of graded products are recorded at the time of a plant visit by Bureau personnel to provide evidence if corrective procedure is necessary.

Administrative costs are covered through the application of a graduated scale of fees stipulated in the contract. An hourly charge is made for service performed other than by contract.

Effective July 1, 1956, the State Board of Agriculture amended the New Jersey Standards of Quality for Individual Eggs so as to be comparable with the Federal standards as well as those of neighboring states.

The New Jersey Wholesale Grades for Eggs were amended to meet the demand for a procurement pack that will yield economically of the desired quality. Producer packs of eggs from out-of-state origin are being carefully prepared for distribution and are increasingly competitive with New Jersey eggs.

Weight classes for both Consumer and Wholesale Grades for Eggs were also amended. Weight classes for heavier than "large" eggs are now uniform in respect to minimum weight requirements. Previously, the regulations permitted an individual egg to weigh one ounce below the minimum for the weight class provided the entire lot met the requirements. In recent years many producers interpreted this as the minimum size individual egg for the weight class. The original purpose was to provide a tolerance for error and this meaning is restored by limiting the number of eggs of below minimum size to 5 per cent. The weights per dozen, as amen-

ded, are: Pullet, 19 ounces; Medium, 21 ounces; Large, 24 ounces; Extra Large, 27 ounces; Jumbo, 30 ounces.

New Jersey Consumer Grades for Eggs were not amended and remain uniform with consumer grades of the Federal Department and neighboring states.

Fresh Egg Law Enforcement

The State Fresh Egg Law enforcement policy continues to emphasize the law as the basic rule for marketing eggs. Wholesalers and retailers again were highly cooperative with enforcement personnel, and many have requested technical assistance in improving their egg merchandising methods.

Activities of personnel concerned with this law have been increased. The senior egg law inspector made 374 visits to distributing firms to discuss marketing procedures and conformity with the law. Inspections by all inspectors were made in 9,053 stores during the year, nearly 18 per cent more than the previous year. Violations among all stores totaled 1,594 or 17.61 per cent, a 4.22 per cent decrease. Four violations resulted in hearings and 478 were issued warnings. No penalties were assessed.

Table 8 shows by counties the number of stores inspected and the number of stores in violation.

Source Identification Law

All inspection and supervisory personnel contributed efforts toward attaining compliance with Chapter 143, P. L. 1953, which forbids use of the State's name improperly to connote a domestic origin to out-of-state eggs. They performed this added assignment as a by-product of their regular duties at egg candling plants and warehouses.

During the period of egg shortage, caused by respiratory disease in December and January, special efforts were found necessary to gain cooperation of some dealers who contended they could not get enough New Jersey eggs for their State brand cartons. A trained investigator was loaned by the Bureau of Licensing and Bonding to supplement the poultry staff.

Substantial compliance has been attained; however, poultry organizations continue to demand development of a more comprehensive and effective program to implement the new law. Assignment of a full-time inspector to this work, with the continued

POULTRY TABLE 8

NUMBER OF STORES INSPECTED AND PER CENT VIOLATION, BY COUNTIES

County	Independent Stores			Chain Stores			All Stores		
	Stores Inspected	Number of Violations	Per Cent Violations	Stores Inspected	Number of Violations	Per Cent Violations	Stores Inspected	Number of Violations	Per Cent Violations
Atlantic	22	7	31.82	.....	.....	.....	22	7	31.82
Bergen	1,013	99	9.77	111	14	12.61	1,124	113	10.05
Burlington	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camden	16	.....	.....	2	.....	.....	18	.....	.....
Cape May	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland	8	2	25.00	.....	.....	.....	8	2	25.00
Essex	2,016	454	22.52	236	66	27.97	2,252	520	23.09
Gloucester	4	2	50.00	.....	.....	.....	4	2	50.00
Hudson	2,124	200	9.42	86	12	13.95	2,210	212	9.59
Hunterdon	59	12	20.34	13	3	23.08	72	15	20.83
Mercer	77	16	20.78	8	.....	.....	85	16	18.82
Middlesex	674	171	25.37	70	24	34.29	744	195	26.21
Monmouth	154	35	22.73	26	6	23.08	180	41	22.78
Morris	172	18	10.47	24	1	4.17	196	19	9.69
Ocean	44	11	25.00	6	5	83.33	50	16	32.00
Passaic	759	111	14.62	63	11	17.46	822	122	14.84
Salem	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	151	37	24.50	16	2	12.50	167	39	23.35
Sussex	54	5	9.26	8	1	12.50	62	6	9.68
Union	849	208	24.50	115	42	36.52	964	250	25.93
Warren	66	17	25.76	7	2	28.57	73	19	26.03
Totals	8,262	1,405		791	189		9,053	1,594	

	1955-1956	1954-1955
Total stores inspected	9,053	7,725
Total violations	1,594	1,686
Average per cent violations	17.61%	21.83%

cooperation of those inspectors who are engaged in quality control, is anticipated in the coming fiscal year.

SPECIAL POULTRY ACTIVITIES

Poultry Bureau staff members participated in many programs of the Poultry and Egg National Board and Northeastern Poultry Producers Council. These activities included two schools for poultry barbecuers held in Massachusetts and Delaware and attended by residents of many nearby states; a poultry products promotional dinner for editors and radio broadcasters; and the NEPPCO Egg Quality and Marketing School held at Rutgers.

In cooperation with the Division of Information, the Bureau supplied articles, scripts, statistical data and photographs for newspaper, radio and television food publicists.

New Jersey cooperated with Connecticut, Pennsylvania, Virginia and Northeastern Poultry Producers Council in providing experienced staff members to conduct the first area-wide Egg Marketing and Quality School at the University of Georgia, sponsored by Southeastern Poultry and Egg Association.

Several conferences with poultry products marketing staffs of Pennsylvania, New York, Connecticut and New Jersey explored the need for country point egg price and volume reports, and the possibility of coordinating a regional system of reports through the United States Department of Agriculture. An experimental program was undertaken in New York State. Preliminary surveys were made in New Jersey and Pennsylvania. The matter is still under study.

Growers of such high quality poultry items as "caponets" and Kosher pullets have asked for help in improving their marketing conditions. They are largely dependent upon the New York City Live Poultry Terminal, which is one of the last remaining principal outlets for quality live poultry. In recent years, there has been a strong trend toward marketing processed poultry in New York City as well as elsewhere. Slaughter under rabbinical supervision at country points followed by freezing is now permitted. Bureau personnel and the Agricultural Extension Service are working with the growers, most of whom are in Camden and Gloucester counties, to effect improvements in their traditional market, and to develop a modernized program adapting their products to the technological changes in poultry marketing.

Report of the Division of Plant Industry

FRANK A. SORACI, *Director*

PERSONNEL CHANGES

On March 15, 1956, Dr. Harry B. Weiss, director of the Division of Plant Industry, retired at the age of 72, after serving the Department since its formation in 1916. His able direction will be sorely missed within the Division and the Department. His accomplishments as an entomologist and a writer on almost any subject have been recorded and recognized throughout the world. We are all hopeful that he may have many pleasant and healthful retirement years.

At the same time and also through retirement, we lost the services of Paul L. Holcombe, who had supervised the apiary inspection work for 21 years. His conscientious work contributed much to control of bee diseases throughout the State.

William J. Nestle, whose capable service on the gypsy moth control project dated back to 1921, retired on May 15, 1956.

Robert J. Sim, inspector of this Division, died on November 26, 1956, aged 75 years, after a brief illness. He was a naturalist of the old school, having particular interest and ability in entomology, botany and ornithology. Mr. Sim was an able artist, illustrator and writer whose technical publications and others on historical subjects for the Department and for the New Jersey Agricultural Society were in great demand. Mr. Sim will be missed by his co-workers as a respected teacher and field companion.

On April 1, 1956, Frank A. Soraci, chief of the Bureau of Entomology of this Division was appointed director of the Division. William M. Boyd, supervisor of nursery inspection was appointed chief of the Bureau of Entomology. Jacob C. Matthenius, inspector of bee culture, was appointed supervisor of bee culture to replace Mr. Holcombe. These appointees are most anxious to carry on the work of the Division in the tradition so well established under Dr. Weiss' direction.

BUREAU OF ENTOMOLOGY

WHITE-FRINGED BEETLE CONTROL

Efforts have been made by this Department and the Agricultural Research Service of the United States Department of Agriculture to eradicate the infestation of white-fringed beetle, *Graphognathus* sp. The first occurrence of this pest in New Jersey was reported in the previous annual report. A force of 12 temporary State inspectors, three temporary Federal inspectors and one thoroughly experienced Federal supervisor was made available during the summer months of 1955 for an extensive scouting program to determine whether or not additional infestation might exist.

For the purposes of the program it was considered: 1) that training of inexperienced State personnel would be essential; 2) that the area known to be infested should be carefully sampled to determine the effectiveness of the applied control measures and the need for additional or other measures; 3) that the areas immediately surrounding the infestation should be carefully combed to locate any natural or artificial spread that might have occurred; 4) that nearby areas where owners of the affected property have contacts should be searched for signs of artificial spread of the pest; 5) that any remaining time of the scouting force should be devoted to scouting nearby agricultural centers, and finally spot checking the agricultural lands of the southern, then the northern areas of the State.

On July 5, the inexperienced personnel were sent to Goldsboro, North Carolina for a four-day training course in detecting the symptoms of infestation by white-fringed beetle. Upon their return, the survey was initiated, step-by-step. Reports of beetle emergence from within the control area were received almost immediately. A DDT spray was applied to low foliage within the area during July to prevent movement of emerging beetles. As additional adult beetles were found emerging, granular dieldrin was applied to various spots within the crop land. Following the latter application in mid-September, no further signs of emergence could be found. All other survey efforts failed to show any evidence of presence of the insect.

During the spring months of 1956, a survey was undertaken of soil within the control area to determine the status of the beetle

population. Only a few early instar larvae and two mature specimens were found. The meager findings indicated excellent control, possibly approaching eradication of the pest, on the involved cultivated lands. On the uncultivated ground, however, three late stage larvae and five fully grown specimens were taken. Need for application of additional insecticide on the uncultivated lands was later confirmed. Adequate supplies of insecticide were purchased by the Department and applied by Federal experimental aircraft and by hand to the hazardous uncultivated lands during June of 1956.

The eradication effort will be continued next year with enforcement of the quarantine regulations to prevent artificial spread of the pest and with scouting to determine the location of any remaining infestation. Insecticides will be applied whenever and wherever indicated. At this time there is every indication that the threat has been adequately met and that continued vigilance may very well bring about the eradication in New Jersey of this scourge of agriculture.

GYPSY MOTH CONTROL PROJECT

Spread of the gypsy moth in recent years in the forests of New York State and Pennsylvania indicated the need for intensive trapping in New Jersey to determine whether or not there has been penetration of our boundaries. All available traps (750) for use in the State for the 1955 trapping season were placed in a band about three and one-half miles deep from the New Jersey-New York northern border. A seven-eighths mile grid system was employed so that, in theory at least, the trapped area was saturated with bait. Chances for capture of male moths flying within that area would thus be maximal. The trapping program, conducted with the help of the regular three-man crew and two temporary employees, resulted in captures of the insect beginning July 18 and ending in late August.

Results of the trapping program confirmed the inadequacy of the Federal-State program to prevent the spread of this most serious forest pest. A start was made in securing more satisfactory financial support from State and Federal sources that might permit removal of the threat of this insect. The interest of the States to the south and west of New Jersey was a major factor in finally obtaining an adequate Federal appropriation (and

TRAP LOCATIONS

County	Township or Municipality	No. Traps	No. Traps Catching	No. Moths Caught
Bergen	Allendale	1	....	....
	Alpine	33	1	1
	Closter	4	....	....
	Cresskill	4	....	....
	Demarest	6	....	....
	Englewood	17	....	....
	Englewood Cliffs	14	....	....
	Fort Lee	3	....	....
	Hohokus (Mahwah)	45	3	9
	Interstate Park	9	....	....
	Montvale	10	....	....
	Northvale	2	....	....
	Norwood	6	....	....
	Park Ridge	5	....	....
	Old Tappan	10	....	....
	Ramsey	8	....	....
	Rivervale	9	....	....
	Rockleigh	4	....	....
	Saddle River	2	....	....
	Tenafly	14	....	....
	Upper Saddle River Boro	13	....	....
	Totals	219	4	10
Passaic	Ringwood	34	5	6
	West Milford	46	5	17
	Totals	80	10	23
Sussex	Montague	148	33	134
	Sandyston	150	....	....
	Vernon	80	8	20
	Wantage	70	7	21
	Totals	448	48	175
	Grand Totals	747	62	208

necessary State support) to establish a project having as its objective the eradication of the gypsy moth from the United States. Treatment by aircraft of some 40 million acres of forest land over a period of eight or ten years will be the first step in the program. It is expected that "mopping-up" operations will be needed for at least an equal number of years thereafter.

In accordance with this new concept the infestation in New Jersey was considered part of the outer limits of infestation and

SCOUTING WORK

September, 1955 to May, 1956

County	Municipality	Acres Scouted			Egg Masses
		Woodland	Open	Roadside	
Bergen	Alpine	436	....	....	....
	Mahwah	439	230	....	....
	Paramus	2	5	....	....
	Tenafly	164	75	....	....
		13	61	....	....
	Totals	1,054	371	....	....
Burlington		....	....	15	....
	Totals	....	....	15	....
Hunterdon		....	....	5	....
	Totals	....	....	5	....
Mercer		....	....	10	....
	Totals	....	....	10	....
Passaic	Bloomfield	70	17	....	....
	Ringwood	389	118	....	1 old
	Wanaque	373	217	....	....
	West Milford	1,151	....	....	8 new
		112	25	....	....
	Totals	2,095	377	....	9
Somerset		....	....	8	....
	Totals	....	....	8	....
Sussex	Montague	325	....	215	5 new
	Sandyston	385	....	....	....
	Sparta	15	35	....	....
	Vernon	282	40	....	....
	Wantage	195	40	....	....
	Totals	1,202	115	215	5
	Grand Totals	4,351	863	253	14

the winter scouting work was aimed at determining the area which should receive solid aerial spraying with DDT at the rate of one pound per acre.

Federal funds were made available for the treatment of about 160 thousand acres of forest land in this State, beginning May 28, 1956. The work was completed, largely by the use of multi-engined aircraft, by June 22, 1956. Adjacent areas in New York

and Pennsylvania comprising some 500 thousand acres were similarly treated. Funds to permit treatment of more than three million acres are available for work in the spring of 1957. Thereafter, it is hoped that five million acres might be sprayed annually until the whole infested area is covered.

It is expected that mopping-up operations within and outside the sprayed area might be required in New Jersey and that State support will be available to finance such operations.

Following the completion of the spray program, some two thousand traps will be placed in the field on a seven-eighths mile grid pattern that will saturate the northern third of the State with bait. Catches of moths in these traps during the summer months of 1956 will determine the extent of additional work that might be needed in the spring of 1957.

In order to prevent artificial spread of the gypsy moth the State Board of Agriculture issued a quarantine, effective January 23, 1956 forbidding movement of hazardous articles from the area known to be infested, except after inspection and certification. The "regulated area" and "regulated articles" follow:

Regulated Area

In Sussex County; the entire townships and incorporated municipalities therein of Montague, Wantage, Vernon, Sandyston, Frankford, Lafayette, and Hardyston.

In Passaic County; the entire townships and incorporated municipalities therein of West Milford, Ringwood, Wanaque and Bloomingdale.

In Bergen County; the entire townships and incorporated municipalities therein of Mahwah, Oakland and Ramsey.

Regulated Articles

1. All stages of the gypsy moth, *Porthetria dispar* L.

2. All timber products, manufactured or unmanufactured, including poles, piles, bark, pulpwood, lumber, excelsior, shavings and sawdust. Manufactured wood products, such as furniture, containers, and similar articles, except when maintained under conditions of exposure to infestation, are exempt from regulation.

3. All trees, shrubs, plants and vines having persistent woody stems, and parts thereof, excepting seed and fruit other than cones.

4. Stones and quarry products.

5. Miscellaneous hazardous material. Railroad cars, scrap materials such as salvaged lumber or other products of demolished buildings, vehicles, fences, scrap metals, bricks, building blocks, concrete or cinder, trailers, camping equipment, cable reels, construction equipment and any other materials which have been exposed within the regulated area in such manner as to make them capable of harboring the gypsy moth in any of its stages.

NURSERY INSPECTION

During the year, July 1, 1955 to June 30, 1956, a total of 684 nurseries was inspected. Nursery certificates were issued to those free of injurious insects and plant diseases. A total of 276 infestations was found and controlled in 136 nurseries. These figures represent an increase of 68 nurseries certified over the 1954-55 report. There were 53 fewer infestations and 31 fewer nurseries infested.

INSECT INFESTATIONS

Insect Pests	Infestations	Insect Pests	Infestations
Juniper scale	46	Rose leaf roller	3
Holly leaf miner	34	Peach tree borer	3
Bagworm	25	Sitka spruce gall aphid	3
Oyster shell scale	23	Tulip scale	3
Euonymus scale	19	Lilac borers	2
Juniper webworm	16	Pine bark aphid	1
Boxwood leaf miner	12	Oak scale	1
Spruce gall aphid	11	Holly scale	1
European pine shoot moth	8	European elm scale	1
Azalea leaf roller	8	San Jose scale	1
Rhododendron lace bug	8	Rose scale	1
Azalea lace bug	7	Lecanium scale (Taxus)	1
Pine leaf scale	7	Stem canker (on willows)	1
Canker	6	Rose aphis	1
Willow galls	5	Birch leaf miner	1
Mealybug (Taxus)	5	Magnolia scale	1
Lace bug	5	Tent caterpillar egg masses	1
Soft scale	4	Cedar galls	1

Dealers' Certificates

Certification was granted to 132 dealers in nursery stock after agreements had been signed affirming that certified nursery stock would be purchased only from sources investigated and approved by this Department.

Special (Request) Inspections

Seventy-eight inspections were made for residents of New Jersey desiring information about, and control for, insects and plant pathogens affecting their premises.

Special Certificates

Two hundred ninety-one special inspections were made for residents, usually other than nurserymen, for the movement of plant material out of New Jersey. This service is given in accordance with the requirements of other states and foreign countries. Certificates are issued as a result of inspection just prior to shipment.

Canadian Certificates

In accordance with Canadian regulations, a total of 81 special certificates was issued for the movement of plant material thereto.

Dealer Visits

The premises of 19 dealers in plant material were inspected to check sources of supply and the cleanliness of held-over nursery stock.

Special Corn Borer Certificates

During the year a total of 111 special corn borer certificates was issued for the shipment of herbaceous plant material to states having such requirements.

Domestic Inspections

Fifty-two shipments of plant material from other states were inspected as a check on the inspection services of states of origin. No infested material was found.

Foreign Inspections

Seven special inspections were made of unquarantined plant material entering New Jersey from Canada. No infested material was reported.

RED STELE DISEASE OF STRAWBERRIES

During March, April and May, 1956, 64 inspections were made of strawberry plantings in New Jersey. Sixty-four growers entered 215.5 acres in this program. Red stele disease was found in the eight-acre planting of a grower in Atlantic County. This

was the second consecutive finding of the disease in his planting and he remained uncertified. He will be required to obtain new plants from approved sources and to plant these on new ground in order to requalify for certification. As a result of these inspections 207.5 acres of strawberry plants were certified and the growers supplied with the accredited special tags.

RED STELE DISEASE CERTIFICATION BY COUNTIES

County	Number of Growers	Acreage
Atlantic	36*	124.75*
Bergen	1	2.00
Burlington	2	11.00
Camden	5	25.00
Cape May	1	1.50
Cumberland	1	2.00
Gloucester	5	15.00
Hunterdon	1	1.50
Mercer	6	27.25
Middlesex	1	.50
Monmouth	4	4.75
Salem	1	.25
Totals	64	215.50

* One grower and eight acres rejected.

As suggested in the 1954-55 annual report, several meetings were held during this past year to review the red stele program and to explore the advisability of a strawberry plant program that would include a virus and nematode complex certification as well. These meetings included members of the Small Fruits Industry Committee, independent growers, county agricultural agents and interested workers from the New Jersey Agricultural Experiment Station and of this Department.

To date, clinically tested virus-free and nematode-free foundation strawberry plants have been planted in treated soil in screenhouses at the New Jersey Agricultural Experiment Station and a tentative certification program has been drawn up for consideration. If this plan is adopted, two classes of certification will be given.

The first will be known as Registered or Increase Strawberry Plant Certification. These plants will be those grown from foundation stock released by the New Jersey Agricultural Experiment Station to certain growers, grown by them under rigidly controlled conditions and sold to other plant growers.

The second type certification, known as Certified Improved Strawberry Plant Certification will be given to those growers who have purchased Registered or Increase Strawberry plants from New Jersey, or equivalent from other states. Certification of this type will follow rigid inspections.

It is believed that a program of this type has been needed in New Jersey for some time and that if it is adopted, the fruit grower will receive better and cleaner plants that will prevent many of the losses now being noticed.

BLUEBERRY PLANT CERTIFICATION

This report covers the calendar year of 1955, the 11th year of certification of blueberry plants and propagating material.

According to the requirements of this program two or more inspections are made each year, the first in the spring and the second in the fall, when symptoms are most readily seen. Diseased bushes are tagged and must be removed from the planting within 10 days. Other inspections, mostly spot checks, are made if additional diseased bushes are observed at the time of reinspection for removal of tagged bushes. Fields showing more than three-fourths of 1 per cent diseased bushes at any one inspection or a total of more than 1 per cent for all inspections are rejected and refused certification.

Summary of Spring Inspection (1955)

Twenty-two growers entered a total of 306 acres for the spring inspection. Stunt disease in excess of the tolerated three-fourths of 1 per cent resulted in the rejection of 28.5 acres entered by three growers. It was required that 304 tagged bushes be removed from the 277.5 certifiable acres. This gives an average of approximately 1.1 stunted bushes per acre for this inspection.

Summary of Fall Inspection (1955)

Seven acres of blueberry plants were rejected during the fall inspection when excessive weed growth prevented adequate inspection of this acreage. No plantings were rejected for an excess of stunt disease. A total of 88 diseased bushes was tagged and removed from the 270.5 acres certified, giving an average of 0.33 stunt diseased plants per acre during this inspection, or a total of 1.4 bushes per certifiable acre for the two inspections.

STATISTICAL SUMMARY 1955 BLUEBERRY SEASON

Grower	Acres Entered	Voluntarily Withdrawn Spring	Voluntarily Withdrawn Fall	Acres Inspected Spring	Acres Inspected Fall	Acres Rejected Spring	Acres Rejected Fall	Stunt Bushes Tagged (Certifiable Portion) Spring	Stunt Bushes Tagged (Certifiable Portion) Fall
Ammon, A. G.	6.75	....	....	6.75	6.75	....	....	2	....
Arpin, D. J.	16.00	....	....	16.00	....	16.00*	....	....	....
Budd, T. H.	19.00	....	....	19.00	19.00	....	....	12	....
Claflin's Nursery	5.00	....	....	5.00	5.00	....	....	43	2
Clevenger, H.	15.00	....	....	15.00	15.00	....	....	45	25
Cohen, E.	10.00	....	....	10.00	6.00	4.00*	....	....	....
Cutts Brothers	15.00	....	....	15.00	15.00	....	....	....	....
Downing, J. H.	12.00	....	....	12.00	12.00	....	....	....	....
Galletta Brothers	31.00	....	....	31.00	31.00	....	....	20	1
Haines, H. & E.	35.00	....	....	35.00	35.00	....	....	18	12
Haines, Wm.	24.00	....	....	24.00	24.00	....	....	....	....
Hamilton, T. E.	12.00	....	....	12.00	12.00	....	....	6	....
Leach, J. B.	6.50	....	....	6.50	6.50	....	....	4	4
Manning, C. F., Jr.	10.00	....	....	10.00	10.00	....	....	21	22
Mood, J. R.	7.00	....	....	7.00	....	....	7.00**	11	....
Norcross, C. L.	8.50	....	....	8.50	....	8.50*	....	....	....
O'Neill, J. G.	11.50	....	....	11.50	11.50	....	....	7	....
Rogers, J. H.	33.00	....	....	33.00	33.00	....	....	48	1
Scammell & Son	6.00	....	....	6.00	6.00	....	....	12	14
Scarano, S.	9.00	....	....	9.00	9.00	....	....	43	7
Stevenson, A. L.	12.50	....	....	12.50	12.50	....	....	12	....
Volk, W. F.	1.25	....	....	1.25	1.25	....	....	....	....
22 growers	306.00	....	....	306.00	270.50	28.50	7.00	304	88

* Rejected for excessive stunt disease during spring inspection.

** Rejected prior to fall inspection because of excessive weed growth.

During both the spring and fall seasons stunt symptoms appeared early and with such high coloring that as a result very few additional diseased bushes were found during "check backs" for the removal of tagged bushes.

11-YEAR REVIEW OF BLUEBERRY INSPECTION

Year	Number of Growers	Acres Inspected	Number of Stunt Bushes Tagged per Acre (Certifiable Portion)
1945	14	155.25	4.7
1946	26	362.23	5.7
1947	23	346.38	2.4
1948	31	288.30	1.4
1949	34	367.40	1.5
1950	33	396.50	1.8
1951	37	391.13	1.4
1952	31	365.09	1.7
1953	28	338.17	2.2
1954	22	291.25	2.2
1955	22	306.00	1.4

A comparison of the results for 11 years of inspection has caused us to come to the conclusion that some revision of the stunt certification program may well be in order. No significant reduction in stunt disease has resulted after the first two years of 1945 and 1946. Since that time the level has been low, but quite constant.

This program was initiated in 1945 to hold stunt disease in check until research could provide information as to the vectors involved in the spread of the disease and to advise on their control. Another main purpose was that of providing clean propagating stock. The program has been successful in these endeavors.

Workers of the Agricultural Experiment Station have proved that efficient and persistent roguing will reduce stunt disease in a planting to a negligible point. Through research they have identified the sharp-nosed leaf hopper, *Scaphytopius magdalensis* (Prov.), as the primary vector of spread and have provided control programs for this insect. The Extension Service has provided stunt control schools and has issued spray schedules and other information, to familiarize the growers with stunt disease. Yet with the above information at hand and with 11 years of a certification program, the incidence of stunt in certified plantings remains stable.

