

# NEW JERSEY

## *Seed Certification* Handbook



Certifying Agency  
New Jersey Department  
of Agriculture  
Trenton, N. J.

Sponsoring Agency  
New Jersey Field Crop  
Improvement Cooperative  
Association  
Kingston, N. J.

Research and Testing  
New Jersey Agricultural  
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## INTRODUCTION

Small grain seed certification was started in a modest way in 1924 cooperatively by the New Jersey Department of Agriculture and the Department of Agronomy of the New Jersey Agricultural Experiment Station. Prof. George W. Musgrave was in charge. In 1924 a total of 6.5 acres of grain was certified for two growers in Mercer County. The following year, 18.5 acres were certified for five growers in the same county.

Professor Musgrave resigned in 1926 and was succeeded by Dr. Howard B. Sprague, who began an extensive series of selection experiments to improve the quality of field corn and other grains. The aim of the experiments was to develop a supply of seed of approved varieties of grains adapted to New Jersey's soil and climate. Only grains of approved strains or varieties could be entered in the cooperative certification work, which covered truthfulness to variety and freedom from seed-borne diseases.

The first request for state certification came in 1927 from David H. Rising of Easton, Pennsylvania, who cooperated with 15 farmers in the vicinity of Alpha in the growing of seed corn. Certification could not be granted until a varietal test established his varieties as acceptable. Such a test was made in 1928-29 by Doctor Sprague on the farm of Frank Frace in Alpha.

However, no corn was certified until 1932, when 650 bushels were certified for nine growers. The next year, 103 acres were certified for 10 growers. Since then, the certification of corn and other grains has expanded slowly but substantially.

The official certifying organization consists of the Division of Plant Industry of the State Department of Agriculture, the New Jersey Agricultural Experiment Station and the New Jersey Field Crop Improvement Cooperative Association. The purpose of certification is to make available to the farmer varieties so grown and distributed as to insure genetic identity and purity. Only varieties approved by the New Jersey Agricultural Experiment Station are eligible for certification.

Three classes of seed are recognized: Foundation seed shall be the source of all certified seed classes either directly or through registered seed; registered seed shall be the progeny of foundation seed or registered seed and so handled and approved by the certifying agency; certified seed shall be the progeny of foundation, registered or certified seed that has been so handled and approved by the certifying agency.



Properly Detasseled Hybrid Seed Corn Field

Analyses and germination tests are made by the Agricultural Experiment Station in accordance with rules of the Association of Official Seed Analysts. Tagging and sealing are required and, during inspection, fields must not contain more than established tolerances of injurious seed-borne diseases