It is planned to review the whole program during the coming year, and to make changes that will be in keeping with the needs.

POST-ENTRY QUARANTINE

Certain plant materials from foreign countries, capable of carrying and spreading virus and other plant pathogens can be imported only under permit and must be grown under the supervision of this Department, in cooperation with the United States Department of Agriculture, for a period of time until deemed free from disease. In most cases the holding period is two growing seasons but some plants may be held for a longer or shorter time, according to the habits of the particular pathogens and plants.

MATERIAL IMPORTED UNDER POST-ENTRY QUARANTINE

July 1, 1955 to June 30, 1956

Date of Entry 1955	Country of Origin	Quantity and Material	Destination by Counties
November	Northern Ireland	3 *Rosa*	Burlington
	England	3 *Rosa*	Burlington
		12 *Berberis thunbergii*	Middlesex
		12 *Berberis calliantha*	
		12 *Berberis gagnepainii*	
	Holland	25 *Rhododendron hirsutum**	Union
December		300 *Hydrangea, petiolaris*	Middlesex
	England	1 *Rosa Moyesii*	Passaic
		1 *Rosa Nevada*	
1956			
February		4 *Rosa*	Burlington
		1 *Rhododendron racemosum*	Passaic
March	Holland	500 *Anthurium scherzerianum*	Bergen
		1,000 *Acer palm. atrop.*	Union
		50 *Acer palm. atrop.*	Hunterdon
		25 *Acer Faassen's Black*	
		50 *Acer pseudoplatanus Leopoldi*	
April		250 *Acer palm. atrop.*	Bergen
		50 *Acer palm. dissectum atrop.*	
		200 *Acer plat. Faassen's Black*	Bergen
		50 *Acer saccharinum*	
		25 *Acer plat. Drummondi*	
	England	4 *Juniperus*, in varieties	Essex
	Holland	50 *Quercus robur fastigiata*	Mercer
		50 *Quercus palustris*	
		50 *Acer pseudoplatanus erectum*	
		50 *Acer pseudoplatanus Spathi*	
		50 *Sorbus aria lutescens*	
		50 *Sorbus aria magnifica*	
		10 *Acer Drummondi*	Mercer
		10 *Acer pseudoplatanus Leopoldi*	
		10 *Acer pseudoplatanus Spathi*	
		10 *Acer pseudoplatanus Worlei*	
		50 *Acer Faassen's Black*	
		100 *Acer palm. atrop.*	
		100 *Acer dissectum atrop.*	
		15 *Aesculus Briottii*	
		400 *Acer Faassen's Black*	Monmouth

*This material no longer in New Jersey—transferred to a Massachusetts nursery.

MATERIAL IMPORTED UNDER POST-ENTRY QUARANTINE (cont'd.)

Date of Entry	Country of Origin	Quantity and Material	Destination by Counties
April		200 *Acer palm. atrop.*	
		250 *Acer plat.* "Crimson Splendour"	Monmouth
		100 *Acer palm. atrop.*	
		50 *Acer dissectum atrop.*	
		100 *Acer plat. Schwedleri nigra*	Monmouth
		50 *Acer palm. atrop.*	
		25 *Acer palm. dissectum atrop.*	
		10 *Aesculus* spp.	Monmouth
		100 *Acer palm. atrop.*	Monmouth
		100 *Acer plat. Faassen's Black*	
		200 *Acer Faassen's Black*	Morris
		250 *Acer palm. atrop.*	Morris
		500 Malling stocks type VII	
	Belgium	100 *Acer plat. globosum atrop.*	Passaic
		100 *Acer palm. atrop.*	
	Holland	1,000 *Acer palm. atrop.*	Union
		90 *Acer plat. Drummondi*	Union
		100 *Acer plat. Reitenbachi*	
		100 *Acer pseudoplatanoides Spathi*	
		98 *Acer plat. Schwedleri*	
		100 *Quercus coccinea splendens*	
		95 *Quercus robur fastigiata*	
		100 *Sorbus aucuparia moravica*	
		300 *Acer palm. atrop.*	Union
		100 *Euonymus nana, koopmanni*	
		100 *Euonymus rad. vegata*	Union
		90 *Ilex polycarpa*	
		300 *Ilex pyramidalis*	
		500 *Hydrangea petiolaris*	
May		25 *Acer plat. Faassen's Black*	Essex
		10 *Acer palm. dissectum atrop.*	
		100 *Hydrangea petiolaris*	Mercer
	Northern Ireland	12 *Rosa*	Monmouth
	England	12 *Rosa*	Passaic
	Holland	200 *Acer palm. atrop.*	Union
June	Columbia, S. A	10 *Anthurium cabrerense*	Bergen
		2 *Anthurium clavigenum*	
	Trinidad, B. W. I.	2 *Anthurium*	Somerset

MATERIAL IMPORTED DURING THE FISCAL YEAR BY GENUS

Genus of Plants	Number Imported	Genus of Plants	Number Imported
Acer	6,038	*Ilex*	390
Aesculus	25	*Juniperus*	4
Anthurium	514	*Malus*	500
Berberis	36	*Quercus*	295
Euonymus	200	*Rhododendron*	26
Hydrangea	900	*Rosa*	36
		Sorbus	200

MATERIAL RELEASED UNDER POST-ENTRY QUARANTINE

July 1, 1955 to June 30, 1956

Shipment Released from Hoboken (Original Date)	Country of Origin	Quantity and Kind of Material Imported	Number of Plants Released	Destination by Counties
1951				
December 27	Holland	9 *Laburnum*	7	Union
1952				
December 11		974 *Laburnum vossi* (plus 26 destroyed)	300	Mercer
December 12		100 *Acer colchicum rubrum*	7	Middlesex
		74 *Aesculus*	44	
1953				
March 27		84 *Laburnum vossi* (plus 16 destroyed)	36	Mercer
April 9		1,975 *Laburnum vossi* (plus 25 destroyed)	1,825	Union
April 22	Belgium	400 *Acer plat. atrop.*	373	Mercer
		5 *Acer plat. Reitenbachi*	2	
		5 *Acer plat. Schwedleri*	5	
July 3	Canada	1 *Anthurium penthaphyllum*	1	Bergen
November 6	Holland	500 *Acer palm. atrop.*	295	Union
November 27	Germany	57 *Rosa* spp.	40	Sussex
December 16	Holland	10 *Wisteria*	5	Middlesex
		1,000 *Rosa rugosa*	....	
1953				
December 23	Holland	100 *Acer palm. atrop.*	85	Passaic
		100 *Acer plat. Schwedleri*	94	
		250 *Rosa rugosa*	240	
December 30		300 *Berberis thunb. atrop. nana*	235	Middlesex
December 31		500 *Berberis thunb. atrop.*	430	Somerset
1954				
February 11		50 *Acer*	29	Cumberland
February 15		100 *Acer plat. Schwedleri*	93	Bergen
		50 *Acer palm. dissectum atrop.*	30	
		50 *Acer palm. atrop.*	40	
March 25		200 *Acer palm. atrop.*	190	Bergen
		25 *Wisteria sinensis*	....	
March 30		80 *Acer palm. atrop.*	67	Mercer
		40 *Acer dissectum*	13	
April 1		500 *Berberis thunb. nana*	20	Morris
		1,000 *Acer palm.*	920	Passaic
		2,500 *Malus*	2,500	Morris
		680 *Acer palm. atrop.*	470	
April 6	England	3 *Rosa* spp.	1	Middlesex
	Holland	350 *Acer*	332	Union
		50 *Aesculus*	50	
April 9		100 *Acer palm.*	61	Atlantic
April 15		500 *Acer palm. atrop.*	329	Union

MATERIAL RELEASED UNDER POST-ENTRY QUARANTINE (cont'd.)

Shipment Released from Hoboken (Original Date)	Country of Origin	Quantity and Kind of Material Imported	Number of Plants Released	Destination by Counties
April 16		200 *Acer palm. atrop.*	156	Middlesex
		100 *Berberis verruculosa*	16	
		100 *Berberis chaenaulti*	....	
April 19		500 *Acer palm. atrop.*	256	Union
April 21		100 *Acer palm.*	100	Union
April 22	Belgium	200 *Acer plat. atrop.*	192	Middlesex
April 22		100 *Acer palm. atrop.*	94	Monmouth
April 22		10 *Acer palm. atrop.*	10	Bergen
April 28	Holland	200 *Acer palm. atrop.*	58	Union
May 24	Germany	3 *Rubus nutkanus*	2	Bergen
1955				
May 12	Holland	500 *Hydrangea* rooted cuttings	....	Essex
1956				
April 18		10 *Aesculus* spp.	....	Monmouth
April 20		50 *Quercus robur fastigiata*	....	Mercer
		50 *Quercus palustra*	....	
		50 *Acer pseudoplatanus erectum*	....	
		50 *Acer pseudoplatanus Spathi*	....	
		50 *Sorbus aria lutescens*	....	
		50 *Sorbus aria magnifa*	....	
April 27		100 *Hydrangea petiolaris*	....	Mercer

MATERIAL RELEASED BY GENUS

Genus	Number Imported	Number Released
Acer	5,820	4,311
Aesculus	134	94
Anthurium	1	1
Berberis	1,500	701
Hydrangea	600	....
Laburnum	3,042	2,168
Malus	2,500	2,500
Quercus	100	....
Rosa	1,310	281
Rubus	3	2
Sorbus	100	....
Wisteria	35	5

KHAPRA BEETLE

As reported in the annual report of 1954-55, because of the Federal quarantine on account of khapra beetle, *Trogoderma granarium,* a man was assigned to survey the commercial feed and seed storage warehouses and outlets in the State. At the time of that report, 204 establishments had been inspected up to June 30. Various infestations were noted and specimens taken in 151 of these establishments. The specimens were sent to the Insect Identification Section of the United States Department of Agriculture for identification.

During the months of July and August of this fiscal year, an additional 69 establishments were inspected. Insect specimens were obtained from 54 of these and were sent in for identification.

SUMMARY OF KHAPRA BEETLE SURVEY

Family	Genera and Species	Number Finds	Number in Sample
Coleoptera	*Dermestidae*		
	Attagenus piceus Oliv.—Black carpet beetle	97	714
	Anthrenus verbasci L.	34	172
	sp.	3	3
	Dermestes lardarius L.—Larder beetle	8	8
	ater Deg.	1	1
	maculatus Deg.	1	1
	sp.	2	2
	Trogoderma parabile Beal	7	50
	boron Beal	4	4
	versicolor Creutz.	1	1
	sp.	1	3
	Totals	159	959
	Ostomidae		
	Tenebroides mauritanicus L.—The Cadelle	85	125
	sp.	6	6
	Totals	91	131
	Tenebrionidae		
	Tenebrio obscurus F.—Dark mealworm	38	86
	molitor L.—Yellow mealworm	11	11
	sp.	16	26
	Tribolium confusum Duval—Confused flour beetle	11	13
	castaneum Herbst—Red flour beetle	4	24
	sp.	1	1
	Palorus ratzeburgi Wissm.	3	3
	Alphitophagus bifasciatus Say	1	1
	Totals	85	165

Family	Genera and Species	Number Finds	Number in Sample
Coleoptera	*Curculionidae*		
	Sitophilus granarius L.—Granary weevil	25	65
	oryza L.—Rice weevil	12	29
	Brachyrhinus rugosostriatus Goeze	2	2
	Brachytarsoides sticticus Boh. (feed on smut in grain)	1	2
	Cyrtepistomus castaneus Roelfs	1	1
	Totals	41	99
	Anobiidae		
	Stegobium paniceum L.—Drug store beetle	26	90
	Lasioderma serricorne F.—Cigarette beetle	2	2
	Totals	28	92
	Cucujidae		
	Oryzaephilus surinamensis L.—Saw-toothed grain beetle	17	29
	Ahasverus advena Waltl.—Foreign grain beetle	4	23
	Laemophloeus sp.	2	2
	Totals	23	54
Lepidoptera	*Phycitidae*		
	Plodia interpunctella Hbn.—Indian meal moth	13	13
	Ephestia kuehniella Zell.—Mediterranean flour moth	2	3
	elutella Hbn.	1	1
	cautella Wlk.	1	1
	sp.	2	2
	Totals	19	20
Coleoptera	*Ptinidae*		
	Ptinus hirtellus Sturm.	4	16
	brunneus Dufts.	1	1
	sp.	1	1
	Gibbium psylloides Czemp.	2	2
	Totals	8	20
	Mycetophagidae		
	Typhaea stercorea L.	6	13
	Totals	6	13
Lepidoptera	*Pyralididae*		
	Pyralis farinalis L.—Meal snout-moth	5	5
	Totals	5	5
Coleoptera	*Bostrichidae*		
	Rhyzopertha dominica F.—Lesser grain borer	2	20
	Totals	2	20
	Grand Totals	467	1,578

As anticipated, none of the specimens was khapra beetle. During the full survey, a total of 273 establishments was sampled and insect specimens obtained from 205 of these. These inspections showed that 75 per cent of the commercial establishments visited had some infestation of stored grain insects.

While compiling the figures it was thought best to summarize the number of finds rather than the number of individuals since the number of specimens obtained was no criterion as to the amount of infestation in an establishment. Of interest, however, was the fact that in most cases the number of specimens obtained paralleled the number of infestations by a certain insect. Also, in comparing these results with those obtained during the 1955 Economic Insect Pest Survey of farm storages, we find differences in the type of infestation.

In the commercial storage plants the *Dermestidae* (particularly *Attagenus piceus*, the black carpet beetle) were the most common insects found. Members of this genera are generally considered to be household pests and it was unusual to find so many infestations and individuals in grain and feed storage.

We had expected to find the *Tenebrionidae, Cucujidae, Curculionidae* and *Phycitidae* as the predominant pests and were particularly surprised at the low incidence of the last group, commonly known as the meal and flour moths.

No attempt was made to compare the amount of infestation with the cleanliness of the establishments. However, it was apparent that those warehouses which were kept clean had less infestation than did those in which feed and grain were allowed to accumulate on the floors and in the corners of the warehouses.

A number of breweries were visited. In only one of these were any insects found and these had been killed by control applications. These companies are working under regulation of the Pure Food and Drug Administration of the Federal Government and that fact must have an important bearing on insect control.

The inspector found that most of the feed and grain dealers consider rats and mice (particularly the former) to be the most important pest in their buildings and are constantly attempting to exterminate these rodents. Not much attention is paid to the damage potential of insects.

The high percentage of insect infestation (75 per cent) of the commercial establishments inspected during the survey would indicate a need for an effective program for the control of stored-grain insects.

SWEET POTATO WEEVIL SURVEY

During June a memorandum was received from the Georgia Department of Entomology that sweet potato weevil had been found infesting the premises of a grower in that State. It was thought advisable to have an inspector contact those produce dealers known or believed to have purchased imported southern sweet potatoes and yams. Out of nine dealers contacted, none was found to have brought in Georgia plants or tubers. Five growers obtained seed from Virginia only. Further leads will be checked as received.

SOYBEAN NEMATODE

Information was received from the Golden Nematode Project office on Long Island, New York, that a bulb and plant grower in New Jersey was associated with a grower at Wilmington, North Carolina, and might possibly have imported bulbs from the soybean nematode-infested area of Castle Hayne, North Carolina. A call was made and it was found that gladiolus corms had been imported from the general area in 1953-54 and Dutch iris bulbs in 1952-53. These have been the only imports received. This information has been forwarded to the Golden Nematode office for their further attention.

MISCELLANEOUS INSPECTIONS AND ACTIVITIES

During the fiscal year, one inspector spent 51 days in support of the gypsy moth survey; one inspector, five and one-half days at the Trenton Fair setting up and removing departmental exhibits; one inspector, one day with inspectors from the Federal Barberry Eradication Project, United States Department of Agriculture, inspecting barberry plantings for trueness-to-type; five men, 549 man-days on the Economic Insect Survey; two inspectors, 84 man-days on the white-fringed beetle survey and one inspector, two days on the Mid-Atlantic Farm Show.

JAPANESE BEETLE QUARANTINE ENFORCEMENT

The volume of nursery stock shipped under Japanese beetle quarantine regulations has steadily increased during the last two years. Fluctuations have occurred each year in the amount shipped inside and outside the area, but the totals of both have increased from 4,318,098 in 1954 to 4,615,959 by June 30, 1956. Declared value of stock shipped during this period has decreased by approximately $400,000. The apparent reasons are large shipments of low cost shrubbery at wholesale rates instead of high priced balled and burlapped material; increased sales of small plants to chain stores; and purchase of lower cost or smaller sized plants by home owners.

Changes in chemical certification treatments have been few; all were supplementary to existing authorized methods. Treatments involved were the injection method using miscible ethylene dibromide, and plot treatments with various insecticides. Increased use by plant growers of metal containers, such as beer cans, tomato cans and others up to five-gallon capacities, resulted in variation of the soil volume in each batch offered for treatment with the injection method. The standard clay pots universally used before had constant volumes, but the cans are of many sizes and are filled to different heights. Treatment on basis of can diameter as in pots would result in an overdose of chemical and probably in injury to plants. The amounts of insecticide have been determined for soil volumes, arranged in tabular form and distributed to inspectors.

With regard to plot treatments, the length of certified status after initial treatment has been liberalized. The certifiable period varies according to the chemical employed. DDT and dieldrin treated plots may remain in a certified status for five years after initial treatment; chlordane and aldrin plots for four years. Certifiable periods after treatment with heptachlor and toxaphene have not been determined. Indications are that heptachlor would be limited to one year and that toxaphene would be listed in the four or five year group. All of these certifiable periods are contingent on non-disturbance of soil in the plot except for normal cultivation and plant removal.

Chlordane, DDT and heat are the treatments most commonly chosen by nurserymen for soil certification. Some few still employ

carbon disulphide which is effective but hazardous, due to the possibility of flash fires.

Other Japanese beetle work during the summer of 1955 was conducted along the same lines as in the previous years. This included plane and airfield treatments, farm products certification, checking trucks and the survey for adult beetles.

NURSERY STOCK SHIPPED UNDER CERTIFICATION

Month	Outside Area	Inside Area	Totals
1955			
July	201,788	25,810	227,598
August	26,491	3,000	29,491
September	328,383	24,647	353,030
October	281,034	53,894	334,928
November	176,464	14,823	191,287
December	130,780	33,463	164,243
1956			
January	339,295	48,478	387,773
February	342,698	40,127	382,825
March	425,632	237,713	663,345
April	796,072	452,226	1,248,298
May	312,954	35,477	348,431
June	223,200	61,510	284,710
Totals	3,584,791	1,031,168	4,615,959*

* Value by shippers estimated at $1,255,900.

CLASSIFICATION AND NUMBER OF PLANTS CERTIFIED

(a) Number plants treated "after digging"	512,562
(b) Number plants treated in the field "before digging"	4,121,334
(c) Plants manually and visually inspected	1,259,174

SUMMARY OF PLANT TREATMENTS

"PLANTS AFTER DIGGING"

Insecticide or Fumigant	No. of Plants
Ethylene dichloride	34,454
Ethylene dichloride-dibromide	207,781
Ethylene dibromide-chlordane	255,056
Methyl bromide	9,087
Miscible ethylene-dibromide	6,184
Totals	512,562

"PLANTS BEFORE DIGGING"

Insecticide or Fumigant	No. of Plants	No. Sq. Ft.
DDT (includes initial treatment, retreatment, and areas previously treated that did not require additional DDT)	3,643,525	4,513,644
Chlordane	477,768	1,889,910
Ethylene dibromide-chlordane	41	74
Totals	4,121,334	6,403,628

SURFACE SOIL TREATED IN GREENHOUSES, FRAMES, SHEDS, HEELING-IN AREAS, ETC.

Insecticide or Fumigant	No. Sq. Ft.
DDT (includes initial treatment, retreatment, and areas previously treated that did not require additional DDT)	532,041
Chlordane	1,614
Lead arsenate (includes initial treatment, retreatment, and areas previously treated that did not require additional lead arsenate)	13,262
Total	546,917

POTTING SOIL TREATED

Agent	No. Cu. Yds.
Carbon disulphide	27.40
Chlordane	154.50
DDT	214.06
Heat	321.68
Total	717.64

MEN EMPLOYED

Month	Airport Survey and Farm Produce		Nursery and Greenhouse		Totals	
1955	Federal	State	Federal	State	Federal	State
July	4	5	4	1	8	6
August	4	5	4	1	8	6
September	..	..	6	4	6	4
October	..	..	6	4	6	4
November	..	..	6	4	6	4
December	..	..	6	4	6	4
1956						
January	..	..	6	4	6	4
February	..	..	6	4	6	4
March	..	..	6	4	6	4
April	..	..	6	4	6	4
May	..	..	6	4	6	4
June	1	1	5	3	6	4

NUMBER OF AUTOMOBILES OPERATED EACH MONTH DURING THE YEAR

Month	State
1955	
July	12
August	12
September	10
October	10
November	10
December	10
1956	
January	10
February	10
March	10
April	10
May	10
June	

NUMBER OF PERSONAL CALLS MADE

Plant material and soil	3,731
Farm produce	86
Total	3,817

COMPARISON OF 1954-55 AND 1955-56 OF PLANTS CERTIFIED, SURFACE AREAS AND BULK SOIL TREATED

(a) Number of plants treated "after digging" with methyl bromide, ethylene dichloride, ethylene dichloride-dibromide, miscible ethylene-dibromide injection and ethylene dibromide-chlordane.

1954 - 1955	1955 - 1956
791,721	512,562

(b) Number of plants treated in the field "before digging" with DDT and chlordane.

1954 - 1955	1955 - 1956
3,663,463	4,121,334

(c) Number of plants manually and visually inspected.

1954 - 1955	1955 - 1956
1,039,586	1,259,174

(d) Number square feet of surface soil treated with:

	1954 - 1955	1955 - 1956
DDT	274,875	532,041
Chlordane	63,713	1,614
Ethylene dichloride-dibromide	1,512	
Lead arsenate	20,746	13,262
Totals	360,846	546,917

(e) Potting soil treated - cubic yards:

1954 - 1955	1955 - 1956
711.61	717.64

(f) Nursery stock shipped under certification:

1954 - 1955	1955 - 1956
4,583,505	4,615,959

FARM PRODUCTS

Units Shipped Under Certification

Month	No. Trucks	Commodity: Apples (bushels)	Peaches (bushels)	Cabbage (crates)	Beans (bushels)	Corn (crates)
July 1955	51	17,758	5,300	2,600	65	602
August 1955	32	3,420	18,095	....	....	....
June 1956	15	....	....	2,186	5,921	...
Totals	98	21,178	23,395	4,786	5,968	602*

Value by shippers estimated at $195,087.

* The 602 crates of corn were certified after fumigation with methyl bromide. All other shipments were certified after visual inspection.

NUMBER OF PLOTS, FRAMES, GREENHOUSES, CERTIFIED WITH DDT

Dec. 31, 1955

Nursery	Plots	Frames	Greenhouses	Square Feet	Plants	Samples*
Beebe, H.	3	17	....	48,251	36,108	6
Brookfield Gardens	2	....	....	5,424	....	2
Bobbink & Atkins	26	....	12	469,373	465,476	44
Clarin, A.	1	....	....	22,763	....	1
Dahliadel Nursery	....	....	1	1,265	....	1
Day's	....	....	2	2,520	....	1
Dirkmaat Azalea Farm	2	....	7	37,446	88,628	9
Fischer, C.	1	16	9	164,122	63,000	30
Ferdinand, G. R.	1	....	....	7,128	1,208	1
Hamilton, T.	2	....	....	40,482	35,000	3
Hanna Dahlia Gardens	....	5	1	1,416	....	6
Hess Nurseries	2	....	5	9,187	83,300	7
Holly Haven	1	....	....	9,788	....	1
Jarvis, B.	1	....	....	18,054	....	1
Jones, E.	1	....	....	3,816	....	1
Koster Nursery	13	....	2	426,836	439,212	28
Leach Nursery	10	6	3	276,947	180,600	24
Levick Nursery	11	....	2	354,292	271,304	25
Mood, J. R.	9	3	....	321,296	144,300	23
Moorestown Gardens	....	....	2	4,779	....	2
Perkins deWilde (Roadstown)	32	....	....	1,183,426	82,892	70
Perkins deWilde (Shiloh)	22	....	....	606,209	58,342	40
Roehrs, J.	3	....	2	187,413	224,350	13
Rummel Nursery	2	....	1	5,986	2,645	3
Shoreway Nursery	3	9	....	29,775	12,000	13
Tricker, Wm.	....	....	2	1,001	400	2
Vanderhoff Greenhouse	....	....	1	4,368	....	1
VanDine Nursery	4	....	3	33,653	140,200	7
Verkades Nursery	2	25	7	136,375	1,191,560	16
Vlamynck, O.	4	....	3	133,020	191,983	11
Totals	158	81	65	4,546,411	3,712,508	392

* Number of samples necessary for soil analysis to determine the amount of additional DDT needed to raise concentration to required dosage.

COOPERATIVE ECONOMIC INSECT SURVEY

Since the fall of 1953, the Cooperative Economic Insect Survey has functioned to provide the agricultural interests of this State with increased information on the status and activity of insect pests. In the past year, the work has ranged from participation in established surveys to the inauguration of new surveys which should increase the effectiveness of the program. Data gathered in the course of the surveys have been widely disseminated, and reports of the usefulness of the information have been encouraging. A summary of the surveys conducted during the year follows.

Survey of Codling Moth and Curculios on Apples

Codling moths and curculios are serious pests of apples in New Jersey, and adequate control of these insects is dependent upon proper timing of insecticidal applications. This timing is contingent upon accurate information on the appearance of adults and subsequent activity of the insects in apple trees within orchards. In order to obtain this information, an apple orchard near Glassboro was selected where activity of the insects might be observed. A codling moth trap was placed in a tree in this orchard.

Two or three times a week, during the spring months, one member of the survey crew visited the orchard and examined the trap for codling moth adults. In addition, several trees, under which sheets had been spread, were jarred to dislodge curculios. The time of appearance and number of insects obtained were noted. These observations materially aided research and extension personnel in providing growers with details on the timing of control measures.

Light Trapping

Discussions with research and extension personnel of the New Jersey Agricultural Experiment Station have led to the conclusion that light traps would provide valuable data on the activity and abundance of certain economically important insects, and lead to more accurate timing of control measures. A start was made on the program this year to gain experience and provide a basis for future expansion.

Two traps of the black light type were purchased by the Experiment Station and placed on two farms in Burlington County. Members of this Department collect the insects from the traps twice each week and transport them to the White Horse station where they are picked up by Experiment Station personnel. The insects are sorted and a count made of the species which are of economic importance.

The limited amount of trapping done thus far indicates that the traps are effective in obtaining large numbers of the insect species that are of interest. However, a problem does exist in that

many of the specimens are mangled beyond recognition because they are not killed immediately after they enter the trap and their subsequent activity in the container leads to mutilation. Several killing agents have been tried in the traps to overcome this difficulty, but to date none has been entirely successful. Additional experimentation on this phase of the program will be undertaken, and other portions of the project will be studied in an effort to provide an increasingly effective trapping program in the future.

Collection of Codling Moth Larvae for DDT Resistance Studies

Resistance to DDT by the codling moth has been reported from several states during recent years, and the use of insecticides other than DDT to control adequately this destructive apple insect has become necessary in some areas.

Sporadic reports of codling moth resistance to DDT have been made by some New Jersey apple growers. Close investigation has revealed that improper formulation and application of the insecticide have been the major causes of failure of DDT to provide adequate codling moth control. However, there was a basis for suspicion that some resistance to DDT by the codling moth might be present in some areas. The cooperators therefore agreed that the collection and subsequent testing of codling moth larvae from certain orchards which had reported extreme difficulty in controlling this pest would be important to research workers and growers in the State.

Two orchards in Burlington County were selected where DDT had been used extensively, and codling moth control was considered inadequate. Also, one orchard was selected in Warren County where DDT had never been used.

The plan was to collect approximately 1,500 codling moth larvae in each of these orchards. The larvae would then be reared in the laboratory, and their offspring would be subjected to various concentrations of DDT. The results, it was hoped, would show whether resistance to DDT by the codling moth was present. Results would also be used to compare the extent of resistance in insects from orchards which had been exposed to DDT with resistance of insects collected from the orchard which had never been sprayed with the insecticide.

Field work on the project was initiated during November and

the survey crew collected larvae as weather conditions and other factors permitted until March.

As the collection work progressed, it became evident that the bird population was very important in reducing the codling moth population as evidenced by the large number of empty larval cases with pick-out holes. It became necessary to debark an increasing number of trees to obtain a given number of larvae as the winter progressed. In the first orchard in Burlington County, 1,500 larvae were readily obtained mainly by the use of the slower method of digging out the larvae with pocket knives. A longer period of time was needed to collect 1,000 larvae from the second orchard in Burlington County by the use of the rapid debarking method. In the Warren County orchard, the last from which collections were made, an extended period was needed to obtain 500 larvae.

As the larvae were collected they were placed in pint or quart size cardboard containers, which had been filled with one inch wide strips of corrugated cardboard rolled to a size to fit snugly within the diameter of the container. A short while after being placed in these containers, most of the larvae would enter into a space provided by the corrugations of the cardboard strips and spin loose cocoons about themselves. These containers provided a convenient means of storing the insects and holding them until emergence of the adults in the spring.

The rearing and testing of the progeny of the collected larvae will take place during the 1956 growing season, and a complete report of the findings should be available for the next annual report.

Poultry Ectoparasite Survey

The poultry industry occupies first place in the agriculture of this State.

The importance of providing poultry stock with comfortable conditions, which are conducive to the maximum production of eggs and meat, has been demonstrated many times by research personnel and growers. All are agreed that maintaining the flock with the least disturbance from lice, mites and other ectoparasites substantially aids in efficient production of poultry products.

Since the end of World War II, research personnel have experimented with new insecticides for the control of poultry ectoparasites and advice on their use has been distributed to growers.

A survey has been initiated to obtain information on the occurrence and distribution of poultry ectoparasites. In addition, information is being gathered on materials which are being used to control ectoparasites and the apparent effectiveness of these materials under field conditions. With only a small additional expenditure of time by the survey crew, information of importance in other phases of the industry is being obtained.

The procedure followed by the survey crew in conducting the survey at each farm is to obtain all the necessary data about the flock and control measures applied by the farmer. Then five birds from each of five pens are examined for ectoparasites and the environs of each pen are checked for the presence of these pests in secluded places. Due to the reluctance of some growers to allow the inspectors to enter the pens or handle a large number of birds, the actual observation of ectoparasite conditions has been restricted in some instances, but in most cases, a useful amount of information is being obtained.

Field work on this survey was started in April, and after the regular survey crew was assigned to certification work, one temporary inspector was employed to work full time on the project through the summer. Thus far, approximately 60 farms have been surveyed. It is planned to survey about 200 farms by the fall of 1956.

A full report of the findings of the survey should be available for inclusion in the next annual report of this Department.

European Corn Borer Surveys

The survey to determine the fall population of the European corn borer was started October 3 and completed on November 1. One hundred ten fields in the 12 major corn producing counties of the State were examined. Five fields were inspected in Camden and Cumberland counties, while 10 fields in each of the remaining counties were surveyed.

CORN BORER SURVEYS

County	Average Number of Borers per 100 Plants 1955	1954
Sussex	38	3
Warren	31	16
Hunterdon	92	12
Somerset	117	3
Middlesex	250	25
Monmouth	242	29
Mercer	394	36
Burlington	197	46
Gloucester	223	56
Salem	94	16
Cumberland	75	31
Camden	367	63
State mean comparable counties (12)	177	28

A comparison of the 1954 figures with those of 1955 indicated that the population had risen considerably. Every county showed an increase in the number of borers present. These counts forecast early damage from European corn borer during the spring of 1956 unless weather conditions were unfavorable for young larvae as they emerged from the egg stage.

Estimates on the monetary loss caused by European corn borer in New Jersey in 1955 have been prepared by the Federal Agricultural Research Service on the basis of the infestation determined by the survey.

ESTIMATES OF DAMAGE BY THE EUROPEAN CORN BORER TO CORN GROWN FOR GRAIN IN 1955

County	Estimated Production* (bushels)	Borers per 100 Plants (number)	Loss	
			Per Cent	Bushels
Burlington	613,216	197	5.91	38.517
Camden	107,419	367	11.01	13,290
Cumberland	96,600	75	2.25	2,223
Gloucester	277,435	223	6.69	19,891
Hunterdon	318,393	92	2.76	9,037
Mercer	247,296	394	11.82	33,148
Middlesex	113,601	250	7.50	9,210
Monmouth	372,489	242	7.26	29,159
Salem	580,372	94	2.82	16.841
Somerset	158,424	117	3.51	5,762
Sussex	47,913	38	1.14	552
Warren	325,348	31	.93	3,054
Total				180,684
Dollar value at $1.40 per bushel				$252,958

* Based on Crop Reporting Service estimate of 3,864,000 bushels.

In the spring of 1956, a survey was made to determine the mortality of larvae due to various natural agencies and to check phenological development of the borers. The procedure followed was the same as that employed in the 1955 spring survey. Eighty-three fields were examined.

It was found that the average per field reduction on a state-wide basis was 42.1 per cent. The causes of death of the overwintering larvae are given below.

Bird Feeding (per cent)	Parasitization (per cent)	Mechanical (per cent)
74.7	24.1	1.2

Results of this year's surveys indicated that a substantial increase in the corn borer population would be likely during the 1956 growing season. The population entering hibernation in the fall of 1955 was several times as high as the population in the fall of 1954, and the amount of overwintering mortality as determined in the spring of 1956 was approximately equal to the larval mortality of the previous spring. These facts prompted the issuance of warnings to growers to be alert to the possibility of serious infestations of European corn borer in 1956. This prediction was substantiated by a very heavy infestation of corn, potatoes and small grains by the first brood of borers.

In the major corn producing counties, there are two areas where European corn borer has been found in greatest abundance year after year. The first of these is composed of eastern Somerset, southern Middlesex, western Monmouth and most of Mercer counties. The second area includes western Burlington County, northern Camden and Gloucester counties, eastern Salem and the northwestern part of Cumberland County.

The northern area of corn borer abundance corresponds fairly closely to the white potato and truck crop production area. The southern area of corn borer abundance is generally confined to the truck crop and sweet corn growing area.

It is well known that white potatoes, beans, beets and some weeds are extensively attacked by European corn borer. Areas of the State where the production of grain, hay and forage predominate do not have as heavy corn borer populations as the potato and truck crop areas.

Survey of Nematodes Associated with Corn Roots

In the last few years the Entomology Department of Rutgers University has undertaken an intensive study of the nematodes present in soil and associated with the roots of agricultural crops in this State. This effort has been substantially aided by the collection of plant and soil samples by the survey crew. The inspectors engaged in the European corn borer survey in the fall of 1955 also obtained samples of corn roots for nematode examination.

One sample was collected from each county. Each sample consisted of the roots of five corn plants and a small quantity of soil which adhered to the roots. These were placed in plastic bags and forwarded to the New Jersey Agricultural Experiment Station for the identification of root and soil inhabiting nematodes. Information thus gathered will aid materially in expanding knowledge of the nematode problem which has become increasingly important in the last several years.

Peach Borer Survey

The results of a survey made during the winter of 1953-54 showed that 31 per cent of the peach trees examined were infested with peach tree borer, *Sanninoidea exitiosa*. Lesser peach tree borer, *Synanthedon pictipes*, was found infesting 32 per cent of the trees. In accordance with previous arrangements, the Agricultural Extension Service distributed the results of the survey to peach growers and urged increased emphasis on control of these important pests. In order to check on the effectiveness of this procedure, another survey was conducted during the 1955-56 winter. Orchards surveyed in each county were selected at random within known areas of commercial production.

In each orchard, the butts of 10 trees were examined to just below the crotch for signs of peach tree borer. If frass was found in gum exuding from the tree, the inspectors scraped into the tree to detect live larvae. Peach tree borer was scored as present only if a live larva was found. The inspectors determined the number of larvae present in the first tree found to be infested.

The trees were examined at the crotch and above for gumming, and if frass was present in the gum, lesser peach tree borer was scored as present. Information on borer control treatments which had been applied and other pertinent data were recorded.

RESULTS OF THE 1955-1956 WINTER PEACH TREE BORER SURVEY

County	Number Locations	Per Cent Trees Infested Peach Tree Borer	Average Number Borers per Infested Tree	Per Cent Trees Infested Lesser Peach Tree Borer
Warren	2	5	1	5
Morris	2	5	1	....
Hunterdon	1	30	1	5
Somerset	2	15	5	....
Middlesex	3	16.7	1	23.3
Monmouth	10	10	1.3	15
Mercer	2	....	..	....
Burlington	15	22	2.8	16
Camden	10	15	1	7
Gloucester	10	25	1.4	32
Atlantic	12	38.3	1.3	42.5
Cumberland	6	23.3	1.6	26.7
Total	75			
State Average		20.1	1.6	20.0

The table above shows that 20.1 per cent of trees examined contained peach tree borers in 1955-56. This compares with 31 per cent of trees examined in 1953-54. Infested trees showed an average of 1.6 borers per tree, with individual trees containing as many as 12 borers. Experience has shown that no more than one-half the borers present may be detected by a single examination.

The southern area, as in 1953-1954, had the highest peach tree borer infestation. Atlantic County showed the highest incidence, 38.3 per cent of all trees being infested. Other major peach producing counties in southern New Jersey had similar populations.

Even though populations have decreased since the previous survey, it appears that considerable margin for improvement exists in control of this pest.

An analysis of the lesser peach tree borer situation shows that lesser borers are found to be more numerous in the southern counties. Again, percentage infestation was lower in 1955-1956 than in 1953-1954.

The following table indicates the major treatments practiced by growers. In addition to these, such combinations as DDT-parathion, BHC-parathion, parathion alone, and PDB gas-parathion sprays were applied.

The percentage of trees infested in orchards that received treatment was less than in orchards that received no treatment in 1955. Of the treated orchards, the various spray combinations were superior to the PDB fall gassing operation. Of course, the

OCCURRENCE OF PEACH TREE BORERS IN RELATION TO MAJOR COMMERCIAL INSECTICIDE TREATMENTS

Treatments	Number Orchards	Per Cent Trees Infested with Peach Tree Borer	Per Cent Trees Infested with Lesser Peach Tree Borer
DDT (Trunk spray July and August)	7	15.7	10
DDT-BHC (Trunk spray DDT-July, BHC-August)	12	5.8	10
BHC (Trunk spray July or August & September)	4	10	7
PDB (Fall Application)	28	25.7	31.7
No Treatment - 1955	8	41.3	30

possibility exists that PDB gassing operations were not carried on correctly due to inexperienced labor or delay in application. On the basis of this preliminary information and from a practical standpoint, the sprays would appear to be superior.

Orchards receiving the DDT-BHC spray treatments (DDT in July and BHC in September or October) had the least infestation. BHC sprays alone, applied at various times during the season, were also effective. The standard recommended DDT applications also reduced infestation remarkably. These results are in contrast to reports from the south where trunk sprays were reported to be ineffective.

Lesser peach tree borer populations were considerably less in orchards where trunk sprays were applied for peach tree borer control. Despite reports that the trunk sprays do not control lesser borer, these data encourage their use.

Forage Pest Surveys

Since the fall of 1953, fall and spring surveys of insects attacking alfalfa and clovers have been conducted. The purpose of these surveys has been to follow closely the activity of insects feeding upon the alfalfa and clover crops and on the basis of information thus gathered to issue warnings to growers to apply control measures.

This year, the fall survey consisted of three parts. The first portion was a check on the number of spittlebug egg masses present in alfalfa fields. Secondly, the survey was designed to obtain information on the number of alfalfa weevil egg masses present in alfalfa stems in the commercial fields of the State. The last part of the survey was concerned with an investigation of pests attacking red clover.

The spring survey had as its objectives the determination of the number of spittlebug nymphs, pea aphids and alfalfa weevils active in alfalfa fields. In the spring, in addition to gathering data on alfalfa weevil adults and larvae, the survey crew also obtained alfalfa stem samples to be examined for the presence of alfalfa weevil egg masses. It was hoped that this information would allow an earlier analysis of the impending alfalfa weevil infestation and promote more effective timing of control measures.

With the exception of the report on the survey of red clover pests given below, the other surveys are presented in conjunction with information obtained from previous surveys. The purpose of presenting the material in this way is to show more effectively the reliability of the techniques employed in relation to field conditions which have materialized after data were gathered. Also, in presenting several seasons' results in consolidated form, a more accurate analysis of population fluctuations or trends may be obtained.

Red Clover Pest Survey (Fall 1955)

In connection with the alfalfa pest survey, an investigation of red clover pests was arranged during the fall of 1955. For several years, extension and research workers in New Jersey and adjacent states have reported that red clover stands have been difficult to maintain for the second cutting of the year after seeding.

Clover root borer, *Hylastinus obscurus*, is a possible cause of poor stand survival. Also suspected as contributing causes are various fungi, bacteria and nematodes. There is a possibility of an interrelation between any or all of these agents.

From each of 33 red clover fields located throughout the major red clover production areas, 20 plants were brought to the laboratory for examination.

Plant samples were examined for insect injury, root rots and in some instances for nematodes.

The following table shows that of 32 fields sampled, 26 showed apparent scars of insect feeding on the roots. Six samples showed roots 100 per cent injured and 10 samples had more than 50 per cent of roots with insect injury. Ten samples had 50 per cent or less of roots injured by insects. Very little is known of the insects responsible for this injury.

RESULTS OF INSPECTION OF RED CLOVER ROOTS FOR INSECT ACTIVITY, ROOT ROTS AND PLANT PARASITIC NEMATODES

County	Number Locations	Per Cent Insect Damaged (10 plants)	Per Cent Plants with Internal Root Rots	Severity of Damage from Root Rot	**Plant Parasitic Nematodes Per Gram of Soil	In the Soil
Warren	1	100	no reading	no reading	50	many
	2	40	75	slight-severe		
	3	60	80	slight-moderate		
	4	50	80	slight-moderate		
Morris	1	0	0	no reading		
Hunterdon	1	60	0	no reading	0	moderate
	2	100	100	slight-severe	30 or less	few
	3	100	100	slight-severe		
	4	100	100	moderate-severe		
Somerset	1	40	no reading	no reading	40	moderate
	2	0	0	no reading	50	few
	3	60	25	slight	200	few
	4	50	67	moderate	20 or less	very few
	5	80	44	moderate	200	many
	6	50	no reading	no reading		
Middlesex	1	0	24	very slight		
	2	30	48	slight		
Monmouth	1	40	50	slight	60	moderate
	2	60	61	slight		
Mercer	1	100	no reading	no reading		
	2	60	no reading	no reading		
Burlington	1	80	80	slight-moderate	550	many
	2	40	10	slight	30 or less	moderate
Camden	1	93	no reading	no reading	150	few
	2	0	no reading	no reading		
Gloucester	1	0	20	very slight	0	moderate
	2	no reading	no reading	no reading	250	many
Salem	1	90	70	moderate-severe		
	2	80	90	slight-moderate	40	moderate
Cumberland	1	50	74*	slight-moderate*		
	2	0			60	few
Cape May	1	100	100*	slight-severe*		
	2	25			550	very many

* Represents an aggregate reading of both locations in that county.

** Type of nematodes found were: root-knot, *Meloidogyne hapla;* meadow, *Pratylenchus* spp.; lance, *Hoplolaimus* sp.; stylet, *Tylenchorynchus* sp.; and *Tylenchus* sp.; *Aphelenchus* sp. and *Aphelencoides* sp.

Of 23 roots sampled, 20 showed presence of root rots. Isolation of organisms from red clover fields in New Jersey showed that 64 per cent yielded *Fusarium* sp., the remainder consisting of *Mucorales, Penicillia, Trichodermis, Rhizoctonia* and other fungi. The finding of plant parasitic nematodes in all 17 locations examined is significant because of the accompanying root rotting in many of these fields. As in other crops, the possible relationship between nematode and soil fungus infestation may be

important, and it is conceivable that nematode control might greatly reduce root rotting. The moderate to heavy infestations of nematodes found in most areas were considered to be probably sufficient to reduce yields even if no soil fungi were involved.

The demonstration of at least seven different genera of nematodes associated with clover is important not only as additional host records for the nematodes, but also because clover rotations may help to maintain in the soil nematodes that will attack the more valuable vegetable and field crops in the rotation program.

These findings represent the results of a preliminary survey of problems which may be of importance in red clover production. Apparently a great deal of insect-caused root damage is being sustained by red clover plantings. More work is needed to determine the pest or pests involved and to arrive at control measures.

The extent of root rotting indicates the need for further investigation. The general nematode infestation very probably limits growth of red clover and may be of importance in causing trouble to other crops in the rotation.

This survey should act as a basis for research, and serve as a stimulus to further work on the problem of maintaining red clover stands in New Jersey.

Spittlebug Surveys (1953-1956)

Since the fall of 1953, fall and spring abundance surveys of meadow spittlebug, *Philaneus leucophthalmus*, have been conducted.

In the fall surveys, 15 red clover plants in an alfalfa field were examined for egg masses per field. In the spring in the same fields, five dandelion plants were examined for young nymphs. Results have shown a correlation between the number of egg masses collected in the fall and the number of nymphs observed in the following spring.

The ratio between the number of egg masses and the number of nymphs is quite constant, on a state-wide basis. In individual counties, there is some variation. However, it is felt that natural variation and difficulties in surveying at the right time in the spring may account for these differences.

In 1956, the infestation of spittlebugs was low, being four times lower than 1954 and twice as low as 1955.

Each year the northwestern counties show the heaviest population. Warren, Hunterdon and Somerset have usually had highest populations, although Mercer, Morris and Sussex counties are often heavily infested. Monmouth and Middlesex counties have had low populations and in two of three years, Burlington County has had relatively lower numbers of spittlebugs.

RESULTS OF SPITTLEBUG SURVEYS, 1953-1956

County (Number of Fields Examined)	Average Number Egg Masses Fall 1953**	Average Number Nymphs Spring 1954***	Average Number Egg Masses Fall 1954	Average Number Nymphs Spring 1955	Average Number Egg Masses Fall 1955	Average Number Nymphs Spring 1956
Sussex (5)*	1.8	11.8	2.0	13.2	1.0	5.8
Warren (5)	7.0	55.4	0.8	82.4	3.4	20.8
Hunterdon (5)	14.0	61.0	2.5	20.0	1.6	14.2
Morris (3)	7.7	34.7	2.7	5.6	2.0	2.7
Somerset (3)	7.7	109.3	1.6	43.6	3.0	9.0
Middlesex (3)	0.3	20.3	0.0	0.3	3.0	1.7
Mercer (3)	2.0	78.3	5.0	9.3	0.0	2.3
Monmouth (3)	0.0	15.3	0.7	6.7	0.3	2.0
Burlington (5)	1.4	6.0	0.2	1.2	0.2	13.6
Camden (3)	0.7	14.0	2.0	7.3	1.0	0.0
Gloucester (3)	4.0	9.0	2.7	37.6	0.0	12.0
Salem (5)	1.6	11.5	2.6	8.2	0.4	7.2
Cumberland (3)	0.7	22.0	0.0	13.0	0.0	1.3
Cape May (3)	1.0	2.3	0.0	1.7	0.0	0.0
State average per field	5.4	30.5	3.1	18.8	1.2	7.7
Ratio — Egg masses: Nymphs	5.7		6.1		6.4	

* Number of fields surveyed.
** Average number of egg masses per 15 red clover plants per field.
*** Average number of spittlebug nymphs per 5 dandelion plants per field.
() Number of locations surveyed in each county.

Again spittlebug populations were lower in southern New Jersey, except that Gloucester County for two years has had a higher infestation than other areas.

Pea Aphid Surveys (1955-1956)

During April and May, 15 fields selected at random in as many counties were surveyed at weekly intervals for pea aphids. Five 180° sweeps per field were taken by a standard insect net.

Without exception, populations of aphids in northern and central New Jersey started at lower levels than in southern New Jersey and built up slowly during the periods the surveys were conducted. The peak population of aphids recorded the last day of survey in northern counties was comparable to the population of aphids in the southern counties on the first day of survey. Although it was not possible to continue the surveys after June 1, the population levels of aphids in the northern counties

NUMBER OF PEA APHID NYMPHS AND ADULTS PER 5 SWEEPS (1955)

County	April 19*			April 27			May 3**			May 10			May 17			May 24		
	Total No.	WFP***	Height (in.)	Total No.	WFP***	Height (in.)	Total No.	WFP***	Height (in.)	Total No.	WFP***	Height (in.)	Total No.	WFP***	Height (in.)	Total No.	WFP***	Height (in.)
Sussex	0		10	1		10	16	F	16	26		19	73	F	30			
Warren	0		13	2		13	2		14	4	F	23	36	F	21	98	F	25
Morris	2		10	0		10	0		16	5	F	20	24	F	22	197	F	24
Hunterdon	1	F	11	2		11	2	F	13	4	F	23	35	F	25	261	F	25
Somerset	0		12	1		12	32		18	20	F	18	46	F	19	77	F	20
Monmouth	3		8				3		13	11	M	14	95	F	20	mowed		
Middlesex	2		8				7		12	26	F	18	95	F	26	560	S	31
Mercer	0		8				12		14	43		18	177	F	24	490	S	26
Burlington	9		8				127	F	12	617	F	17	510	F	25	580	S	28
Camden	3		8	field removed						487	F	15	850	S	15	1,350	S	18
Gloucester	185		40	172	F					820	F	20	600	F	24	mowed		
Salem	826	F	12	36	M					195	F	20	117	F	30	565	S	30
Cumberland	595	F	12	695	S					1,350	F	20	1,125	S	24	2,300	S	24

* Gloucester, Salem, Cumberland counties done April 21.
** Sussex, Warren, Morris, Hunterdon, Somerset counties done May 4.
*** WFP - Winged females present. F - few; S - some; M - many.

NUMBER OF PEA APHID NYMPHS AND ADULTS PER 5 SWEEPS (1956)

County	April 30			May 4			May 11			May 18			May 28			June 1		
	Total No.	WFP*	Height (in.)	Total No.	WFP*	Height (in.)	Total No.	WFP*	Height (in.)	Total No.	WFP*	Height (in.)	Total No.	WFP*	Height (in.)	Total No.	WFP*	Height (in.)
Sussex	0		3	1		5	21		8	45		14	40	F	18			
Warren	0		4	1		6	13		10	11		15	160	F	18	300	S	20
Morris	0		4	0		6	0		9	0		15	80	F	18	100	S	22
Hunterdon	0		5	0		7	0		12	1		20	30	S	22	50	S	24
Somerset	0		6	0		9	8		14	4	F	17	40	S	22	80	S	24
Monmouth	3		4	35		10	79		13	210	F	18	325	F	20**	mowed		
Middlesex	0		5	4		8	9		13	35		19	20	F	24**	mowed		
Mercer	0		5	6		9	20		16	250	F	24	520	F	28**	310	F	28
Burlington	3		5	67	F	11	141	F	16	239	F	19	410	F	28**	mowed		
Camden	81		8				92		18	91	F	22	250	M	28**	mowed		
Gloucester	187		13	451	F	15	350	F	16	568	F	25	83	M	30**	mowed		
Salem***	73		13															
Salem***	47		13	215		15	800	F	16	4,480	F	25	7,680	M	26**	mowed		
Cumberland***	214		13															
Cumberland***	171		13	159		15	650	F	16	2,752	F	27	577	M	28**	mowed		

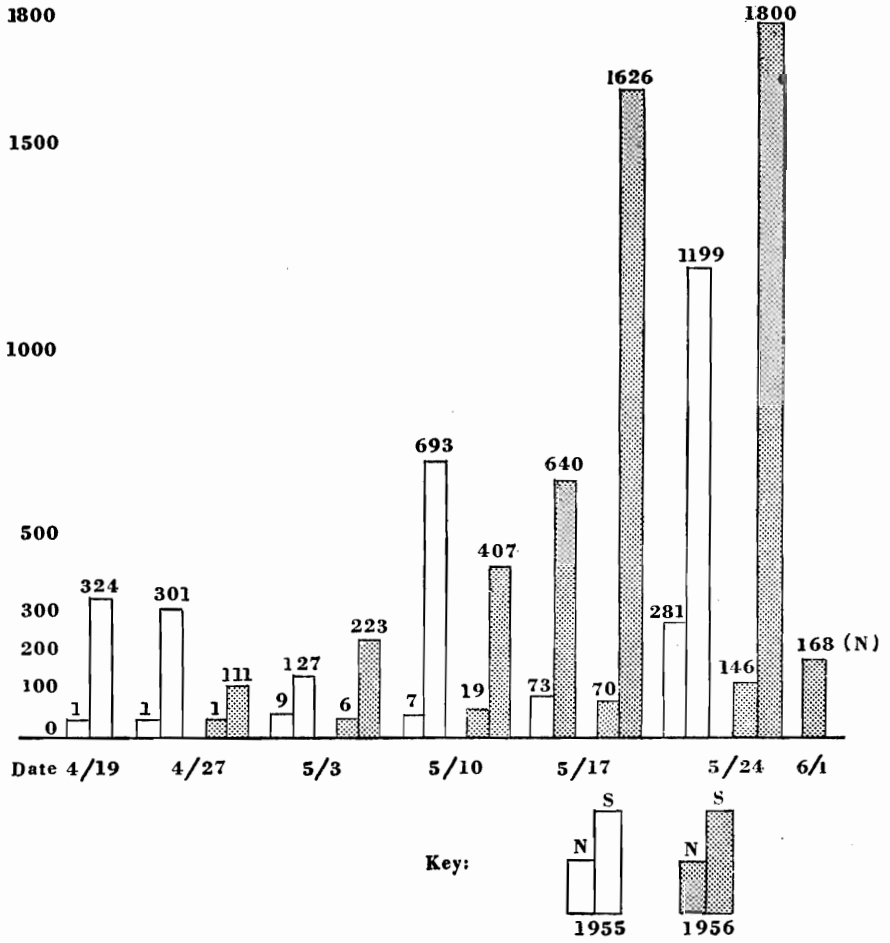
* WFP - Winged females present. F - few; S - some; M - many.

** May 25 Collection date.

*** Pea aphids collected from two locations in each of these counties.

1955-1956 SURVEY OF PEA APHID POPULATION
IN ALFALFA FIELDS IN NEW JERSEY

(Comparable dates year to year are approximate)



N = average number aphids per 5 sweeps per field—northern New Jersey
S = average number aphids per 5 sweeps per field—southern New Jersey

appeared to increase up to first cutting.

In 1955 in southern New Jersey, pea aphid populations dropped off during the second and third weeks of survey because of the effect of insecticides. On May 10, populations again rose quickly, then decreased slightly on May 17 when parasitic disease built up. The drought conditions which prevailed from then on were not favorable to the disease and on May 24 populations had increased four times over the previous week.

In 1955, winged forms were found on first inspection in southern New Jersey and thereafter a considerable number were discovered. Very few winged forms were found until May 10 in northern and central New Jersey.

In 1956, pea aphid populations got off to a slower start than in 1955. However, in the southern counties, 1956 pea aphid populations reached a higher figure than in 1955 by mowing time.

Injury from aphids was not reported in 1956 in northern New Jersey, whereas some aphid injury was sustained in 1955 in that area. Some aphids were found on second cutting in both central and southern New Jersey in 1956.

Alfalfa Weevil Survey (1954-1956)

Alfalfa weevil, *Hypera postica,* caused commercial damage to a few fields in Cumberland and Salem counties in 1954. That year light damage was reported in Gloucester County and a few weevils and larvae were found in Camden and Burlington counties. Individual specimens were found in the central counties and one specimen was taken from Hunterdon County.

In the spring of 1955, a survey for larvae and adult weevils showed that the infestation had spread to all sections of the State. A heavy infestation was found in all counties south of Camden. Camden, Atlantic and Burlington counties showed spotty, heavy infestation. Small numbers of weevils were found in the central and northern counties.

Alfalfa Weevil Survey (Fall 1955)

In order to keep up with the spread of alfalfa weevil as part of the regular alfalfa pest surveys, a cooperative study of fall abundance of egg clusters of this pest was undertaken in 1955. Previous fall surveys for adult weevils failed to locate adults even where infestations were known to be heavy. The method

of counting egg clusters has been found to be a more reliable indication of weevil presence during the autumnal season.

The survey crew gathered 100 alfalfa stems from each of 60 fields selected at random in 14 counties. These stems were examined in the laboratory. Data were taken on number of stems infested, number of egg clusters per stem, number of eggs, location of egg cluster within the stem and the general average height of alfalfa stems in each sample.

RESULTS OF 1955 FALL ALFALFA WEEVIL EGG CLUSTER SURVEY

County	Number of Fields Surveyed	Number of Fields with Egg Clusters Present	Average Number of Egg Clusters per Field in 100 Stems	Remarks
Cape May	3	3	6.6	
Cumberland	7	4	7.7	
Salem	6	4	4.7	
Gloucester	6	5	6.3	
Camden	3	2	4.0	
Burlington	5	3	2.4	
Monmouth	3	2	2.6	
Mercer	3	0	0	
Middlesex	3	1	4.0	One field with 12 infested stems per 100.
Hunterdon	4	1	1.0	One field with four infested stems per 100.
Somerset	3	0	0	
Warren	4	0	0	
Morris	5	0	0	
Sussex	5	0	0	
Total	60			

Figures shown in the table above indicate that, assuming two or more egg clusters per 100 stems would result in economic damage, we might expect economic losses from alfalfa weevil generally as far north as Middlesex and Monmouth counties, and along the Delaware River, possibly as far north as Hunterdon County. No egg clusters were found north of this line but as previously reported small numbers of weevils were found in Warren, Morris, Sussex and Somerset counties. Damage in these areas is not expected to cause appreciable injury in 1956.

Some factors that probably influence this survey are these. Egg deposition is heavier in the later fall than earlier in the autumn. Hence, early collected stems might show fewer egg clusters than later collected stems. Also, a possibility exists that

fall egg laying might be less in northern New Jersey than in the southern counties. In colder regions of the western states, very little egg laying is encountered during the fall. These factors should be considered in subsequent surveys.

Alfalfa Weevil Survey (Spring 1956)

A weekly check was made of a representative field in each major alfalfa growing county from late April to early June of 1956. This period spanned the major period of the activity of alfalfa weevil. Fifty 180° sweeps were made with a standard insect collecting net in each field in all counties except Cumberland, Salem and Gloucester. In these three counties where pea aphid and weevil population was high, only five sweeps were made so that the number of insects could be more easily counted.

In addition to counts of larvae and adults, 25 alfalfa stems were collected from each field and examined in the laboratory for egg masses of the alfalfa weevil.

Alfalfa weevil was present in large numbers as far north as Somerset and Hunterdon counties. Field populations in Sussex, Warren and Morris counties were very low in check fields and commercial damage was non-existent in these counties except for a very few scattered fields in Warren and Morris counties. A comparison of the severity of infestation among counties shows that southern New Jersey has heaviest infestations. In the central New Jersey area, the western counties, Hunterdon and Somerset, had more weevils than the two easterly counties. This may be due to any number of factors, including the possibility of an eastward migration of weevils from Pennsylvania which has reported heavy infestation.

Survey observations indicate that easily visible damage of economic importance appears when five larvae are picked up per sweep of the net.

Presence of an appreciable number of adults in the field preceded the appearance of eggs by about one week. Data for egg laying are not complete. However, eggs appeared in the South Jersey area May 4 and were probably present up to first cutting time. In Camden, Burlington and Mercer counties, eggs were present May 11, while in the other central and the northern counties, eggs did not appear until about May 25. Comparison of stem height and oviposition show that from available data, the heaviest egg

Weekly Records of Alfalfa Weevil Abundance
Spring of 1956

Dates	April 30 (1)				May 4				May 11				May 18				May 28 (2)				June 1			
County	Larvae (3)	Adults (3)	Eggs (4)	Height (5)	Larvae (3)	Adults (3)	Eggs (4)	Height (5)	Larvae (3)	Adults (3)	Eggs (4)	Height (5)	Larvae (3)	Adults (3)	Eggs (4)	Height (5)	Larvae (3)	Adults (3)	Eggs (4)	Height (5)	Larvae (3)	Adults (3)	Eggs (4)	Height (5)
Sussex	.1	0	0	3	0	0	0	5	0	0	0	8	0	0	0	14	0	0	....	18	....	....	....	....
Warren	0	.1	0	4	0	0	0	6	0	.1	0	10	0	0	0	15	0	0	....	18	0	0	0	20
Morris	0	0	0	4	0	0	0	6	.1	0	0	9	0	0	0	15	0	.1	5.6	18	.3	.2	44	22
Hunterdon	.2	0	0	5	0	0	0	7	0	.1	0	12	0	.3	0	20	1.7	.1	6.4	22	15	.2	260	21
Somerset	0	0	0	6	0	.2	0	9	0	.4	0	14	.7	1.1	0	17	32	.1	73	22	50	1	....	24
Middlesex	0	0	0	5	0	0	0	8	0	.3	....	13	0	.6	0	19	1.2	.4	0	24	mowed			
Monmouth	0	0	0	4	0	0	0	10	0	.5	0	13	0	0	0	18	6.5	1.2	25	20	mowed			
Mercer	0	0	0	5	0	1	0	9	0	.5	104	16	0	.5	180	24	7.2	3.5	40	28	14	8	48	28
Burlington	0	0	0	5	0	.3	0	11	0	.4	128	16	0	.4	0	19	11	2	116	28	mowed			
Camden	0	0	0	8	....	....	....	....	0	1.8	76	18	0	3.5	120	22	31.5	4.5	....	28	mowed			
Gloucester	0	26	0	13	39	22	212	15	12	0	72	16	3	0	164	25	1	0	....	30	mowed			
Salem	1.5	9	0	13	6	6	116	15	18	1	88	16	256	0	12	25	960	3	....	26	mowed			
Cumberland	3	6.5	0	13	3	14	144	15	150	100	....	16	352	1	292	27	312	1	....	28	mowed			

1 Collected 4/27 in Middlesex, Monmouth, Mercer and Burlington counties.
2 Collected 5/25 in Camden, Burlington, Monmouth, Middlesex, Mercer, Gloucester, Salem and Cumberland Counties.
3 Figures for larvae and adults are per 5 sweeps.
4 Figures for eggs are per 25 stems.
5 Height is the height of alfalfa in inches.

laying occurred at 25 to 27 inch height. This height is generally reached only shortly before harvest. This suggests that delaying harvest would result in heavier damage and that large numbers of eggs, under 1956 conditions, were removed from the fields at cutting time and killed.

In summary, it may be said that alfalfa weevil populations have steadily increased since the insect was first found in New Jersey in 1952. The results of the 1956 spring survey show that the population of the alfalfa weevil has increased since previous surveys and economic damage was sustained as far north as Hunterdon County.

Current information gathered in the survey was used by research and county extension personnel in following the seasonal build-up of weevils. Information on the newly infested areas was particularly useful.

BEE CULTURE

During the year inspections of apiaries were conducted in all counties except Hudson and Salem. When regular inspections were prevented by weather conditions, survey work to locate abandoned colonies was substituted.

Five hundred forty-seven apiaries were visited during the year. A total of 4,839 colonies and 158 nuclei was examined for bee diseases. American foul brood was found in 102 apiaries, 256 colonies of which were infected with this disease. Thus, 5.3 per cent of the colonies inspected were found to be infected with American foul brood. European foul brood was found in 110 colonies in 18 apiaries. This disease was not as prevalent in South Jersey in 1956 as it was in 1955. The selecting and breeding of stock resistant to this malady continues to play an important role in its control.

During the inspection work in Essex County, it was found that sulfa drugs had been fed to colonies previously infected with American foul brood with the hope of saving them. While the drugs will inhibit the growth of the organism in the bee larvae during the feeding stage, allowing the larvae to develop apparently normally, they are by no means a curative agent and do not destroy the bacillus organism in the resting-seed stage. The organism can lie dormant for years within the hives, combs, propolis, wax or other bee equipment. When not completely eradicated from the

Apiary Inspections
July 1, 1955 to June 30, 1956

Counties	Apiaries	Colonies	Nuclei	Crossed Comb	Apiaries A.f.b.	Colonies A.f.b.	Apiaries E.f.b.	Colonies E.f.b.	Colonies Burned	Microscopic Determination A.f.b.	E.f.b.	Neg.
Atlantic	11	225	....	....	7	29	4	6	....	....	....	....
Bergen	39	198	....	....	6	11	....	....	....	3	....	....
Burlington	20	372	....	....	4	28	11	65	20	16	39	9
Camden	3	95	....	....	....	....	1	2	....	....	....	....
Cape May	2	72	....	....	....	....	....	....	....	....	....	....
Cumberland	17	185	....	....	2	2	1	5	....	3	1	1
Essex	112	554	....	....	25	44	....	....	....	1	....	2
Gloucester	8	75	....	....	2	13	....	....	....	....	....	....
Hunterdon	42	601	158	....	3	13	....	....	12	2	....	....
Mercer	12	62	....	3	1	1	....	....	....	....	....	....
Middlesex	17	55	....	....	4	5	....	....	....	....	....	....
Monmouth	24	368	....	....	4	5	....	....	....	1	....	2
Morris	81	659	....	....	16	32	....	....	....	....	....	....
Ocean	2	14	....	....	....	....	....	....	....	....	....	....
Passaic	22	134	....	....	5	12	....	....	....	....	....	....
Somerset	22	298	....	....	6	16	1	32	4	1	....	....
Sussex	29	284	....	13	4	5	....	....	....	....	....	....
Union	61	310	....	....	12	39	....	....	....	....	2	....
Warren	23	278	....	....	1	1	....	....	....	....	....	....
Totals	547	4,839	158	16	102	256	18	110	36	27	42	14

interior of the hive, the disease is found to recur at a later date when conditions become favorable for growth. This Department does not recognize the feeding of drugs as a control measure for any of the bee diseases.

Thirty-six colonies were burned by the inspector. Sixteen colonies were found in box hives. Twenty-six certificates of transfer and six queen-rearing certificates were issued.

Microscopic Diagnosis

The identification of bee diseases by microscopic examination of dead brood continues to play an important role in this project. The samples of material are customarily submitted through the mails to the Department. Although only approximately 11 per cent of the American foul brood, *Bacillus larvae*, and 3.8 per cent of European foul brood, *Bacillus pluton*, reported for this year were found by this method, the service is valuable because it is available continually. The beekeeper does not need to wait for the inspector and, in many cases, disease is found and controlled before it creates a serious problem in any one area.

Observations

In July, 1955, the weather was very hot and dry with occasional local showers in various parts of the State. These weather conditions had a definite influence on bee behavior. In the sections having had no rain, bees had no source of nectar and robbing of colonies was common. In other areas, receiving a limited amount of rain, deep rooted plants furnished limited amounts of pollen and nectar. The effect on brood rearing and the disposition of bees was apparent in these different areas during inspections.

Heavy yields of nectar were supplied by alfalfa during the month of August. The fall plants, i. e., goldenrod and astor, were definitely benefited by the rains.

A decrease in brood rearing was noticeable during inspections in September. This was largely because of the dearth of nectar secretion. The low prevailing temperatures during December and January were disastrous to colonies that were not properly prepared for winter.

During the past few years in March and April, the commercial

beekeepers in the southern part of the State have been preparing colonies for pollination purposes. In 1956, because of the unfavorable weather conditions during these months, preparations were postponed. However, the season finally opened in mid-May and, with the growing abundance of nectar secreting plants, colonies built up to normal strength.

The outlook for a medium fall crop of honey in 1956 is good.

BUREAU OF PLANT PATHOLOGY

WHITE HORSE ARBORETUM

Field men of this Bureau frequently are asked to identify unusual species of trees used for street and park planting. A plan was established in the fall of 1954 for the planting, at the White Horse field headquarters of this Department, of an arboretum consisting of trees new to the experience of many of the field men. Such a planting would enable the field men to study the characteristics of the various species and thus become experienced in their identification. In the spring of 1955, 22 species were planted at the White Horse headquarters. The protracted hot and dry weather of June and July caused the death of all but seven of these specimens. The surviving seven have been moved to the Van Nest Game Sanctuary. No plans have been made for the replacement of these trees at White Horse because the continuation of the lease for this property is uncertain.

DUTCH ELM DISEASE CONTROL ACTIVITIES
(Calendar Year, 1955)

Dutch elm disease control activities during 1955 consisted of responding to requests for assistance and advice; conducting a general survey to ascertain the trend of the disease; and providing special assistance to localities where the control problem is of importance.

Because the scouting for diseased trees in the 18 parks of the Essex County Park Commission is a formidable task, a representative of this Department again made a survey to assist this Commission. This time should be considered well expended because the boundaries of these numerous parks adjoin many North Jersey municipalities which would be adversely affected if the Essex County Park System control program were ineffectively administered.

A special letter was sent during the middle of June to a number of shade tree custodians in northern New Jersey, advising them that this Department had discontinued the systematic Dutch elm disease survey conducted in previous years but was ready to help with control problems, if requested. Responses to this letter directed our field personnel to municipalities which maintained an active interest in the control of this disease.

The appearance of numerous symptomatic trees throughout northern New Jersey during the first weeks in June presaged a season of considerable Dutch elm disease infection. However, an examination of the survey records indicates that with few exceptions, the disease was less destructive, particularly in municipalities, than it was in 1954. This may be the result of a declining number of remaining elms and an increased effort on the part of municipal officials to follow the control recommendations issued by this Department.

The control recommendations issued by the Department in 1950, have not been substantially changed since that time. The recommended period for the application of pre-foliar spray has been extended so that spraying may be begun by February 1. Prior to this amendment to the recommendations, the pre-foliar spray was to be applied immediately before April 15. Because of wind turbulence and frequent rains during the spring months, many trees did not receive a pre-foliar spray until early in May, probably too late for control of the emerging spring brood of bark beetles. If spraying can begin as early as February 1, more days suitable for spraying are available for this operation.

The removal and burning of dead elm trees with tight bark or the spraying of such trees with a heavy concentration of DDT still remains a useful control weapon. The final disposition of elm wood transported to dumps is equally important. If burning is to be delayed, the application of a heavy dose of DDT to the logs is recommended.

The inadequacy, the costliness and the tedium involved in the employment of the present Dutch elm disease control program is well recognized. Considerable exploration has been made in the field of chemotheraphy for control of this disease. Thus far, none of these medicaments has demonstrated its practical usefulness.

The fungicide "Captan" has recently been introduced to spraying practices, particularly for the control of orchard diseases. The behavior of trees so sprayed indicated that this chemical was

probably absorbed into the trees where some rather significant responses resulted. An example is the changing of the heavy cropping habit of the Baldwin variety of apples from bi-annually to annually. This chemical was variously employed to test its usefulness as a chemothera peutant for Dutch elm disease.

With the cooperation of the Essex County Park Commission, nine Dutch elm disease symptomatic trees were sprayed with "Captan" at the rate of four pounds of a 50 per cent wettable powder to 100 gallons of water. Unfortunately, this spray was not applied until June 16, about three weeks after the appearance of the first symptoms. Of the nine trees so sprayed six displayed a remarkable delay in the progress of the disease and an improvement in the size and color of the foliage. With such encouraging responses, auxiliary experiments were immediately established in the Van Nest Game Sanctuary elm plantation of this Department. Eight three-year-old elm trees each received a soil treatment of a five-gallon volume of "Captan" wettable powder at the rates of 2-4-6-8 pounds per 100 gallons. The trees so treated did not display any foliar damage, and several of them appeared somewhat better in foliage than the neighboring untreated trees. Leaf samples of the soil treated trees were collected at two-week intervals for a period of six weeks. These leaves have been dried and ground and are awaiting chemical analysis to determine the absorption and translocation of the "Captan" to the foliage. Six elm trees, about eight years old, at the White Horse headquarters, sprayed with "Captan" at the rate of 2-4-6-8 pounds per 100 gallons did not show any foliar damage.

The 1955 investigations with "Captan" may thus be summarized: (1) the application of this chemical to large symptomatic elm trees delayed the spread of Dutch elm disease in the trees and likewise stimulated the remaining healthy foliage; (2) at the dosages employed, "Captan" was neither damaging to the roots or leaves of the trees when applied as a soil treatment, nor was it damaging to the foliage of trees when the leaves were sprayed.

Further research will be conducted during the 1956 season. The Essex County Park Commission will provide the services of climbers so that each tree in this experimental program will be sampled and the sample laboratory-cultured. This will establish the certainty that trees in this experiment are Dutch elm disease infected and not symptomatic of another disease.

LOCALITIES OF NOTEWORTHY DUTCH ELM DISEASE INCIDENCE, NEW JERSEY 1955

Bergen County	- Oakland area
Hudson County	- Jersey City
Warren County	- Columbia-Hainesburg-Blairstown Road, Hacketts-town to Hampton along the Musconetcong River
Sussex County	- Andover and environs
Morris County	- Morristown, Morris Plains and Boonton
Union County	- Summit, Westfield and Baltusrol Country Club
Essex County	- Millburn Township and West Caldwell
Somerset County	- Washington Valley Road near Pluckemin and Somerville
Hunterdon County	- Generally distributed - not serious
Middlesex County	- Generally distributed - not serious
Mercer County	- Generally distributed - not serious
Monmouth County	- Rumson-Little Silver-Red Bank area
Burlington County	- A slight decrease in the entire county. Exception to this is 27 cases in city of Moorestown. Source of inoculum not detected.
Camden County	- Brooklawn, City of Camden and the Stafford-Laurel Springs area
Gloucester County	- No symptomatic trees observed this year
Salem County	- No symptomatic trees observed this year
Cumberland County	- No symptomatic trees observed this year
Ocean County	- No symptomatic trees observed this year
Atlantic County	- No symptomatic trees observed this year
Cape May County	- No symptomatic trees observed this year

RESULTS OF OAK WILT SCOUTING IN NEW JERSEY
(Calendar Year, 1955)

Scouting for oak wilt in New Jersey was initiated in 1952. During the first two years of the program, this scouting was conducted principally through a cooperative agreement with the United States Department of Agriculture which entailed the use of aircraft for aerial observation. During this two-year period, a number of suspect trees were sampled but no confirmation was reported.

As no oak wilt infections were found in New Jersey during 1952 and 1953, the Federal Department of Agriculture suggested that the airplane scouting be suspended for 1954. Scouting for this disease in 1954 was entirely from the ground. The 1954 scouting, although some suspect areas were located, did not yield a confirmation of the disease. In 1955 the personnel of the Bureau of Plant Pathology were again instructed to plan their routes of travel so that they would, throughout the summer, traverse most of the first and second class roads in their areas. This plan

provides for a general view of the various oak growing areas of the State and permits the detection of suspect trees that fall within the range of observation of these men. Their reports indicated that the oak trees in this State displayed a better foliage condition during the late summer of 1955 than in any of the three previous years. A sample from a suspect tree at Jenny Jump Forest was cultured at the Rutgers Department of Plant Pathology. The report was negative. Therefore, on the basis of the various oak tree examinations, made during 1955 and the resultant laboratory culture report, which was negative, it may be assumed, as heretofore, that oak wilt is not known to exist in the State of New Jersey.

CONTROL OF CANKER STAIN DISEASE OF LONDON PLANES
(Calendar Year, 1955)

Four field men spent a total of 484 man-days scouting for canker stain and giving information on its control. One man, working in the generally infected area of the Camden metropolitan area, devoted approximately 85 per cent of his time to this project. The other field men assisted in the central and northern sections of the State as time permitted from other projects. The plan to examine all the known London planes in this State, at least every second year, has been quite satisfactorily fulfilled. The area of heavy disease incidence is given an annual inspection so that the concerned tree custodians may be advised of the number of diseased trees to be removed.

The plane trees in 14 counties, comprising a total of 157,010 trees in 169 municipalities, were systematically examined for evidence of canker stain disease. During 1955, 502 new cases of the disease were detected; 446 of these occurred in Camden County.

The heaviest concentration of canker stain infected trees occurs in the northern extremity of Camden County, which has been the only troublesome area since the inception of the scouting and control program. This district is heavily populated with London planes as street trees, many having been planted on real estate developments as early as 1920. During the last five years the unprecedented real estate activities in this area have placed on the street departments of the various municipalities a burden

which has not been satisfactorily met with the type of labor available. Officials of these municipalities are becoming increasingly aware of the necessity for the prompt removal and destruction of canker stain-infected trees. The success in several earlier ventures of the plan for the removal of diseased trees by commercial arborists will probably cause more towns to use professional help, and should result in a sharp reduction in the number of standing diseased trees. Commercial arborists in this area are prepared, with adequate equipment, to assist in this tree removal work.

CANKER STAIN DISEASE CONTROL

Tagged Trees to January 1, 1955

County	Total No. Trees	Total	Total Removed	Standing	Trees Tagged in 1955	Diseased Trees Removed in 1955	Diseased Trees Standing December 30, 1955
Atlantic	11,750	....	....	....	....	....	....
Bergen	7,000	....	....	....	....	....	....
Burlington	19,700	165	163	2	26	25	3
Camden	56,700	3,680	3,547	133	446	162	417
Essex	5,600	1	1	....	....	....	....
Gloucester	6,650	41	39	2	5	2	5
Hudson	5,610	....	....	....	....	....	....
Mercer	6,300	3	3	....	3	3	....
Middlesex	12,425	....	....	....	....	....	....
Monmouth	10,200	1	1	....	....	....	....
Ocean	500	....	....	....	....	....	....
Salem	7,250	99	91	8	21	20	9
Union	6,375	....	....	....	....	....	....
Warren	950	11	11	....	1	1	....
Totals	157,010	4,001	3,856	145	502	213	434

With the exception of a few municipalities contiguous to this northern Camden County area, the canker stain disease picture in the State is very gratifying. The only other area of New Jersey in which a considerable number of diseased trees were found is Riverview Park at Pennsville. The management of this park has cooperated effectively with this Department and disease incidence has been reduced to an insignificant level. A canker stain disease infection was found in Pohatcong Township in Warren County. This tree was removed within a week after detection.

Increasing difficulty has been encountered in the scouting work because of the appearance of symptoms which do not conform to the pattern which was previously accepted as a definite standard for diagnosis. Members of the Rutgers Department of Plant Pathology and United States Department of Agriculture pathologists have made several trips to this area to attempt to analyze the factors which may be responsible for this complex picture. Recognizing the need for renewed investigations on this subject the Rutgers Department of Plant Pathology sponsored a request for a research fellowship to be established by the Association of Experiment Station Directors of the Northeastern United States. This association is given an allotment of Federal funds for the financing of projects on various entomological and plant pathological problems of immediate concern to the member states. A comprehensive program of investigation was prepared and submitted to the directors for favorable consideration.*

VIRUS CONTROL OF THE EUROPEAN PINE SAWFLY

In the spring of 1951 the Insect Parasite Laboratory of the Canadian Division of Forest Biology reported successful field use of a virus for the control of European pine sawfly on red pines and Scots pines. The virus was discovered in pine plantations in Europe and was introduced in this country in 1949. The office of Forest Insect Control of the United States Department of Agriculture requested the cooperation of the New Jersey Department of Agriculture in the field trial of suspensions of this virus on New Jersey red pine plantations. This experiment was primarily intended (1) to collect information pertaining to the effectiveness of the virus as a control agent for pine sawfly and (2) to ascertain virus spread from the locus of introduction. In 1951, 350 red pine trees in Stephens State Park, Hunterdon County, were sprayed with a virus suspension shortly after the larvae had hatched.

Within 10 days after spraying, many of the larvae displayed the flaccid, inactive condition typical of the symptoms of a virus infection. Very few of the larvae survived this treatment. Some

* In May 1956 the Association of Experiment Station Directors of the Northeastern United States approved a project for canker stain disease investigations to be headquartered at the Rutgers Department of Plant Pathology and to be conducted for three years, financed entirely by Federal funds.

virus-infected larvae were found on unsprayed pines approximately 200 feet from the area which was treated. During 1953, 1954 and 1955, the virulence of the virus declined and the sawfly population resurged. In 1956, the defoliation was considerable and DDT spraying is recommended for 1957.

In 1952, 18 acres of red pine and Scots pine on the Baylor farm, Delawaren, Warren County, were airplane sprayed with the virus. In 1953, 10-acre red pine plots on five properties located in Mercer, Morris, Hunterdon, Sussex and Passaic counties received airplane applications of the virus. In both of these trials, the effectiveness of the virus progressively declined to 1956. Although typically infected larvae were found in 1956, the degree of defoliation was so high and so general throughout the plantations that chemical control will be recommended in 1957.

The entire project will be critically reviewed in the fall of 1956. Similar waning of the effectiveness of early applied virus sprays has been reported from the Province of Ontario.

SURVEY TO DETERMINE THE ANNUAL TREND IN THE SEVERITY OF CANKERWORM DAMAGE

Observations on the annual fluctuation of cankerworm infestations were again made at 49 locations in central and northern New Jersey. This information is useful as a guide to the application of sprays for cankerworm control in specific areas in the State. Where the fluctuations are of a minor nature, the severity of the infestation will indicate the type of precaution to be employed. In a number of locations, particularly in the Princeton area, the annual cankerworm damage is usually severe (this year being an exception).

The cankerworm infestations throughout the State of New Jersey in 1956 were much lighter than usual. This condition has been attributed to the extreme fluctuations in temperature during the early larval feeding period of this insect and the low temperature of the night of May 25.

CANKERWORM INFESTATIONS

Location	Station	County	General Infestation
1	Flatbrookville	Sussex	None
2	Branchville	Sussex	None
3	Colesville	Sussex	None
4	Vernon	Sussex	None
5	Andover	Sussex	None
6	Brainards	Warren	None
7	Blairstown	Warren	Light
8	Hackettstown	Warren	None
9	Columbia	Warren	None
10	Great Meadows	Warren	None
11	West Milford	Passaic	None
12	Ringwood	Passaic	None
13	Newfoundland	Passaic	None
14	Preakness	Passaic	Light
15	Little Falls	Passaic	Light
16	Ridgewood	Bergen	Light
17	Englewood	Bergen	Light
18	Mahwah	Bergen	Light
19	Hackensack	Bergen	Light
20	Myersville	Morris	Light
21	Greystone Park	Morris	Light
22	Lake Swannanoa	Morris	Light
23	Butler	Morris	Light
24	Long Valley	Morris	Light
25	Port Murray	Hunterdon	None
26	Milford	Hunterdon	Light
27	Annandale	Hunterdon	Light
28	Reaville	Hunterdon	Light
29	Stockton	Hunterdon	Light
30	Baptistown	Hunterdon	Light
31	Lamington	Somerset	Moderate
32	Watchung	Somerset	Light
33	Griggstown	Somerset	Light
34	Flagtown	Somerset	Light
35	Neshanic Station	Somerset	Light
36	Westfield	Union	Light
37	Murray Hill	Union	Light
38	Kenilworth	Union	Light
39	Caldwell	Essex	Light
40	Nutley	Essex	Light
41	Livingston	Essex	Light
42	Northfield	Essex	Light
43	Highland Park	Middlesex	Light
44	Iselin	Middlesex	Light
45	Titusville	Mercer	Light
46	Mount Rose	Mercer	Light
47	Princeton Junction	Mercer	Light
48	Yardville	Mercer	Light
49	Etra	Mercer	Light

RECOVERY OF *Neoaplectana glaseri* FROM SOIL INFECTED IN 1931

As reported recently, about 200 healthy Japanese beetle larvae were introduced into the soil of a small frame now located on the White Horse laboratory grounds. This soil originally came from a small experimental plot established by the late Dr. R. W. Glaser, at Yorktown, Salem County. Doctor Glaser had applied a suspension of the parasitic nematode, *Neoaplectana glaseri*, to the surface of this soil in 1931 in the early stages of study of this parasite of the Japanese beetle. On June 13, 1956, a small area of the frame was examined, numerous beetle larvae dead of infection by this nematode were recovered, and the nematodes positively identified by microscopic examination. Thus, for 25 years the parasite has maintained itself under natural outdoor conditions, save for the yearly introduction of the host insect larvae.

AIRPLANE SPRAYING FOR THE CONTROL OF FOREST INSECT DEFOLIATORS

Airplane spraying for the control of forest insect defoliators was begun on May 15 and completed on June 6. DDT was the

ACREAGE SPRAYED

	Acres Sprayed for Sawflies on Pines	Acres Sprayed for Cankerworms
Mercer		
Lawrenceville School	20	.....
Dr. J. R. Harman	18	.....
Hunterdon		
Glen Gardner Sanitorium	130	140
Colonel Foran	30	.....
Carl Steurmer	10	.....
Somerset		
Mr. Consuito	10	.....
United Neighbors	.....	200
Morris		
Charles Bradley	40	.....
Peapack-Gladstone Watershed	70	.....
Jersey City Watershed	40	.....
Sussex		
Mr. Tassanti	25	.....
Total acreage sprayed for:		
pine sawfly control	393	
cankerworm control		340
both insects		733

insecticide used; it was applied at the rate of one gallon per acre, each gallon consisting of one pound DDT, dissolved in oil. Each area was checked within 36 hours after being sprayed to ascertain the effectiveness of this application. Two areas required respraying because of unsatisfactory coverage. This respraying work was done promptly so that no significant further defoliation was caused.

This Department, as heretofore, served as an intermediary between the property owners and a commercial air spray service company of Philadelphia.

SUMMARY OF FIELD RECORDS ON "A GENERAL SURVEY OF PESTS AFFECTING EVERGREENS COMMONLY USED FOR REFORESTATION IN NEW JERSEY" FOR THE PERIOD 1950-1955

European Pine Shoot Moth, Rhyacionia buoliana *Schiff.*

Except for the northern section of the State, this insect is a serious pest of red and Scots pine in New Jersey. It is generally more serious on red pine than on Scots pine and distorts the former species so badly in most of the State that the planting of this species is no longer recommended. Very bushy trees are produced with a high proportion of the branches ending in dead tips caused by the repeated attacks of this pest.

In the six years of the survey, this insect has not caused severe damage at the northernmost locations. However, plantings in Mercer, Somerset and Hunterdon counties have suffered badly. Some plantings in Morris and Warren counties have shown a marked improvement in the past few years, especially following mild winters, which would seem to indicate increased activity of parasites or predators under these conditions.

European Pine Sawfly, Neodiprion sertifer *Geoff.*

This sawfly caused severe defoliation of red pine and Scots pine in many plantings of the State during the period 1940-1947. In 1947 a State-sponsored program of airplane application of DDT to infested plantings was begun and the infestation was brought under control in the sprayed areas. Each year since 1947, some plantings have been sprayed, but there has been a simultaneous reduction in the infestation in unsprayed plantings. Occasionally

a planting is found to be heavily infested, but most infestations appear to be held in check by natural enemies of the pest. Nearly all the areas used as survey locations have been sprayed with DDT for sawfly control at some time in the past. In several, the degree of infestation has increased over a four or five-year period so that a second application was required.

Generally the infestations on red pines have been somewhat more severe than on adjacent Scots pines.

White Pine Weevil, Pissodes strobi *Peck*

This insect deforms enough white pine and Norway spruce in New Jersey to be considered a nuisance, but our surveys over the past six years have not indicated that it affects a large proportion of the trees in any one year. However, the harmful effects of this pest are cumulative so that even when the percentage of trees affected in a plot each year is small, the proportion of crooked trees increases each year.

Most of the heavier infestations have been found in plantings near the northern border of the State. During the past two years, the insect has been less important than in the previous four, with no heavy infestations observed.

Generally, the heavier infestations have been on white pine. However, plantings of Norway spruce at Stokes State Forest contain many trees which have been badly distorted because of repeated attacks by this insect.

Pine Twig Borer, Eucosma gloriola *Heinrich*

This insect has become more generally distributed and more numerous each year since its presence was first observed in the 1950 survey. Because it usually attacks the lateral branches, its effect on the growth of the trees is less striking than that of pests which attack the leader. Leaders are occasionally attacked, however, resulting in the wilting and subsequent browning of six to eight inches of the current year's growth. The heaviest populations have been found in plantings in Hunterdon, Somerset and Middlesex counties. Some degree of infestation was recorded in 1955 in 18 of the 20 white pine plantings observed. This observation, contrasted with 1950, when the insect was reported from only three locations, represents quite a rapid increase in importance.

Eastern Spruce Gall Aphid, Chermes abietis L.

The Eastern spruce gall aphid is found infesting Norway spruce in all parts of the State. It causes some distortion of trees but is seldom sufficiently abundant to kill trees or even large branches. The infestations are peculiar; one tree may be quite heavily infested while an adjacent tree will be untouched.

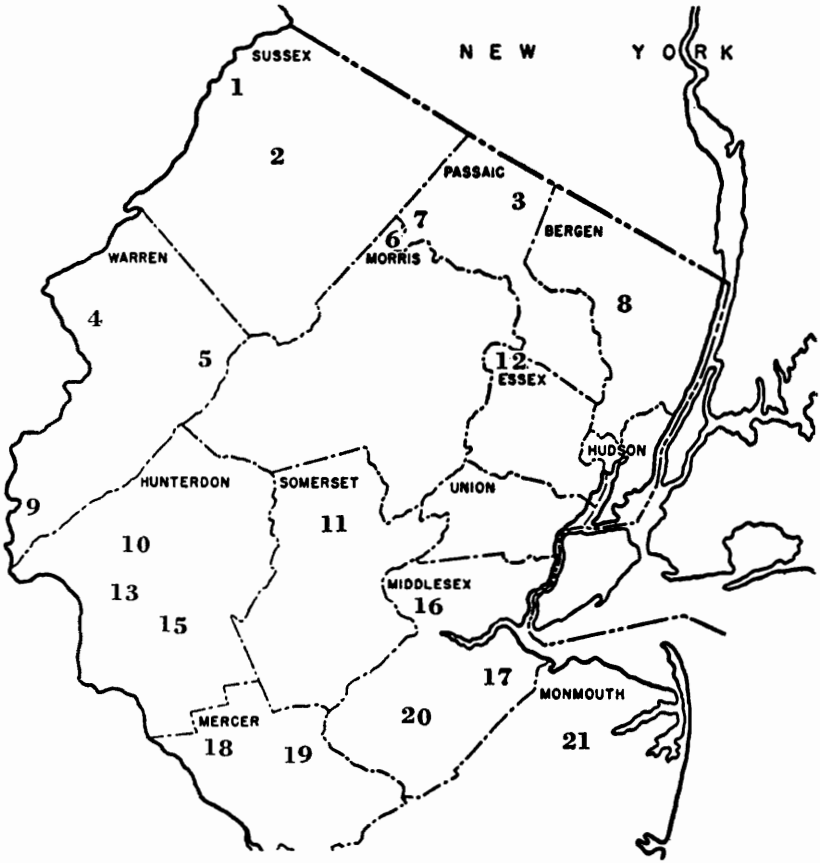
No marked variations from year to year have been observed. The percentage of trees attacked remains quite uniform at a given location. In the 1955 survey, the infestation was found at 16 of the 20 locations, the percentage of trees infested varying from 0.0 to 30.0 per cent.

Evaluation of the Project

Each year more than 1,000,000 seedlings are grown by the State Forest Nursery of the New Jersey Department of Conservation and Economic Development. Additional thousands of seedlings are purchased from other sources by residents of the State and are planted for reforestation purposes. In order to be able to decide what species of trees should be produced and planted in New Jersey, information concerning range and importance of the insects which attack the various species is essential.

This survey is the only organized attempt, presently conducted in the State, to accumulate scientific data concerning this subject. In its absence, opinions concerning the value of the various species would be expressed by foresters, county agents or other individuals who may have visited only a few plantings or examined only a few trees to which attention had been attracted because of an unusually heavy infestation. In such cases, the estimate of the importance of the pest would be exaggerated.

Information of this kind, systematically collected, is also of value in preventing mistakes in planting undesirable species in large numbers. As an example, Scots pine grows well, without serious shoot moth damage, in some sections of Pennsylvania (mostly at higher altitudes). It has also been accepted as a Christmas tree in some markets. Reading reports of the sales, the Christmas tree growers of New Jersey are tempted annually to plant Scots pine for this purpose, but our figures prove that in most sections of New Jersey such planting would be inadvisable because the pine shoot moth would so distort trees that they would be unsalable.



Location of plantings in forest insect survey. Numbers correspond to those used in the first columns of the following tables.

SUMMARY OF ANNUAL OBSERVATIONS OF WHITE PINE WEEVIL ON WHITE PINE 1950 - 1955

(Percentage of Trees Weeviled. 250 Trees Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	1.1	....	2.0	8.0	0.4	3.2
2 Dairy Research Farm	21.5	....	2.8	14.0	2.0	2.4
3 Green Engineering Camp	0.0	....	3.4	6.0	3.2	1.2
4 Bloomfield Girl Scout Camp	0.0	....	2.0	8.0	0.4	0.0
5 Stephens State Park	6.7	20.4	1.6	0.0	0.0	0.0
6 Oak Ridge Reservoir	3.0	2.0	0.4	4.0	0.0	1.2
7 Newark Watershed	3.0	....	2.8	8.0	0.0	3.2
8 Hackensack Watershed	9.3	....	1.2	0.0	0.0	0.0
9 Ingersoll Rand Watershed	0.0	0.0	0.4	0.0	0.0	0.0
10 Voorhees State Park	1.4	....	0.0	4.0	0.4	0.0
11 Robert Cuse	6.5	....	0.4	0.0	0.0	0.4
12 East Orange Watershed	5.5	....	0.0	0.0	0.0	0.0
13 Fred Riehle	0.0	....	0.0	0.0	0.0	0.0
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	0.0	....	0.0	0.0	0.0	0.0
16 Middlesex Sewage Plant	0.0	....	0.0	0.0	0.0	0.0
17 Duhernal Water Co.	....	....	0.0	0.0	0.0	0.0
18 Washington Crossing Park	0.0	....	0.4	0.0	0.0	0.0
19 RCA Laboratories	....	1.9	0.4	4.9	0.0	0.8
20 Jamesburg State Home for Boys	0.0	....	0.0	0.0	0.0	0.0
21 J. M. Ellis	0.0	....	0.0	0.0	0.0	0.4

SUMMARY OF ANNUAL OBSERVATIONS OF WHITE PINE WEEVIL ON NORWAY SPRUCE 1950 - 1955

(Percentage of Trees Weeviled. 250 Trees Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	4.6	16.2	1.6	4.0	0.8	1.6
2 Dairy Research Farm	....	....	0.0	0.0	0.0	0.0
3 Green Engineering Camp	....	....	3.0	12.0	0.0	0.0
4 Bloomfield Girl Scout Camp	1.4	....	3.2	28.0	0.4	0.4
5 Stephens State Park	....	....	0.0	0.0	0.0	0.0
6 Oak Ridge Reservoir	6.0	....	1.6	0.0	0.0	0.0
7 Newark Watershed	8.0	....	1.6	4.0	3.6	0.8
8 Hackensack Watershed	0.0	....	0.4	0.0	0.0	0.0
9 Ingersoll Rand Watershed	2.0	....	0.0	0.0	0.0	0.0
10 Voorhees State Park	2.5	....	0.4	2.0	0.4	0.0
11 Robert Cuse	0.0	....	0.0	0.0	0.0	0.0
12 East Orange Watershed	4.2	....	0.0	0.0	0.0	0.0
13 Fred Riehle	0.0	....	0.4	0.0	0.0	4.4
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	0.0	....	0.0	0.0	0.0	0.0
16 Middlesex Sewage Plant	....	....	0.0	0.0	0.0	0.0
17 Duhernal Water Co.	....	....	....	0.0	0.0	0.0
18 Washington Crossing Park	4.7	....	0.0	0.0	0.0	0.0
19 RCA Laboratories	0.0	....	0.0	0.0	0.0	0.0
20 Jamesburg State Home for Boys	0.0	....	0.0	0.0	0.0	0.0
21 J. M. Ellis	0.0	....	0.0	0.0	0.0	0.0

SUMMARY OF ANNUAL OBSERVATIONS OF PINE TWIG BORER ON WHITE PINE 1950 - 1955

(Percentage of Trees Infested. 250 Trees Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	....	....	0.0	0.0	2.0	4.0
2 Dairy Research Farm	....	....	0.0	8.0	4.4	4.4
3 Green Engineering Camp	....	....	0.8	0.0	3.2	2.0
4 Bloomfield Girl Scout Camp	....	....	0.0	4.0	0.0	0.0
5 Stephens State Park	....	....	0.8	8.0	3.2	6.0
6 Oak Ridge Reservoir	....	....	0.0	0.0	0.0	0.8
7 Newark Watershed	....	....	1.6	4.0	4.0	5.6
8 Hackensack Watershed	....	....	1.6	0.0	0.0	1.6
9 Ingersoll Rand Watershed	light	....	0.4	6.0	0.4	0.8
10 Voorhees State Park	....	....	1.5	10.0	3.2	15.6
11 Robert Cuse	....	....	0.8	16.0	9.6	34.8
12 East Orange Watershed	....	....	2.0	18.0	6.0	6.4
13 Fred Riehle	light	....	1.2	10.0	2.8	7.6
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	....	....	7.2	28.0	19.2	10.4
16 Middlesex Sewage Plant	....	....	7.2	74.0	26.7	31.3
17 Duhernal Water Co.	....	....	0.0	0.0	0.0	0.0
18 Washington Crossing Park	....	....	0.4	6.0	0.8	4.4
19 RCA Laboratories	....	....	2.8	4.3	6.0	6.0
20 Jamesburg State Home for Boys	....	....	0.0	0.0	0.4	2.0
21 J. M. Ellis	....	....	5.6	28.0	10.0	5.2

SUMMARY OF ANNUAL OBSERVATIONS OF EUROPEAN PINE SAWFLY DAMAGE IN RED PINE 1950 - 1955

(Percentage of Needles Removed by Sawfly Feeding)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	....	....	3.0	0.0	0.0	0.5
2 Dairy Research Farm	....	....	32.0	1.0	5.0	58.0
3 Green Engineering Camp	....	....	15.0	12.0	0.0	0.0
4 Bloomfield Girl Scout Camp	light	....	4.0	1.0	5.0	50.0
5 Stephens State Park	heavy	....	6.0	12.0	0.0	40.0
6 Oak Ridge Reservoir	heavy	....	4.0	0.0	0.0	0.0
7 Newark Watershed	light	....	11.0	10.0	22.0	40.0
8 Hackensack Watershed	none	....	2.0	16.0	0.0	0.0
9 Ingersoll Rand Watershed	....	....	0.0	0.0	0.0	0.0
10 Voorhees State Park	....	....	0.0	0.0	0.0	0.0
11 Robert Cuse	....	....	0.0	0.0	0.0	0.0
12 East Orange Watershed	....	....	0.0	0.0	0.0	0.0
13 Fred Riehle	....	....	0.0	0.0	0.0	0.5
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	....	....	0.0	0.0	0.0	0.0
16 Middlesex Sewage Plant	medium	...	60.0	50.0	40.0	40.0
17 Duhernal Water Co.	....	....	5.0	0.0	0.0	0.0
18 Washington Crossing Park	light	....	0.0	0.0	0.0	0.0
19 RCA Laboratories	medium	...	8.0	6.0	4.0	8.0
20 Jamesburg State Home for Boys	....	....	0.0	4.0	0.0	0.0
21 J. M. Ellis	....	....	0.0	0.0	0.0	0.0

SUMMARY OF ANNUAL OBSERVATIONS OF EUROPEAN PINE SAWFLY DAMAGE ON SCOTS PINE

1950 - 1955

(Percentage of Needles Removed by Sawfly Feeding)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	....	....	6.0	2.0	2.0	15.0
2 Dairy Research Farm	....	....	5.0	0.0	1.8	8.0
3 Green Engineering Camp	....	....	7.0	16.0	5.0	2.0
4 Bloomfield Girl Scout Camp	....	....	7.0	8.0	5.0	50.0
5 Stephens State Park	....	....	5.0	0.0	3.0	7.6
6 Oak Ridge Reservoir	....	....	7.0	0.0	0.0	0.0
7 Newark Watershed	....	....	6.0	8.0	9.0	20.0
8 Hackensack Watershed	....	....	2.0	0.0	0.0	0 0
9 Ingersoll Rand Watershed	....	....	0.0	0.0	5.0	0.0
10 Voorhees State Park	....	....	0.0	1.0	0.0	0.0
11 Robert Cuse	....	....	2.0	3.0	0.0	0.0
12 East Orange Watershed	....	....	0.0	0.0	0.0	0.0
13 Fred Riehle	....	....	1.0	0.0	0.0	0.5
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	....	....	0.0	0.0	0.0	0 2
16 Middlesex Sewage Plant	....	....	7.0	8.0	4.0	15.0
17 Duhernal Water Co.	....	....	0.0	2.0	2.5	0.0
18 Washington Crossing Park	....	....	0.0	0.0	0.0	0.0
19 RCA Laboratories	....	....	....	5.0	2.0	2.0
20 Jamesburg State Home for Boys	....	....	....	0.0	0.0	0.0
21 J. M. Ellis	....	....	0.0	2.0	0.0	0.0

SUMMARY OF ANNUAL OBSERVATIONS OF EUROPEAN PINE SHOOT MOTH ON RED PINE

1950 - 1955

(Percentage of Buds Infested. 250 Buds Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	3.6	0.5	0.8	0.4	0.0	0.4
2 Dairy Research Farm	70.8	....	12.8	0.8	3.6	8.4
3 Green Engineering Camp	....	....	0.8	0.0	0.8	1.6
4 Bloomfield Girl Scout Camp	60.0	....	12.0	13.6	5.6	12.0
5 Stephens State Park	8.7	....	0.0	4.0	0.0	2.0
6 Oak Ridge Reservoir	0.0	....	0.4	0.0	0.0	0.4
7 Newark Watershed	1.2	1.6	6.8	0.0	0.0	0.4
8 Hackensack Watershed	0.0	....	3.2	4.0	1.2	0.8
9 Ingersoll Rand Watershed	81.7	45.6	50.8	21.6	8.0	19.6
10 Voorhees State Park	56.2	....	37.6	27.2	13.2	20.8
11 Robert Cuse	40.4	15.5	6.8	11.6	0.4	28.0
12 East Orange Watershed	75.0	18.9	25.6	16.0	5.6	2.4
13 Fred Riehle	75.0	....	28.0	38.8	14.0	34.4
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	84.0	....	44.8	57.6	11.2	20.4
16 Middlesex Sewage Plant	55.0	....	10.8	8.4	2.4	2.0
17 Duhernal Water Co.	75.0	....	0.4	0.0	0.4	1.6
18 Washington Crossing Park	40.5	....	14.4	13.6	12.8	13.6
19 RCA Laboratories	16.0	....	6.8	30.0	10.8	19.6
20 Jamesburg State Home for Boys	....	....	2.0	1.2	1.2	2.4
21 J. M. Ellis	44.7	....	0.4	9.6	3.2	0.4

SUMMARY OF ANNUAL OBSERVATIONS OF EUROPEAN PINE SHOOT MOTH ON SCOTS PINE 1950 - 1955

(Percentage of Buds Infested. 250 Buds Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	....	....	0.0	0.0	0.4	0.8
2 Dairy Research Farm	60.0	....	14.4	0.8	0.8	2.4
3 Green Engineering Camp	....	....	0.0	1.6	0.8	0.0
4 Bloomfield Girl Scout Camp	....	....	4.2	10.4	1.6	4.4
5 Stephens State Park	....	....	3.2	0.4	0.0	0.8
6 Oak Ridge Reservoir	....	....	0.4	0.0	3.6	0.4
7 Newark Watershed	....	....	3.2	0.4	0.0	0.0
8 Hackensack Watershed	....	....	0.0	0.4	1.2	0.0
9 Ingersoll Rand Watershed	62.3	....	10.4	14.0	1.6	9.2
10 Voorhees State Park	....	....	15.6	14.0	6.8	6.4
11 Robert Cuse	....	....	2.4	4.8	0.0	0.4
12 East Orange Watershed	....	....	2.8	4.0	0.8	0.4
13 Fred Riehle	75.0	....	13.8	32.4	1.6	34.0
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	75.0	....	20.4	6.8	1.6	1.2
16 Middlesex Sewage Plant	10.0	....	2.8	5.6	4.8	0.4
17 Duhernal Water Co.	....	....	1.6	0.8	0.4	0.0
18 Washington Crossing Park	....	....	3.0	0.8	6.4	1.2
19 RCA Laboratories	....	....	....	18.8	4.8	5.2
20 Jamesburg State Home for Boys	....	....	....	2.0	0.0	7.2
21 J. M. Ellis	....	....	0.0	4.8	2.0	0.8

SUMMARY OF ANNUAL OBSERVATIONS OF EASTERN SPRUCE GALL APHID ON NORWAY SPRUCE 1950 - 1955

(Percentage of Trees Attacked. 250 Trees Examined)

Location	1950	1951	1952	1953	1954	1955
1 Stokes State Forest	....	....	10.0	10.0	2.0	4.8
2 Dairy Research Farm	....	....	3.0	16.0	3.6	9.2
3 Green Engineering Camp	....	....	5.0	16.0	0.0	4.0
4 Bloomfield Girl Scout Camp	....	....	16.0	20.0	20.0	8.8
5 Stephens State Park	....	....	7.0	4.0	35.0	6.0
6 Oak Ridge Reservoir	....	....	4.0	34.0	11.2	13.6
7 Newark Watershed	....	....	4.0	28.0	34.0	30.0
8 Hackensack Watershed	....	....	12.5	36.0	19.8	19.6
9 Ingersoll Rand Watershed	....	....	0.0	16.0	0.6	15.6
10 Voorhees State Park	....	....	6.6	18.0	13.6	9.6
11 Robert Cuse	....	....	10.0	16.0	9.6	26.0
12 East Orange Watershed	heavy	....	2.0	40.0	1.6	6.8
13 Fred Riehle	light	....	21.0	48.0	28.0	7.2
14 No suitable location available	....	....	....	....	....	....
15 Lechner's Boy Scout Camp	light	....	9.2	8.0	2.0	0.0
16 Middlesex Sewage Plant	....	....	0.0	0.0	0.0	0.0
17 Duhernal Water Co.	....	....	....	0.0	0.0	0.0
18 Washington Crossing Park	....	....	3.0	8.0	10.0	3.2
19 RCA Laboratories	....	....	2.0	8.0	3.6	5.2
20 Jamesburg State Home for Boys	....	....	0.0	0.0	0.0	0.0
21 J. M. Ellis	....	....	0.0	12.0	6.0	6.4

TOMATO SEED CERTIFICATION

The 1955 field inspections were begun July 27 and terminated August 25; four men devoted 30½ man-days to the project. Two additional days were spent in the inspection of fields growing first and second generation seed. The total acreage certified was 3,062, an increase of 323 acres over the 2,739 acres certified in 1954. The variety Brookston, which was admitted to certification for the first time in 1955, accounted for 22 of the certified acres.

Temperature and rainfall data were collected at the Ritter Seed Farms in Bridgeton throughout the season, which was marked by erratic departure from weather norms. The month of June provided reasonable temperatures and precipitation until the last week, when daytime temperatures rose sharply to a maximum of 92 degrees. The real thermal difficulty began early in July when on the 4th and 5th the temperature rose to 101 degrees. During the entire month of July, only 0.25 inches of rainfall were recorded. For an interval of approximately 30 days, with consistently above-normal temperatures, no rain fell at this weather station.

These extreme temperatures inflicted two devastating blows to the tomato crop: (1) the abortion of most of the opening blossoms, and (2) the retardation of normal growth so that the plants presented a departure from the usual varietal characteristics. Throughout the entire inspection period few of the examined fields displayed foliar characteristics typical of the variety they represented. Arrival at a decision regarding the acceptability of a field was difficult. The roguing operations resulted in the rejection of considerable acreage; the official inspection added several hundred acres to this casualty.

Because of the extremely high daytime temperatures many of the ripening fruit displayed a blotchy, red-yellow appearance. August rains caused many of the ripening fruits to crack severely and be covered with mold.

A combination of a very sub-normal setting of fruit, unsatisfactory pigmentation, softness and cracks caused by excessive August rains greatly reduced deliveries to the canneries. The seedsmen estimate that, for the acreage certified, approximately a 25 to 30 per cent seed crop was realized.

Prior to the rains of early August, disease complications were of minor concern. Apparently soil temperatures were too high for

serious inroads by fusarium wilt. The leaf diseases were practically absent. Virus diseases, with the exception of ring spot, were seldom in evidence.

During the early weeks of July several reports of tomato ring spot were recorded by the extension specialist at the New Jersey College of Agriculture. In two instances this disease was reported to have caused a considerable reduction in the crop. This disease was encountered in only a few of the fields inspected for certification and there involved only a few plants. As this disease is believed to be not seed borne, this low incidence did not account for any rejections. Late blight was not detected in any field. Early blight stem cankers became rather prominent in many fields during the last week in August.

Insects played a minor part in the plant protection needs for this season. Russet mite inflicted some damage in several fields. The control of this insect, by plant dipping prior to transplanting, should be investigated. Colorado potato beetles and green horned tomato worms were scarce until the appearance of the rains in early August. As if responding to a signal, the fields in southern Cumberland and western Cape May counties suddenly became heavily infested with these two insects. Because of the hurricane warnings, several of the Cape May commercial airplane dusters refused to take their planes aloft to dust infested fields. In two fields delay in control measures caused severe defoliation. The horned worm and Colorado potato beetle were of lesser importance north of Bridgeton.

The use of herbicides for the control of weeds in corn fields has become a common practice in the area where tomato seed certification inspections are conducted. In 1953 a tomato field adjacent to a corn field which had been sprayed with a herbicide was severely damaged by foliage distortion. This field was rejected because its appearance was unsatisfactory for a suitable inspection. In 1954 a similar circumstance was encountered. The foliage damage to the tomato plants immediately adjacent to the corn field was severe, with a progressive regression of the symptoms as the distance from the corn field increased. This circumstance provided an opportunity to ascertain the damaging consequences of herbicided tomato plants to the crop produced from the resultant seed. Three types of fruit samples were collected from this field: small fruit from damaged plants; large fruit from damaged plants, and fruit from undamaged plants at the remote end of the field.

TEMPERATURE AND PRECIPITATION RECORDS

Ritter Seed Company Farms

Bridgeton, N. J. — 1955

	JUNE			JULY			AUGUST		
	Temperature		Precip.	Temperature		Precip.	Temperature		Precip.
Day	High	Low	in Inches	High	Low	in Inches	High	Low	in Inches
1	74	54	....	88	75	....	97	74	....
2	73	58	....	97	74	....	102	77	.21
3	72	57	....	96	73	....	95	73	....
4	76	55	....	100	72	....	95	75	....
5	89	62	.38	101	76	....	99	80	....
6	81	59	....	99	76	....	102	79	....
7	81	57	....	93	72	....	99	79	1.95
8	64	55	2.07	92	68	....	76	67	.41
9	57	55	.10	93	71	....	81	64	....
10	76	53	....	96	77	....	80	69	.20
11	67	62	1.10	94	75	....	90	72	.48
12	83	66	.02	90	67	....	74	71	1.50
13	75	60	....	87	62	....	80	71	1.65
14	74	58	....	91	63	....	86	75	.29
15	81	55	....	95	70	....	90	76	....
16	87	60	....	98	78	....	85	74	.32
17	94	63	....	100	77	....	85	75	.43
18	90	60	....	99	78	....	83	76	2.20
19	74	67	.38	93	76	....	89	72	....
20	86	65	....	93	72	....	93	72	....
21	91	67	....	96	72	....	95	73	....
22	94	68	....	102	75	....	93	76	.25
23	93	68	.28	101	79	....	84	72	....
24	85	69	....	91	76	.25	80	60	....
25	81	62	.45	91	74	....	81	63	....
26	77	59	....	92	73	....			
27	83	59	....	98	73	....			
28	85	67	....	97	73	....			
29	91	64	....	85	70	....			
30	92	67	....	81	69	....			
31				88	71	....			

These tomatoes were sent to the Department of Vegetable Gardening, New Jersey College of Agriculture, where the seed was immediately extracted and stored for the winter. Plants grown from each of these three seed lots were transplanted into the experimental plots for observation during 1955. Each of these plots consisted of 10 plants. The first picking was made August 10. By October 1 these plants were picked seven times. The yields, as of October 1, were: seed from normal plants, 84 pounds; seed from the small fruited herbicide damaged plants, 103 pounds, and seed from the large fruited herbicide damaged plants, 126 pounds. The increased productivity of the plants which were grown from seed produced by herbicide damaged plants is interesting. Some of the herbicides used, in very dilute dosages, are known to be plant stimulants. Apparently these seeds carried the stimulation and transmitted it to the succeeding crop. The fact remains, however, that in most fields so damaged, the foliage appearance is unsatisfactory for inspection and certification and hence such fields are rejected.

TOMATO SEED CERTIFICATION FOR 1955
Acreage Certified

Seedsman	Rutgers	Marglobe	Pritchard	Improved Garden State	Stokesdale	Valiant	Brookston	Century	Queens	Total
California Packing Corp.	....	....	....	....	....	....	....	....	30	30
Campbell Soup Company	907	....	....	456	....	....	22	....	....	1,385
J. T. O'Brien and Sons	45	18	....	....	....	....	....	....	5	68
Ritter Seed Company	825	....	....	62	69	....	....	17	30	1,003
Francis C. Stokes Company	133	256	....	....	....	29	....	....	....	418
Swedesboro Seed Company	102	38	10	....	....	....	....	....	8	158
Totals	2,012	312	10	518	69	29	22	17	73	3,062

TOMATO SEED CERTIFICATION FOR 1955
Pounds of Seed Certified

Seedsman	Rutgers	Marglobe	Pritchard	Improved Garden State	Stokes-dale	Valiant	Brookston	Century	Queens	Total
California Packing Corp.	....	....	....	....	....	....	....	....	923	923
Campbell Soup Company	5,615	....	....	5,850	....	....	20	....	....	11,485
J. T. O'Brien and Son	1,620	135	....	....	....	....	....	....	42	1,797
Ritter Seed Company	15,991	....	....	614	1,199	....	....	376	715	18,895
Francis C. Stokes Company	1,300	3,280	....	....	....	600	....	....	....	5,180
Swedesboro Seed Company	1,180	2,028	175	....	....	....	....	....	250	3,633
Totals	25,706	5,443	175	6,464	1,199	600	20	376	1,930	41,913

TOMATO SEED CERTIFICATION 1926-1955

Varietal Distribution Certified Tomato Seed Acreages

Year	Bonny Best	J.T.D.	Baltimore	Marglobe	Valiant	Break O'Day	Stokesdale	Rutgers	Pritchard	Garden State	Improved Garden State	Ontario	Total
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	.....	.....	.....	2,961
1937	94	100	.....	1,365	17	.....	67	936	136	.....	.....	.....	2,715
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	.....	.....	5,503
1944	.....	.....	75	1,163	.....	.....	164	5,095	105	155	.....	.....	6,757
1945	.....	.....	.....	647	.....	.....	375	3,294	84	199	.....	.....	4,599
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

Year	Baltimore	Marglobe	Valiant	Stokesdale	Rutgers	Pritchard	Improved Garden State	Ontario	Queens	Century	Brookston	Total
1951	3	190	10	30	3,058	10	173	2	....	....	....	3,476
1952	....	258	31	79	2,658	13	252	4	6	....	....	3,301
1953	....	243	52	30	2,035	15	320	....	38	9	....	2,742
1954	1	232	80	28	1,929	33	348	....	62	26	....	2,739
1955	....	312	29	69	2,012	10	518	....	73	17	22	3,062

POUNDS OF NEW JERSEY CERTIFIED TOMATO SEED VALIDATED FOR EXPORT SHIPMENT

July 1, 1955 to June 30, 1956

1955	Cuba	Ceylon	South Africa	East Africa	Mexico	South Rhodesia	Uruguay	For Export Texas	For Export Florida	Totals
July	156	25	....	....	....	....	....	....	....	181
August	193	88	....	....	....	....	....	....	....	281
September	....	....	....	....	....	....	21	....	....	21
October	20	....	....	....	....	....	....	....	....	20
November	20	....	....	....	915	....	....	....	....	935
December	....	....	400	....	....	....	....	110	800	1,310
1956										
January	....	123	85	....	50	....	20	212	....	490
February	....	35	100	....	....	....	....	590	....	725
March	....	....	....	1	....	20	....	....	....	21
April	....	45	....	....	....	....	....	....	....	45
May	....	....	150	....	....	40	....	....	....	190
June	....	100	40	....	....	....	....	10	....	150
Totals	389	416	775	1	965	60	41	922	800	4,369

POUNDS OF NEW JERSEY VEGETABLE SEEDS EXPORTED FOR WHICH PHYTOSANITARY CERTIFICATES WERE ISSUED

July 1, 1955 to June 30, 1956

1955	Cuba	South Africa	Mexico	For Export Texas	Totals
July	57	.....	.....	.....	57
August	15	.....	.....	.....	15
September	105	.....	.....	.....	105
November	.....	.....	.....	15	15
December	.....	81	.....	100	181
1956					
February	.....	.....	12	.....	12
Totals	177	81	12	115	385

EUROPEAN CORN BORER PARASITIZATION SURVEY

The New Jersey and United States Departments of Agriculture have cooperated in conducting surveys covering the corn growing areas of this State to ascertain the parasitization of corn borer larvae by parasites liberated by U. S. D. A. entomologists. These surveys were begun in 1945 and have continued to this date. The borers were collected in the fall of each of the survey years and submitted to the U. S. D. A. for the rearing of the parasites. A summary of the 1955 survey appears in the following table.

EUROPEAN CORN BORER PARASITE RECOVERIES IN NEW JERSEY FROM COLLECTIONS TAKEN IN THE FALL OF 1955

County	Township	Coll. No.	No. Borers Observed	Borers Parasitized by: *Horogenes punctorius* No.	Per Cent	*Lydella grisescens* No.	Per Cent	*Macrocentrus gifuensis* No.	Per Cent	Totals No.	Per Cent
Sussex	Sandyston	A	46	..	....	..	....	..	....	..	....
Warren	Pahquarry	B	46	..	....	1	2.2	..	....	1	2.2
Sussex	Andover	C	46	..	....	..	....	..	....	..	....
	Sparta	9C	35	..	....	..	....	..	....	..	....
Bergen	Mahwah	D	46	..	....	..	....	2	4.3	2	4.3
Warren	Washington	E	31	..	....	1	3.2	..	....	1	3.2
Somerset	Gladstone	F	56	..	....	..	....	..	....	..	....
Union	Clark	G	46	2	4.3	..	....	..	....	2	4.3
Hunterdon	Kingwood	H	45	..	....	2	4.4	..	....	2	4.4
Somerset	Hillsborough	I	52	..	....	..	....	..	....	..	....
Middlesex	Madison	J	50	..	....	..	....	3	6.0	3	6.0
Mercer	Hamilton	K	46	..	....	5	10.9	..	....	5	10.9
Ocean	Jackson	L	56	..	....	..	....	5	8.9	5	8.9
Camden		M	53	1	1.9	..	....	3	5.7	4	7.5
Burlington		N	53	..	....	..	....	..	....	..	....
Ocean		O	54	..	....	..	....	..	....	..	....
Salem		P	53	..	....	1	1.9	..	....	1	1.9
Gloucester		Q	46	..	....	..	....	..	....	..	....
Burlington	Washington	R	38	..	....	..	....	..	....	..	....
Cumberland		S	56	..	....	..	....	..	....	..	....
Atlantic		T	49	..	....	..	....	..	....	..	....
Cape May		U	49	..	....	2	4.1	..	....	2	4.1
Totals		22	1,052	3	0.3	12	1.1	13	1.2	28	2.7

Total percentage parasitization of collected larvae:

1952 — 23.5
1953 — 11.6
1954 — 5.7
1955 — 2.7

LABORATORY ACTIVITIES

The current year's work falls broadly into the following outline: (1) Response of elms to hydraulic injection of soluble fertilizer materials at various depths, and surface application of dry fertilizer materials; (2) Rapidity of assimilation of surface-applied materials by elms; (3) Continued studies on period of effectiveness of subsurface applied fertilizers in elms; (4) Yearly fluctuations in assimilation of plant nutrients by elms; (5) Variations in nutrient assimilation by the pin oak; (6) Attempts to correct chlorosis of pin oaks by surface application of an iron chelate material.

Response of Elms to Sub-surface and Surface Fertilization

The previous annual report contains a detailed account of the permeation of soil by fertilizer when applied to the surface, and by pressure injection beneath the soil surface. The probable placement of the feeding root system of elms is also indicated. Very briefly reviewed, it was found that surface applications of fertilizers could be expected to reach the feeding zones of tree roots within a comparatively short time. Sub-surface applications under a pressure of 75 pounds per square inch, using soluble materials, showed that the permeation was largely downward from the injection needle opening, and extended horizontally for a distance of 12 to 15 inches. The placement of elm roots was found to be much closer to the surface than is commonly believed. Combining all of the findings, it appeared that the possibility of surface application of fertilizer for shade tree nutrition has been largely neglected. Where sub-surface injection under pressure is thought desirable, a pressure of 75 pounds per square inch was found to be most effective, with the placement of injection holes approximately 30 inches apart, and using the minimum possible depth of injection, or approximately 10 inches below the soil surface.

Beginning about mid-April and continuing through May, these hypotheses were tested by actual field trial on established elms. Fourteen trees were fertilized by broadcasting the dry fertilizer on the turf under the tree canopy. Thirty-seven elms received hydraulic injections of soluble fertilizer materials at depths below the surface ranging from six to 24 inches. The pattern of holes 30 inches apart was preserved as nearly as possible in all work. A 10-10-10 ratio fertilizer was used on all trees, and generally manganese and zinc sulfates were mixed with the fertilizer at the rate of one ounce each per three pounds of base fertilizer. Trees ranging from two inches diameter to five inches diameter all received six pounds of the fertilizer on a 10-10-10 basis. The largest tree fertilized, 20 inches in diameter, received 40 pounds of a 10-10-10 equivalent in soluble form. Adequate control trees for all tests were established initially.

Periodically, leaf samples were collected from all fertilized trees and controls for later analysis. Since these samples will continue through mid-September, the analytical results will not be given until the series is complete.

Visual differences between the appearance of the fertilized trees and the controls appeared within 12 days for trees fertilized in the latter part of May. Observations on the earlier fertilizations were somewhat obscured by the unusually late frost occurring May 17. However, the earlier applications took somewhat longer to produce visible effects than did the later ones. Hydraulic injections at depths of six inches and 10 inches produced the most rapid response, but within approximately three weeks the differences between the various procedures became too small to discern. In conclusion, from visual observation there did not seem to be much choice between surface application and any of the sub-surface injections. All produced a very favorable response in this series of tests.

In connection with the surface application to turf, a rate of 0.0477 pounds 10-10-10 per square root did not cause turf injury. The highest rate of application, 0.127 pounds 10-10-10 per square foot, caused the complete destruction of turf but did not cause any visible injury to the tree. The rate of 0.048 pounds per square foot corresponds to approximately one ton per acre. It is not suggested that this rate be exceeded, and probably a rate of 1,000 pounds per acre would be safer and produce a reasonable response in the tree.

Rapidity of Transport to Leaves

The section above shows that a visually determinable response to fertilization may occur within 12 days following application. In order to pursue this matter further one elm tree, established for eight years and approximately five inches in diameter, was treated with a water solution of lithium nitrate.

Lithium is a metallic element closely resembling sodium and potassium and, like them, is readily assimilated by plants. Because lithium is not commonly found in plants and because it can be readily detected by spectroscopic means, it can be conveniently used as a tracer element. In studying the rapidity of transport of materials from the soil to the foliage, it is much more satisfactory to work with some material not normally in the plant than to attempt to trace rather small changes in concentration of some element already present in appreciable concentrations.

Three hundred and forty grams of lithium nitrate were dissolved in five gallons of water and applied by sprinkling under the canopy of the tree. Periodically thereafter leaf samples were taken from the tree and examined for the presence of lithium by a spectroscopic method. On the fifth day following treatment the first detection was made, and the concentration rose rapidly until the 13th day. By the 30th day the amount of lithium found was somewhat less than when at its height.

This finding seems to substantiate the other data indicating that the feeding roots of the elm lie closer to the soil surface than is commonly thought. It is not probable that material applied to the soil surface would be found in the leaves within five days if this were not true.

Effective Duration of Fertilization in Elms

When the experimental plantings of small elms were made on the Van Nest Game Preserve at Mercerville, one of the purposes was to determine the length of time elapsing before initially placed fertilizing materials would make significant contributions to the nourishment of the trees. The plantings comprise a total of 400 trees, arranged in 54 groups. Half of the trees were planted in early April of 1952, and the remaining half in April, 1953. The trees were planted in holes dug approximately two feet in diameter and 18 inches deep. About two-thirds of the fertilizer used per planting was placed in the bottom of each hole and thoroughly mixed with the soil. The remaining third of the fertilizer was applied as an annular ring in the periphery of the hole as soon as the replaced soil covered the roots of the tree.

In general, there are four ways in which a fertilizer so placed can lose its effectiveness: leaching losses may remove the soluble portion; it may be used or assimilated in plant growth; some portion may become fixed in the soil by interaction with the soil or some incompatible constituent of the fertilizer; the plant may lose contact with the fertilizer through an extension of the root system to such a degree that relatively little absorption occurs from the original root zone.

As detected by leaf analysis over the course of these experiments, when compared to control plantings, the following general observations can be made:

1. Added nitrogen had a very significant effect in the first year, exerted a definite influence in the second year, but by the end of the third year no difference between the fertilized groups and the controls was evident.

2. Added phosphorus had no influence at any time. We have repeatedly found that elms require no phosphorus fertilization under New Jersey conditions, and make no use of the material applied.

3. The effect of added potassium was pronounced in the first year, moderate in the second year, slight in the third year and apparently entirely lost by the fourth year's close.

4. Calcium and magnesium assimilation was not significantly altered by the presence or absence of the NPK fertilizer.

5. Added zinc had a great influence in the first and second year, a slight increase in foliage zinc was evident in the treated groups in the third year, while in the fourth year no influence could be shown.

6. Added manganese had an enormous influence in the first and second year, was prominent in the third year, and some difference could still be found in the fourth year.

The results appear quite logical, the nitrogen disappearing first, as it is readily lost by leaching. The influence of the potassium lasts a little longer, but not so long as the relatively immobilized zinc and manganese.

Another factor that was abundantly clear was that while an NPK fertilizer exerts a suppressing influence on the assimilation of zinc and manganese, the result is of no practical importance under the conditions of these experiments. Phosphate fixation of the two micronutrients does not prevent an absorption of more than adequate amounts by elms. However, as we have pointed out in prior reports a soil not adequately supplied with zinc and manganese will have absorption depressed by the action of an NPK fertilizer, possibly to the danger point.

From the above observations the inference may be drawn that to maintain a reasonably continuous response, trees should be fertilized every third year.

Normal Yearly Fluctuations Encountered in the Elm

The accumulation of data on the year-to-year changes in nutritional status of individual elms as revealed by foliar analysis was begun in 1948 and has been continued through the 1955 growing season. Such data are absolutely necessary in the interpretation of field work in shade tree nutrition. We feel that a further extension of this program from this point on will not yield anything new, or the returns be commensurate with the labor involved.

Our observations over an eight-year period on undisturbed mature elms, mostly located in Branch Brook Park may be briefly summarized as follows: Nitrogen assimilation changes commonly by from 0.25 per cent to 0.75 per cent in individual trees. All trees in a locale do not respond uniformly, a degree of individuality being evident. However, 1953 was an unusual year in which all of the trees under study had an unusually high nitrogen content in the leaves at mid-September. Phosphorus leaf content does not fluctuate so much as nitrogen; 1953 showed only the usual phosphorus assimilation, while 1955 showed a much lower than average assimilation. Potassium assimilation varies quite markedly with the years, and most trees seem to follow the same pattern. The years 1951 and 1955 were bad for potassium assimilation. We believe that the leaf content of this element is quite markedly affected by the rainfall pattern occurring prior to sampling and this is not always known with certainty.

The calcium and magnesium contents of leaves fluctuate quite considerably from year to year, but usually remain within the limits we have previously established as being satisfactory. However, trees quite low in either element tend to remain deficient, while the trees with unusually high content of either element also remain high. It is becoming quite generally recognized in studies of soil fertility that conditions even in small areas may be drastically different with respect to the native ability of the soil to supply nutrients to growing plants. Any given plot is likely to be far from uniform over its entire area.

The changes in status of the micronutrients zinc and manganese occur in broader cycles, covering three or four years. Again, no general yearly pattern is discernible. But trees very low in either element remain that way, while those very high in either element seem to maintain a high status year after year. We still do not believe that nearly enough attention is being paid these two

micronutrients by the practicing arborists. Unthrifty trees are very commonly deficient in either or both zinc and manganese. The incorporation of the sulphates of these elements at the rate of one-third ounce each per pound of base fertilizer will overcome this common deficiency, and we have never noted any injury even when using considerably higher rates of application.

Variations in Nutrient Assimilation of the Pin Oak

With the increasing use of the pin oak in street, park and private plantings, the problems peculiar to this tree are likely to become increasingly important. Our particular concern at this time is with the problem of chlorosis. This chlorosis is associated with an inability of the tree to absorb sufficient iron, or with some internal chemistry of the plant whereby the absorbed iron is rendered biologically inactive. Many investigators of this problem have come to the conclusion that foliar analysis for iron content is not alone an adequate tool for investigating this problem. In our experience, it is not uncommon to find decidedly chlorotic pin oaks with leaf iron content higher than in perfectly normal specimens. Many claims have been made in literature for methods of separation of the contained leaf iron into various fractions, some particular fraction being presumed to represent the "metabolically active" iron content. A number of these proposals have been tried in this laboratory, but we are not satisfied with any so far investigated.

The City of Bordentown has many hundreds of pin oaks planted within the limits, and maintains two small nurseries for the propagation of these trees. We have never observed an abnormal specimen at this location. Therefore, to obtain information on the elemental leaf content of healthy pin oaks, we obtained a number of samples from these trees in mid-September and made the required analysis. The following table presents the findings.

ELEMENTAL LEAF ANALYSIS, MATURE PIN OAKS, BORDENTOWN, ALL HEALTHY. REPORTED ON OVEN-DRY BASIS. FALL, 1955

Element	Leaf Content
Nitrogen	1.38 per cent
Phosphorus	0.12 per cent
Potassium	0.72 per cent
Calcium	0.74 per cent
Magnesium	0.24 per cent
Iron	356 p.p.m.
Manganese	890 p.p.m.
Zinc	106 p.p.m.

In contrast to the data of Table 1, samples of pin oak foliage from White Horse were found to range from 1,800 to 2,500 p. p. m. of manganese. In one area at Washington Crossing State Park where chlorosis has been a perennial problem, the manganese content ranged from 2,140 to 4,145 p. p. m. In contrast to this, trees in the Phillipsburg area (also subject to severe chlorosis) showed a manganese range of from 206 p. p. m. to 841 p. p. m. However, we have frequently noted magnesium content in this area to be around 0.12 per cent, or about half of the normal content. Magnesium is the central atom in the chlorophyll molecule, and obviously any lack of the element can seriously affect the amount of chlorophyll a plant can form. It has long been known that excessive manganese interferes with the utilization of iron in plants, and manifests itself as an iron deficiency symptom. Therefore, attention should be paid to these elements, as well as iron, when attempting a diagnosis by means of foliar analysis. During the year we collect a sizeable body of information on the variations in mineral content in leaves of pin oak, and on the changes that occur during the development of growth. This information will be valuable in assessing the problems sure to arise in the future as this tree is planted in increasing numbers.

Correction of Chlorosis in Pin Oaks

The investigations on the correction of chlorosis in pin oaks by use of the newly developed iron chelate materials were continued. In the previous annual report we gave the dosages of several materials which can be applied as foliar sprays for partial rectification of chlorosis, and their phytotoxic reactions. Observation on the effect of foliar sprays of these materials was continued through the 1955 growing season and the conclusion drawn that no acceptable concentration of any of the materials would completely rectify chlorosis by a single spray application. One application does cause a very decided improvement. Our tests indicated that the material known as "Chel 330 Fe" (Geigy) was the most promising of those tested. A dosage of 7.5 grams per gallon (one ounce per four gallons) of water appeared safe for hydraulic application. A sticker and wetting agent should be used to obtain a better distribution and response.

Beginning in the spring of 1956, we decided to re-examine the possibilities of soil applications of the chelated iron materials. In the past we have not had too much success with this method, primarily because an effective dosage frequently caused severe foliage burning. This year the compound "Chel 330 Fe" was dissolved in water and applied under the canopy of the tree by means of a sprinkling can. The effects of localized concentration and consequent injury were thus avoided and a uniform application assured. Further, the material was applied at intervals instead of in one massive treatment. Preliminary trials in April showed that a rate of application of 480 grams per 10 gallons of water per 100 square yards area did not cause any appreciable turf injury, but that double this rate of application caused conspicuous temporary injury to turf. Applications of the material to a badly chlorotic oak in Phillipsburg were begun April 6, and continued at approximately monthly intervals. The dosage was 240 grams of "Chel 330 Fe" in 10 gallons, to an area of approximately 100 square yards. This is about one-fourth the dosage capable of causing burning to the tree. The same type of treatment was used on a chlorotic oak in Washington Crossing State Park. Some degree of improvement was noted in each case, but not a complete recovery. The results look promising, and in view of the apparent freedom from damage due to overdosage and simplicity of application this approach merits a continued development.

Development of Analytical Methods

An analytical method for the determination of zinc in plant tissue and related materials was developed and used in all of the present year's work. The procedure is far simpler and more reliable than the established AOAC method. The zinc, in approximately 1 N hydrochloric acid solution, is quantitatively retained by passage through an anionic exchange resin in the chloride form. The potentially interfering ions pass through this column. The zinc is eluted using 0.01 N hydrochloric acid. The hydrogen ion concentration of this eluate is made to the appropriate value and buffered. The color reagent "Zincon" is then used to develop the color with zinc and the resultant color determined by the use of an electrophotometer. A complete description of the procedure was prepared in mimeograph form and distributed to individuals working on this type of problem.

BUREAU OF SEED CERTIFICATION

On April 1, 1956, the Department raised the seed certification service of this Division to Bureau status. It is expected that there will be even greater expansion of this work.

GRAIN SEED CERTIFICATION

Introduction

Seed certification today, as never before, is vital to New Jersey agriculture as our investment per crop acre rises to new heights. The potential return or yield of any crop is first restricted by the genetic make-up of the seed. Many factors such as weather, cultural practices, soil fertility, diseases and insects affect the financial return of a crop, but good quality seed is basic to successful production.

Approximately 800,000 acres in New Jersey are annually planted to harvest crops. Of this total, 481,000 acres are planted at some time during the season with a cereal. Cereals are highly important to New Jersey's agriculture whether they are used as soil builders or cash crops. It is, therefore, basically sound to establish and maintain a supply of high quality cereal seed.

Field Corn

The acreage entered for certification has steadily increased year after year, although the demand for New Jersey certified hybrid seed corn cannot be supplied. In 1954, a total of 558.5 acres was entered for certification; 660 acres were entered in 1955, an increase of 101.5 acres. The anticipated acreage for 1956 will be approximately 850 acres, almost double the amount entered in 1951. Three hundred to 350 acres of the 1956 seed crop will be planted in fields where irrigation will be available if weather conditions make that necessary. Increased acreage plus irrigation will give more assurance to New Jersey farmers that sufficient seed will be available every year.

The acreage of New Jersey No. 7 was reduced from 285 acres to 258 acres and New Jersey No. 8 seed production increased from 168 acres to 301 acres. Due to the difficulty the producers experienced in growing Connecticut No. 554, the acreage was reduced

from 47.5 to 16.5 acres. Three new hybrids were produced for certification this year: 46 acres of New Jersey No. 9, 4.5 acres of New Jersey No. 10 and 34 acres of Ohio W-64. The first two of the new hybrids show considerable promise for production in New Jersey. However, Ohio W-64 must be discontinued because this hybrid can be produced more reasonably in the West, making it economically unprofitable for New Jersey growers. New Jersey No. 9 (Wf9 x Hy2) x (J47 x C103) is very similar to New Jersey No. 8 (Wf9 x Hy2) x (C102 x C103), but has increased stalk rot resistance and slightly higher yield. New Jersey No. 10 (Hy2 x Oh45) x (J47 x 38-11) is a completely new hybrid which will out-yield all New Jersey hybrids.

It appears that New Jersey No. 10 hybrid seed should be produced with irrigation because the kernel length tends to be short and dry weather will cause a crop failure. When produced with irrigation the kernels are very uniform in length which means the seed can be more easily planted. At the present time the male sterile seed of New Jersey No. 10 is not available; this will be a limiting factor in seed production. The new hybrids introduced this year are full season with a maturity of approximately 120 days. There is a need in New Jersey for a short and medium season hybrid and it is hoped that hybrids of this maturity range will be developed in the near future.

The rejections during field inspections were very small. Only one six-acre field had to be rejected for improper planting and detasseling. However, due to adverse weather conditions, 48 acres were rejected during bin inspection for mold, sprouted kernels and poor germination. Minimum acreage was rejected during the detasseling period because of growers' desire to produce good seed and the help of the inspectors in alerting the growers of the detasseling requirements. The male sterile parent of New Jersey No. 7 performed as expected. Pollen was shed in approximately one-quarter of 1 per cent of the sterile seed. The male sterile seed of New Jersey No. 8 and New Jersey No. 9 (Wf9 x Hy2) shed pollen under certain conditions. Although the pollen in this single cross was usually shed after the silk was completely pollinated, the tendency does indicate a weakness in the sterility factor. In many fields the certifying agency required the male sterile seed to be checked several times for shedding tassels.

1955 SEED CORN ACREAGE

Variety	Acres Entered	Acres Rejected	Acres Passed
New Jersey No. 7	258	36	222
New Jersey No. 8	301	.....	301
New Jersey No. 9	46	.....	46
New Jersey No. 10	4.5	.....	4.5
Connecticut No. 554	16.5	.....	16.5
Ohio W-64	34	18	16
J47 x B42	3	.....	3
Totals	663.0	54	609.0

Because of the dry weather, some fields progressed very unevenly. This extended the detasseling period over several weeks and increased labor costs. The uneven growth also caused a scarcity of sufficient pollen during the prolonged pollinating period and poor pollination resulted. The extreme heat and dry weather during July was more than the seed corn fields could stand. Some of the fields did not reach shoulder height, the leaves rolled and turned brown, resulting in the poorest yield of seed on record.

The average yield of all hybrids in 1955 was 14.4 bushels of flats per acre. This ranged from 6.0 bushels per acre of New Jersey No. 7 to 38.9 bushels per acre of New Jersey No. 10. Only one small field of New Jersey No. 7 was irrigated while virtually all fields of New Jersey No. 10 were irrigated. When these figures were presented at the annual seed growers' school, they caused considerable interest in irrigation. A much higher percentage of the seed fields will be irrigated in 1956.

The average yield of New Jersey No. 7 in a normal year will be about 28 bushels of flats per acre. This year some fields yielded as low as 1.2 bushels per acre on unirrigated land. Yields of 28 bushels per acre were recorded on irrigated fields. In 1956, another dry year, the average yield was 16.9 bushels per acre.

The average yield of New Jersey No. 8 in a normal year is approximately 31 bushels of flats per acre. This year the average yield was 14 bushels, with the poorest field having four bushels and the best field 27 bushels of flats per acre. As in previous years, New Jersey No. 8 responded more favorably to dry weather.

NEW JERSEY HYBRID SEED CORN CLEANING AND GRADING RECORDS FROM 1949 TO 1955

NEW JERSEY # 7

	1955	1954	1953	1952	1951	1950	1949
Number of growers' records used	7	12	17	13	11	12	12
Acreage involved	201	270	388	333	282	303	237
Rough corn received at mill (bushels)	2,374	....	15,973	12,779	10,763	12,632	7,651
Bushels rough corn (ear parent) harvested per acre	11.8	....	41.2	38.4	38.2	41.6	28
Total bushels of flat grades certified	1,211	4,568	11,895	9,247	8,096	8,996	4,548
Average bushels of flats per acre	6	16.9	30.6	27.8	28.6	29.6	19.2
Average percentage of flat grades harvested per acre	53.1	....	74.3	72.3	74.9	71	59
Large flats (bushels)	254	661	815	624	598	1,180	506
(per cent)	20.9	14.4	6.9	6.8	7	13	11
Medium flats (bushels)	806	3,276	8,494	4,166	3,717	4,517	1,979
(per cent)	66.6	71.6	71.4	45	46	50	44
Narrow flats (bushels)	151	631	2,586	4,457	3,781	3,299	2,009
(per cent)	12.5	14	21.7	48.2	47	37	45

NEW JERSEY HYBRID SEED CORN CLEANING AND GRADING RECORDS FROM 1953 TO 1955

	N. J. #8			N. J. #9	N. J. #10	Connecticut #554	
	1955	1954	1953	1955	1955	1955	1954
Number of growers' records used	12	9	5	4	1	1	3
Acreage involved	301	178	53	46	3.5	16.5	34
Rough corn received at mill (bushels)	6,608	....	2,871	845	171	203	....
Bushels rough corn (ear parent) harvested per acre	21.9	....	54.2	18.4	48.8	12.3	....
Total bushels of flat grades certified	4,239	5,108	2,303	529	136	136	507
Average bushels of flats per acre	14.1	28.7	43.5	11.5	38.9	8.3	14.9
Average percentage of flat grades harvested per acre	64.1	....	80.3	62.5	79.5	67	....
Large flats (bushels)	421	852	163	24	24	10	122
(per cent)	9.9	16.7	7.1	4.5	17.7	7.3	24.1
Medium flats (bushels)	2,820	3,483	1,555	287	102	85	338
(per cent)	66.5	68.2	67.5	54.3	75	62.5	66.7
Narrow flats (bushels)	998	773	585	218	10	41	47
(per cent)	23.6	15.1	25.4	41.2	7.3	30.2	9.2

Many seed lots, it was noted during bin inspection, possessed a high percentage of insect-damaged kernels which had to be removed and hand-picked. All growers are required to hand-pick their seed rigidly for purity. The certifying agency carefully supervises this operation for compliance with quality regulations. It was noted that fields which were harvested early had much less insect-damaged seed than those that were allowed to stand several weeks or months after maturity. The certifying agency is attempting in the future to have seed fields planted, harvested and dried early in order to improve seed quality.

A total of 6,642 bushels of flat grades of the 1955 crop was sealed. A carry-over of 1,056 bushels of flat grades from the 1954 crop had satisfactory germination and seed quality. There were 602 bushels of round grades certified. In all, 8,309 bushels were blue-tagged and sealed.

1955 SEALING OF SEED CORN

Hybrid	New Crop (1955) Flat	New Crop (1955) Round	Carry-over (1954) Flat	Carry-over (1954) Round	Bushels Sealed
New Jersey No. 7	1,332	310	144	8	1,794
New Jersey No. 8	4,233	269	751	....	5,253
New Jersey No. 9	529	18	....	....	547
New Jersey No. 10	141	5	....	....	146
Connecticut No. 554	136	....	74	1	211
Ohio No. W-64	271	....	....	....	271
New Jersey No. 4	....	....	87	....	87
Totals	6,642	602	1,056	9	8,309

In producing seed corn it is necessary to dry the crop to 14 per cent moisture as rapidly as possible without injuring the seed quality. In the past it has been the responsibility of the individual producer to dry his own corn and to deliver it to the mill in Allentown in a satisfactory condition. In order to do the work properly, the grower must make an investment of $2,500 to $3,000 in drying equipment which is used only one or two months a year. Growers who have not made the investment have lost thousands of dollars in spoiled corn and have lost markets because of inadequate supply. The problem has made the enlistment of new seed corn growers extremely difficult. The New Jersey Field Crop Improvement Association has instituted a building program at Allentown which will include a seed dryer. With the completion of this building, a

grower will deliver his ear corn from the field directly to the mill where it will be dried, hand-picked and shelled. The advantages to this are many: the growers will not have large sums of money invested in equipment which is used only a short period of each year; the inspection service will be able to keep a more vigilant watch on the crop, and the enlistment of new growers should be less difficult.

At the end of each year progress can be seen in improving quality and supply. One of the main purposes of the seed certification program is to supply New Jersey farmers with adequate supplies of the best seed available.

Sweet Corn

The second year of hybrid sweet corn seed production in New Jersey under the supervision of the certifying agency again proved the advantage of such a program. However, the extreme drought during August and then the excessive rains in late September and October made sweet corn production very poor.

Three fields in Burlington County were planted with New Jersey No. 106 or New Jersey No. 101 approximately the 20th of June. By planting late in the season, isolation can be achieved. By that time, the commercial table stock of the sweet corn crop has been harvested and there is no foreign pollen in the area. One field was rejected for poor appearance. The other fields were carried through to completion although seed yield was very poor.

Dr. Robert S. Snell, the plant breeder at the New Jersey Agricultural Experiment Station who is in charge of the sweet corn work, favors experimenting with seed production in isolated areas of the State where early planting can be made. He found in tests during the past summer that the commercial crops produced from New Jersey grown seed were more uniform, had less inbreds and less impurities than crops produced from western seed.

Seed production of hybrid sweet corn will never be a large industry in New Jersey. It could, however, be very beneficial in improving the quality of all sweet corn of the State.

Barley

In 1955, 433 acres of Wong barley were entered for certification compared with 694 acres in 1954. However, due to a marked de-

crease in rejections the total acreage passed was actually two more than the previous year. Due to increased farmer demands for certified barley and improved marketing procedures, a total of 4,075 more bushels was sealed than the previous year. The above figures, however, do not give the true picture of the seed used by New Jersey farmers. A total of 17,958 bushels of barley was sealed in 1954 and approximately 4,000 bushels of this seed were not sold. This means that in 1954 only 14,000 bushels of seed were actually used. In 1955 a total of 22,033 bushels was certified and marketed, an increase of approximately 8,000 bushels of seed used.

Field inspections were started in May for the detection of loose smut. As in previous years, not a single smut head was found in the registered fields, which are one generation from hot water-treated seed. The fine control of this serious disease is the result of the hot water treatment given the seed through the cooperation of the Francis C. Stokes Company of Vincentown and the New Jersey Field Crop Improvement Association. Certified fields, which are two generations from hot water treated seed, contained 25 to 30 smutted plants per acre which is considered excellent control.

Two registered barley fields, totaling 19 acres, were rejected for mixtures of wheat and the presence of scald. It was possible to rogue one 16-acre field to meet the certification requirements, but not the registered class.

A total sealing of 2,050 bushels of registered seed for 1955 is considered sufficient for planting stock.

Final field inspections were started in South Jersey about June 1. During the latter part of the growing season, New Jersey experienced a severe drought which was expected to affect the crop. Apparently, however, the crop was mature enough that yield and test weight were not affected.

A total of 61 acres was rejected in the field, principally for the mixture of other grain, poor appearance and inseparable weed seed. By having a limited generation seed production program of barley, very few rejections are necessary for varietal impurity. The percentage of rejections for 1955 is 13 per cent compared with 44 per cent in 1954 and 11 per cent in 1953. As in previous years, onion and wild garlic were the most troublesome weeds in the seed fields. The mixture of other crops is the result of volunteer plants and careless cleaning of the planting and harvesting equipment.

One lot, totaling 1,000 bushels of certified Wong barley, was processed at the Seaboard Seed Company in Philadelphia. The certifying agency made an inspection of their processing plant and gave approval for the processing of certified seed. The cleaning process was satisfactory and the tagging and the sealing were accomplished by State inspectors during the month of August.

This year's seed was of excellent quality, test weights averaging 50 pounds per bushel. Seed yields averaged 55 bushels of clean seed per acre.

1955 BARLEY SEED CERTIFICATION

Variety	Acres Entered	Acres Rejected Field	Acres Rejected Bin	Acres Passed	Bushels Sealed
Wong					
Foundation	2	....	....	2	125
Registered	56	19	....	37	2,050
Certified	375	42	18	315	17,606
Carry-over	....	....	....	....	2,252
Totals	433	61	18	354	22,033

Wheat

A total of 745 acres of wheat was entered for certification; this being a decrease of 323 acres from the previous year.

During the past few years a notable increase of loose smut has been observed in the Thorne and Seneca varieties. A field inspection was made this year at the time the wheat plant was in flower so that accurate counts could be made of the loose smut infection. The Pennoll variety, which is relatively resistant to this disease, averaged approximately 100 smutted plants per acre. In the Seneca variety loose smut infection was as severe as 7,000 plants per acre and in the Thorne variety even greater. As our present regulations allow only 2,000 infected plants per acre, it was necessary to reject 36 per cent of the Seneca acreage and 40 per cent of the Thorne acreage. The remaining 64 per cent of the Seneca variety was the progeny of recently hot water-treated seed and contained only 50 to 100 loose smut plants per acre. As a result of

these observations, a foundation seed program was initiated for Seneca wheat and each year a small quantity of seed will be hot water treated to control this disease.

The Foundation Seed Committee decided to discontinue the Thorne variety from certification for several reasons. The newer variety, Seneca, which is a sister strain of Thorne, gives a slightly higher yield and test weight, and because the two varieties are so similar in appearance, there exists a possibility of varietal mixtures.

During the month of June, field inspections were completed with 124 acres being rejected. The field rejections were caused mainly by the presence of loose smut, noxious weeds or varietal mixtures. The 124 acres rejected represent 17 per cent of the entered acreage as compared with 28 per cent rejected the previous year. The harvest weather was almost perfect and seed was harvested with low moisture content. In some cases the moisture content was so low that excessive cracking of the seed was caused by the harvesting operation. It is difficult to remove cracked kernels or inert material completely in a cleaning process; therefore, in several cases some certified seed was placed on the market with maximum inert tolerances.

Final bin inspections, prior to cleaning, revealed in several cases heavy infestation by mealworms. In one case the infestation was so heavy that a rejection of 23 acres was necessary. In other lots where light infestations were noted the seed was cleaned and treated with an insecticide immediately, thus preventing any further damage.

Because of the decreased acreage planted, the rejections due to loose smut, and an improved marketing program, the supply of certified seed was far below the demand.

In 1954, a total of 21,026 bushels was certified and marketed while this year only 17,324 bushels were available. The New Jersey Agricultural Experiment Station, the New Jersey Field Crop Improvement Association and the New Jersey Department of Agriculture have made plans to increase the wheat acreage for the coming season.

1955 WHEAT SEED CERTIFICATION

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field	Bin		
Pennoll					
Certified	474	26	23	425	12,187
Seneca					
Certified	219	78	....	141	3,758.5
Registered	2	....	....	2	36
Thorne					
Certified	50	20	....	30	1,342.5
Totals	745	124	23	598	17,324.0

Winter Oats

A total of 106 acres of LeConte oats was entered for certification. This is a 79 acre increase over the previous year. While the quantity certified was short of supplying the demand, a satisfactory step in meeting the market was achieved. All the problems of obtaining genetically pure seed of LeConte oats have not been solved, but progress is being made.

Dr. Steve Lund, small grain breeder of the New Jersey Agricultural Experiment Station, accompanied the seed inspectors in making spot checks of the LeConte fields. Wide variations in variety seemed prevalent and it was deemed advisable to row-select LeConte for purity. This program was initiated by Doctor Lund and it is hoped that within a year or so small quantities of pure seed will be released to our certified seed program.

An attempt this past year to produce registered oats failed because the genetic purity could not be obtained. All the certified fields were rogued several times for the removal of off-type plants to meet the certification requirements.

LeConte oats survived the winter in excellent condition and were harvested with low moisture content and high germination.

It was noted that fields not harvested at the proper time lost considerable yield by shattering. The average yield of LeConte oats was 46 bushels of clean seed per acre. However, one field of 25 acres averaged better than 74 bushels of clean seed per acre.

The popularity of LeConte with dairymen, as well as poultrymen, continues and within two years a market for 10,000 bushels of certified winter oats should exist annually.

1955 WINTER OAT PROGRAM

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field	Bin		
LeConte					
Certified	105	....	....	105	4,917
Registered	1	1	....	....	....
Totals	106	1	....	105	4,917

Spring Oats

A total of 18 acres of spring oats was entered for certification by two growers. The complete acreage passed the field inspection but special cleaning for the removal of undesirable seeds was required for the seed to be certified. One lot had a mixture of wheat which was found during the bin inspection. This impurity undoubtedly was introduced during the harvest operation. However, by using special screens and operating the seed cleaning equipment at a slow speed, a satisfactory separation was made.

The certified spring oats, although small in quantity, possessed a high percentage of pure seed and a minimum amount of foreign material. Germinations were high and after seed clipping and cleaning an average test weight of 35½ pounds was achieved.

Thousands of bushels of spring oats are annually imported into New Jersey from the mid-western States. It is anticipated that in the future a spring oat will be developed by the New Jersey Agricultural Experiment Station that will produce acceptable seed and crops under New Jersey's climatic conditions. Until this time arrives, New Jersey's certified seed oat spring production will remain small.

1955 SPRING OAT PROGRAM

Variety	Acres Entered	Acres Passed		Bushels Sealed
		Field	Bin	
Clinton	18	18	18	372

Soybeans

The total acreage of soybeans entered for certification was 536. This is 278 acres less than the previous year. This reduction in acreage, plus a very high rate of rejection in the bin, made a short supply of certified seed. Of the 536 acres entered, only 26 acres were rejected during field inspection, principally because of varietal mixture. This indicates the effectiveness of the foundation seed program, which carefully selects the seed sources to maintain genetic purity and disease-free seed.

This year five varieties, Blackhawk, Chief, Hawkeye, Lincoln and Clark, were recognized for certification. For the past several seasons the Hawkeye soybean has been the most popular variety. However, it appears the trend is now away from Hawkeye and toward Lincoln and its sister strains. The change is due principally to the fact that Hawkeye has a tendency to shatter when left in the field after maturity. Farmers who must wait until the ground is frozen in order to harvest lose several bushels of seed per acre due to the shattering. After three years of testing by the New Jersey Agricultural Experiment Station, the Clark variety is being recommended for certification. This variety closely resembles Lincoln; as a matter of fact, the seed of the two varieties is almost identical in appearance. The characteristics used in identifying the variety are the color of the blossom, the Lincoln having a white blossom and the Clark having a purple blossom. This requires that field inspections must be made during the blossoming period. Despite the similarity in appearance between the two varieties there is a decided difference in yield and growth. Clark has a growing season approximately seven days longer than Lincoln which can be a disadvantage to farmers wishing to plant fall crops after the soybeans. The first pods of the Clark variety set a little high off the ground and the plant remains erect at harvest time. This makes combining easier and less seed is lost. It appears that a major portion of the seed acreage for this coming season will be planted to the Clark variety because of its ability to produce high yields. Last year the Hawkeye variety averaged 11 bushels of seed per acre, the Lincoln, 15 bushels per acre and the Clark, 31 bushels per acre.

This year's growing season, being one of the poorest in many years, with a prolonged drought and then heavy rains late in the season, caused considerable damage to soybeans. The Blackhawk variety was rejected 100 per cent; the Hawkeye, approximately 50 per cent; and the Lincoln variety, 63 per cent. The Chief and Clark varieties had no rejections. The high rejection of the Blackhawk, Hawkeye and Lincoln was due to small cracks in the seed coat, almost invisible to the eye, but permitting surface organisms to enter and damage the seed. These cracks did not appear on Clark and Chief, probably because these varieties matured later and were able to take advantage of the August rains.

The Blackhawk variety, which is early maturing, has not proved to be a satisfactory soybean for production in New Jersey due to its short growing season. The yield was below the other varieties as was the quality. Poor germination has also been prevalent in this variety. In most cases the Hawkeye can be substituted for the Blackhawk with far better results. The Foundation Seed Committee has recommended dropping Blackhawk soybeans from the recommended certification list for 1956.

The corn and soybean crops being small, the two processing operations were carried on simultaneously and all soybeans were cleaned and treated by the end of February. A total of 4,000 bushels of soybeans was sealed, which is approximately 5,564 bushels less than last year.

1955 SOYBEAN SEED PROGRAM

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field	Bin		
Blackhawk	79	12	67	....	....
Chief	75	....	....	75	771
Carry-over	....	....	....	....	27
Hawkeye	219	14	103	102	1,731
Lincoln	144	....	91	53	1,321.5
Clark	19	....	....	19	150
Totals	536	26	261	249	4,000.5

Summary

The seed certification program, in terms of quantity, produced less in 1955 than in any year since 1951. The main reason for the reduction of seed was weather. A greater acreage was planted in corn and soybeans than the previous year but many fields were stricken so severely by the drought that no attempt was made to harvest. Cereals, other than corn or soybeans, showed strength and increased production. The underproduction of both corn and soybeans made a difficult marketing year for these crops. The seed was distributed on a pro rata method based on the previous year's orders.

Insufficient quantities of seed continue to be the main stumbling block in the path of success.

GRAIN CERTIFICATION SEALINGS FROM 1941 TO 1955

Year	Total Sealed (bushels)	Corn (bushels)	Oats (bushels)	Wheat (bushels)	Barley (bushels)	Soybeans (bushels)	Rye (bushels)
1955	56,955	8,309	5,289	17,324	22,033	4,000	....
1954	65,941	15,356	1,650	21,026	17,958	9,564	387
1953	61,182	19,794	2,115	20,172	10,438	8,663	....
1952	67,777	14,593	1,836	25,159	15,265	10,924	....
1951	56,404	13,315	2,745	19,224	13,828	7,292	....
1950	43,819	13,583	2,904	9,961	9,999	7,372	....
1949	41,935	14,288	2,145	8,666	12,366	4,470	....
1948	27,278	12,993	1,941	3,996	5,784	2,564	....
1947	23,937	9,173	1,612	5,188	6,994	970	....
1946	27,217	9,371	2,853	6,915	7,098	980	....
1945	21,226	12,408	2,306	2,424	3,653	435	....
1944*	25,253	9,534	5,316	4,068	5,473	874	....
1943*	25,074	6,461	1,408	3,917	3,023	13,263	....
1942*	24,571	9,744	1,576	4,882	2,052	5,900	....
1941	19,159	9,125	1,750	3,706	....	3,764	....

* Total sealed, represents only the principal crops.

POTATOES

A total of six seed potato growers, two less than the previous year, entered a total of 101 acres for seed certification, compared with 120.5 acres in 1954. Only 6 per cent of the total acreage was rejected during the inspection as being unfit for seed use. This is one of the lowest returns of rejections in the history of this program. The fact that the acreage is diminishing and only the better growers are surviving is, undoubtedly, an important factor in the rate of rejection. The growers of late crop seed potatoes are fully aware of the importance of clean planting stock. Very few seedsmen continue to produce their own stock. Practically all the growers annually purchase foundation stock or tuber unit stock from out-of-state sources. This procedure has raised the quality of New Jersey seed and dropped disease counts to almost zero.

In 1955, 95 per cent of the New Jersey seed potatoes was planted from foundation Maine seed, 3 per cent from Minnesota stock and 2 per cent continuation of New Jersey certified seed. The varieties of seed produced were mainly the popular table stock varieties of New Jersey. One new variety, Pungo, continues to show promise in improving eating quality and yields under New Jersey conditions.

Several seed fields had uneven stands as a result of the unfavorable weather conditions during the planting and early growing season. Soil conditions were extremely dry and temperatures very high during the beginning of the season, resulting in some poor growth. Those farmers with irrigation systems were able to progress their crops more evenly and naturally. Later in the growing season sufficient rainfall was experienced. In a few isolated areas too much rain caused drowning of the plants.

Insects were satisfactorily controlled in all the fields and very little disease spread was experienced. The chewing and sucking insects that feed upon potatoes were at a minimum, thus causing the seed grower less work and expense in controlling insects.

Harvest commenced in the middle of October with acceptable yields. Tubers were not set heavily on the individual vines, but because of the light set made more growth. The entire seed crop in New Jersey was dug before frost damage and was harvested without excessive amount of mud and dirt, thus allowing tubers to condition and strengthen much more rapidly.

The crop was marketed without problems. More seed could undoubtedly be sold if it were available. There is not enough seed produced to support a marketing cooperative or interest the commercial seed or fertilizer dealers.

The Department again made available to all seed growers in New Jersey the Florida testing program. This is carried on with the cooperation of the New York Certified Seed Growers' Cooperative. A representative sample is composed of 155 tubers selected by the grower during harvest, uniformally throughout his field. Samples are collected by State inspectors and sent to Ithaca for chemical treatment which breaks the dormant period of the seed. The seed is then sent to Florida for planting and at the end of six to eight weeks a field reading can be made to determine the virus disease content of the sample. All certified seed fields in New Jersey are not required to be tested in Florida. However, growers are urged to cooperate for their own protection. Certified seed grown in New Jersey that has disputable disease symptoms must be tested in Florida before certification is granted. This additional step in the certification program is bound to improve the quality of our seed.

With the cooperation of the New Jersey Agricultural Experiment Station, two new approaches to seed potato production are

being examined. First, there is a possibility of producing seed potatoes in central New Jersey by the following method. If commercial table stock producers would isolate a portion of their crop and plant this isolated area to foundation or tuber unit stock, maintain a spray program for the control of insects and disease and harvest late in the season, they then could sell their grade "A" or large tubers to the table stock market and hold their grade "B" or small size tubers for planting the following spring. This seed program should be supplemented by field inspection and Florida testing to ascertain disease increase. This method has been tried by several potato farmers in Mercer and Middlesex counties with success. For this type of seed production, the farmer must provide good storage facilities throughout the winter months.

The second possibility of increasing seed potato production in New Jersey could be in cooperation with Seabrook Farms or any frozen French fry industry. The best potatoes for French frying are those with high specific gravity and they are generally produced in cool growing seasons. By producing potatoes late in the season under certification regulations, the tubers could be graded, the large sizes sent to the French fryer and the small sizes used for seed.

Both of these methods could materially reduce cost of planting potatoes in New Jersey and increase return to the farmer. These methods are being tested again this year and will again be appraised next season.

The certification agency is primarily interested in providing the farmer with good seed. Both of these outlined methods appear practical to the farmer and certification agency.

PRODUCTION OF CERTIFIED WHITE POTATO SEED IN NEW JERSEY

Variety	1955 Passed (acres)	1955 Production (bushels)	1954 Passed (acres)	1954 Production (bushels)
Cobbler	8.00	1,288	10.50	2,856
Katahdin	59.00	14,170	73.00	15,525
Chippewa	21.00	4,494	18.50	4,458
Kennebec	4.00	840	4.00	1,080
Pungo	3.00	624	....	....
Totals	95.00	21,416	106.00	23,919

ACREAGE FAILING AND PASSING CERTIFICATION

	Acres	Per Cent
Rejected or withdrawn at first inspection	....	....
Rejected or withdrawn at second inspection	....	....
Rejected at third inspection	6	6
Rejected resulting from Florida testing	....	....
Rejected or withdrawn at fourth inspection	....	....
Passing fourth inspection (certified)	95	94

VARIETAL DISTRIBUTION OF REJECTIONS AND WITHDRAWALS

Variety	Acres Entered	Acres Rejected and Withdrawn by Inspections: First	Second	Third	Florida	Acres Certified
Katahdin	65.00	....	....	6.00	....	59.00
Cobbler	8.00	....	....	....	....	8.00
Chippewa	21.00	....	....	....	....	21.00
Kennebec	4.00	....	....	....	....	4.00
Pungo	3.00	....	....	....	....	3.00
Totals	101.00	....	....	6.00	....	95.00

INSPECTION AND CERTIFICATION WORK OF NEW JERSEY LATE CROP WHITE POTATO SEED IN 1955

Seed Source	100-lb. Bags	Per Cent
Maine	1,440	95
New Jersey	30	2
Minnesota	45	3
Totals	1,515	100

WHITE POTATO SEED CERTIFICATION INDUSTRY OF NEW JERSEY

Year	Growers	Acres Entered	Percentage Rejection	Varietal Distribution	
1950	21	268.50	5.80	Katahdin	167.33
				Chippewa	46.67
				Cobbler	39.25
				Red Skin	9.00
				Sequoia	2.50
				Red Bliss Triumph	.25
				Kennebec	3.50
1951	14	154.00	12.30	Katahdin	92.40
				Chippewa	22.10
				Cobbler	15.00
				Kennebec	13.50
				Essex	2.00
				Netta Gem	1.00
				Sequoia	1.00
				Red Skin	7.00
1952	10	131.00	30.60	Katahdin	78.50
				Kennebec	17.50
				Red Skin	.50
				Chippewa	14.50
				Idaho	1.50
				Cobbler	7.50
				Red Bliss Triumph	10.00
				Ontario	1.00
1953	12	127.50	18.00	Katahdin	73.00
				Chippewa	21.50
				Cobbler	19.00
				Kennebec	11.50
				Red Skin	1.00
				Pungo	.25
				Cherokee	.25
				Netta Gem	1.00
1954	8	120.50	14.50	Katahdin	81.00
				Chippewa	18.50
				Cobbler	15.00
				Kennebec	6.00
1955	6	101.00	6.00	Cobbler	8.00
				Katahdin	65.00
				Chippewa	21.00
				Kennebec	4.00
				Pungo	3.00

Official Proceedings of the Forty-First Annual State Agricultural Convention

The forty-first annual State Agricultural Convention was held in the Assembly Chamber of the State Capitol in Trenton on Tuesday, January 24, 1956. The meeting was called to order at 10:00 a. m. by Henry D. Rapp, Jr., president of the State Board of Agriculture. The invocation was offered by the Rev. Edward C. Dunbar of the Flemington Baptist Church.

The roll of delegates was called by William C. Lynn, assistant secretary of agriculture, as follows:

Delegates of the State Agricultural Convention

From County Boards of Agriculture

Name	Address	Term	County
Louis J. Sanguinetti	Minotola	2 years	Atlantic
Joseph English, Mays Landing, alternate for *Joseph Quarella	Landisville	1 year	Atlantic
John Troast	Westwood	2 years	Bergen
Irving Christensen	Woodridge	1 year	Bergen
Clement B. Lewis	Riverton	2 years	Burlington
Barclay H. Allen	Mount Holly	1 year	Burlington
Peter Angel	Berlin	2 years	Camden
Samuel C. DeCou	Merchantville	1 year	Camden
Vincent DiLuzio	Tuckahoe	2 years	Cape May
Leland Stanford	Green Creek	1 year	Cape May
Thomas D'Agostino	Bridgeton	2 years	Cumberland
Caesar Simoni	Vineland	1 year	Cumberland
William A. Crane, West Caldwell, alternate for *George F. Meyer	Caldwell	2 years	Essex
Henry Becker	Roseland	1 year	Essex
John Rainey	Woodstown	2 years	Gloucester
Harry Lentz	Thorofare	1 year	Gloucester
Henry Marselle	Weehawken	3 years	Hudson
Albert Schenone	Union City	1 year	Hudson
Harold B. Everitt	Flemington	2 years	Hunterdon
Charles Burd	Pittstown	1 year	Hunterdon
Herbert Hurley	Princeton	2 years	Mercer
Edgar L. Cubberley	Trenton	1 year	Mercer
George R. Parker, Jr.	Plainsboro	2 years	Middlesex
Alex Dembeck, Jr.	New Brunswick	1 year	Middlesex
Howard P. Story, Sr.	Freehold	2 years	Monmouth

*Absent

Name	Address	Term	County
Walter W. Lott	Freehold	1 year	Monmouth
Forrest F. Hildebrant	Hackettstown	2 years	Morris
G. Mills Bockoven	Basking Ridge	1 year	Morris
George Emley	New Egypt	2 years	Ocean
Raymond Schumacher	Lakewood	1 year	Ocean
Edward Anthony	Clifton	2 years	Passaic
Ernest Hausamann	Paterson	1 year	Passaic
Thomas J. Curley	Salem	2 years	Salem
Norman E. Harris, Jr.	Salem	1 year	Salem
Gilbert I. Runyon	Skillman	2 years	Somerset
David W. Amerman	Neshanic	1 year	Somerset
Walter W. Yetter	Newton	2 years	Sussex
John D. Cowling, Newton, alternate for *Mrs. William Boning	Newton	1 year	Sussex
Charles H. Brewer	Rahway	2 years	Union
William A. Happel	Scotch Plains	1 year	Union
Harry Frome, Blairstown, alternate for *Fred W. Fuchs, Jr.	Belvidere	2 years	Warren
Alfred Baylor	Columbia	1 year	Warren

From Pomona Granges

Name	Address	Term	County
Martin Decker	Hammonton	1 year	Atlantic
John Clauss	Fairlawn	1 year	Bergen and Passaic
C. Harold Joyce	Medford	1 year	Burlington
Reuben H. Dobbs	Marlton	1 year	Camden
Allan McClain	Green Creek	2 years	Cape May
Harold Farrand	Parsippany	1 year	Central District
Robert P. Wheaton	Bridgeton	2 years	Cumberland
Richard A. Ridgeway	Mullica Hill	1 year	Gloucester
James L. Ramsey	White House Station	2 years	Hunterdon
Charles M. Ewart	Yardville	1 year	Mercer
J. V. S. Dumont	Somerville	2 years	Middlesex and Somerset
Howard Clayton	Freehold	1 year	Monmouth
Frank C. Pettit	Woodstown	1 year	Salem
John Cowan	Newton	1 year	Sussex
Alexander Loskot	Washington	1 year	Warren

*Absent

From Other Organizations

American Cranberry Growers' Association—Edward V. Lipman, New Brunswick, 1 year; Vinton N. Thompson, Vincentown, alternate for *William Haines, Chatsworth, 1 year.

Jersey Chick Association—James C. Weisel, Rosemont, alternate for *John Krokes, Milway, 1 year; George R. Parker, Jr., Plainsboro, 1 year.

New Jersey Association of Nurserymen—Albert Flemer, Springfield, 1 year; George Runge, Elizabeth, 1 year.

New Jersey State Florists' Association—George H. Masson, Jr., Yardville, 1 year; August Bosenberg, New Brunswick, 1 year.

New Jersey State Grange—Ellsworth Oberly, Stewartsville, 1 year; Franklin C. Nixon, Vincentown, 1 year.

New Jersey State Horticultural Society—Lester Collins, Moorestown, 2 years; Clarence H. Steelman, Sr., Princeton, 1 year.

New Jersey State Poultry Association—Herbert O. Wegner, Newfield, 1 year; A. C. Schlott, Frenchtown, 1 year.

United Milk Producers of New Jersey—Benjamin Hart, Pennington, 1 year; Thomas L. Lawrence, Hamburg, 1 year.

Blueberry Cooperative Association — W. A. Jarvis, Pemberton, 1 year.

Cooperative Growers' Association, Inc. — J. Cresswell Stuart, Beverly, 1 year.

E. B. Voorhees Agriculture Society — I. D. Phillips, Somerville, 1 year.

New Jersey Holstein Friesian Cooperative Association, Inc. — Charles Kirby, Harrisonville, 1 year.

New Jersey Agricultural Experiment Station — Howard M. Sheppard, Cedarville, 1 year.

New Jersey Beekeepers Association — Rudolph Patzig, Bedminster, 1 year.

New Jersey College of Agriculture — William H. Martin, New Brunswick, 1 year.

New Jersey Field Crop Improvement Cooperative Association — George Stevens, Asbury Park, 1 year.

New Jersey Guernsey Breeders' Association — Roy C. Patrick, Salem, 1 year.

New Jersey State Potato Association — Harold Britton, Plainsboro, 1 year.

New Jersey Aberdeen - Angus Breeders' Association — Robert P. Lawrence, Holmdel, 1 year.

The Cooperative Marketing Associations in New Jersey, Inc. — William J. Lauderdale, Lambertville, 1 year.

*Absent

APPOINTMENT OF COMMITTEES

At the Delegates' Dinner held on the evening preceding the Convention, the following committees were appointed by President Rapp:

NOMINATING COMMITTEE FOR MEMBERS OF THE STATE BOARD OF AGRICULTURE

Louis J. Sanguinetti, Chairman....Atlantic County Board of Agriculture
J. Cresswell Stuart .....Cooperative Growers Association, Inc.
Howard M. Sheppard .....New Jersey Agricultural Experiment Station
A. C. Schlott .....New Jersey State Poultry Association
David W. Amerman .....Somerset County Board of Agriculture
Raymond Schumacher .....Ocean County Board of Agriculture
C. Harold Joyce .....Burlington County Pomona Grange
Harold D. Everitt .....Hunterdon County Board of Agriculture
George R. Parker, Jr. .....Jersey Chick Association
Irving K. Christensen .....Bergen County Board of Agriculture
William J. Lauderdale .....Cooperative Marketing Associations in New Jersey
Charles M. Ewart .....Mercer County Pomona Grange
Clarence H. Steelman .....New Jersey State Horticultural Society
Walter W. Lott .....Monmouth County Board of Agriculture
G. Mills Bockoven ..... Morris County Board of Agriculture

COMMITTEE ON RESOLUTIONS

Martin Decker, Chairman .....Atlantic County Pomona Grange
Warren W. Yetter .....Sussex County Board of Agriculture
Thomas J. Curley .....Salem County Board of Agriculture
Alexander Loskot .....Warren County Pomona Grange
Harold Britton .....New Jersey State Potato Association
Benjamin Hart .....United Milk Producers of New Jersey
Albert Flemer .....New Jersey Association of Nurserymen
John Rainey .....Gloucester County Board of Agriculture

COMMITTEE ON CREDENTIALS

Barclay H. Allen, Chairman.....Burlington County Board of Agriculture
George Stevens .....New Jersey Field Crop Improvement Co-operative Association
William A. Crane, alternate for
*George F. Meyer .....Essex County Board of Agriculture
George H. Masson, Jr. ..... New Jersey State Florists Association

COMMITTEE TO WAIT ON GOVERNOR

Harry Frome, alternate for
*Fred W. Fuchs, Jr., Chairman..Warren County Board of Agriculture
Franklin C. Nixon, alternate for
*Clarence M. Alles .....New Jersey State Grange
Dr. William H. Martin .....New Jersey College of Agriculture
Allan McClain .....Cape May County Pomona Grange

*Absent

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 Herbert O. Wegner of Newfield and Insley H. Roy of Andover in nomination for membership on the State Board of Agriculture to succeed Henry D. Rapp, Jr. of Farmingdale and Lloyd B. Wescott of Clinton, whose terms expire June 30, 1956. Upon motion made and duly seconded it was voted that the nominations be closed and Messrs. Wegner and Roy were unanimously selected for recommendation to the Governor for a four-year period beginning July 1, 1956.

CITATION

A citation for distinguished service to agriculture was awarded to Willard H. Allen of Princeton.

The citation, read by Robert B. Meyner, governor of New Jersey, was as follows:

"Yours has been a distinguished career of illustrious public service, dedicated to the welfare of your chosen field, your adopted State and its citizens.

As Secretary of Agriculture for nearly two decades, you have served with distinction under six governors. Each has commended your allegiance, capacity and performance.

We in agriculture have been most fortunate to count you our accomplished leader and emissary of good will. You have borne great responsibility and given of yourself beyond measure. Throughout the State, legions of farmers regard you with esteem and respect, as well as with affection.

Your zeal for betterment of your fellowmen in all walks of life has been demonstrated repeatedly. You have never counted the hours, nor the miles, as you unselfishly responded to every call with a warm greeting, wise counsel, and a word of encouragement.

No scroll can encompass the achievements nor adequately pay homage to the career and sterling character of so true a gentleman. Your ever gracious manner and abounding generosity, your patience and indulgence, have endeared you to a wide circle of friends and admirers.

Speaking for all members of the State Board of Agriculture who have served with you since 1937, and in turn for the farmers of the State, as well as your colleagues on the staff of the Department of Agriculture, we express our sincere gratitude and award to you this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

New Jersey hails you!"

REPORT OF COMMITTEE ON RESOLUTIONS

The following resolutions, presented by Martin Decker and reported favorably by the committee, were adopted by the State Agricultural Convention:

WHEREAS, the State of New Jersey now faces the prospect of reinfestation by the Gypsy Moth (*Porthetria dispar* L.) which threatens serious economic losses to forest, shade tree and orchard resources; and

WHEREAS, this emergency has occurred because of inadequate financing of the Federal program for the prevention of spread of this insect; and

WHEREAS, treatment with insecticides of at least 1.5 million acres of infested forest to the east and north of this State must be accomplished during the spring months of 1956, to prevent dispersion of this insect throughout New Jersey and throughout the whole of the Appalachian hardwood forest to the south and west; and

WHEREAS, the earlier investment of more than 2 million dollars of State funds in control measures is wasted if adequate control measures are not carried out during the coming spring months; now therefore, be it

Resolved that this Convention call to the immediate attention of the Secretary of Agriculture of the United States, Honorable Ezra Taft Benson, this critical situation, asking his cooperation in requesting that the Congress appropriate the necessary funds to finance an interstate program for the control of this pest.

WHEREAS, negotiations are pending with the United States Department of Agriculture concerning proposals for Federal Milk Marketing regulations in Northern New Jersey; and

WHEREAS, the dairy interests of New Jersey would be best served by a separate Federal Marketing Order with payments to producers based on a handler pool; and

WHEREAS, the majority of New Jersey dairymen are opposed to being included in any comprehensive order embracing the Northern New Jersey area with that of the New York Marketing area regulated at present under Federal Order 27; now therefore, be it

Resolved that the delegates assembled at the 1956 Agricultural Convention endorse the proposal for a separate milk marketing order for the New Jersey area, and that a copy of this resolution be forwarded to the Special Governor's Milk Committee.

WHEREAS, proposals are under consideration in most New Jersey rural communities calling for designating and reserving certain areas and facilities for use in industrial or housing developments or for public use; and

WHEREAS such classification and zoning of land is considered desirable and has become standard practice in New Jersey communities faced with rapid expansion and difficult adjustments; now therefore, be it

Resolved, that the delegates to the 1956 Agricultural Convention urge both farm and non-farm rural residents to take a more active interest in local zoning activities.

WHEREAS, local real estate taxes are increasing at a very rapid rate on farm land and buildings in nearly every municipality in New Jersey; now therefore, be it

Resolved, that the State Board of Agriculture use every effort and means at its disposal to establish a fair and equitable tax base on all farm property.

WHEREAS, His Excellency, Governor Robert B. Meyner, has demonstrated at all times a sincere interest in New Jersey agriculture; and

WHEREAS, Governor Meyner and his Administration have extended generous support to the State agencies concerned with the agricultural program; and

WHEREAS, the interest of Governor Meyner in the betterment of rural health and welfare has been manifest during his Administration, particularly in matters concerning adjustments made necessary by the rapid expansion of rural communities; now therefore, be it

Resolved, that the delegates of the 1956 Agricultural Convention assembled in Trenton express to Governor Meyner their appreciation for his continued interest and consideration.

WHEREAS, the administration of the State Department of Agriculture has been placed temporarily under the direction of Assistant Secretary William C. Lynn, during the absence of Secretary Willard H. Allen because of his impaired health; and

WHEREAS, during the current emergency Mr. Lynn has rendered outstanding service in maintaining the high standards of performance established by Secretary Allen; and

WHEREAS, the operation and well-being of every farm enterprise in New Jersey have been directly affected in some manner and enhanced in some degree by the continued excellent service of the State Department of Agriculture; now therefore, be it

Resolved, that the delegates assembled at the 1956 Agricultural Convention in session in Trenton express their commendation of Assistant Secretary Lynn and the members of the staff of the State Department of Agriculture and recommend that a copy of this resolution be forwarded to the State Board of Agriculture and to His Excellency, Governor Meyner.

WHEREAS, *New Jersey Farm and Garden* has completed 25 years of continuous publication as a successful State farm magazine of high rank; and

WHEREAS, New Jersey agricultural interests and thousands of farmers are proud to acknowledge the high standards of farm journalism represented by *New Jersey Farm and Garden;* and

WHEREAS, *New Jersey Farm and Garden* has rendered many years of continuous service to New Jersey farmers, farm agencies and organizations and allied trade concerns; now therefore, be it

Resolved, that the delegates of the 1956 Agricultural Convention assembled in session in Trenton extend congratulations to William A. Haffert, publisher; William A. Haffert, Jr., editor, and to the staff of the *New Jersey Farm and Garden* on the occasion of this 25th anniversary.

WHEREAS, God in His infinite wisdom has seen fit to call from our midst Charles D. Barton, former president of the State Board of Agriculture; Martin Schubkegel, prominent poultry leader; William J. O'Dowd, prominent dairyman; Robert J. Sim, naturalist and historian; now therefore, be it

Resolved, that we pause here for a moment of respectful silence to their memory.

WHEREAS, New Jersey pioneered in the field of farm electrification through the formation of the Joint Committee on Rural Electrification in 1928 under the sponsorship of the State Department of Agriculture; and

WHEREAS, the program of extending electrical service to farms and rural areas in New Jersey has been continued since 1946 by the Farm Electrification Council of New Jersey; and

WHEREAS, New Jersey now leads the states of the nation with the highest percentage of farms, 99.6 per cent, having electrical service; now therefore, be it

Resolved, that the delegates of the 1956 Agricultural Convention assembled in session in Trenton commend the Farm Electrification Council of New Jersey and its member utility companies for the excellent service to agriculture and urge that research and demonstrations be continued to promote more efficient use of electric power and appliance on New Jersey farms.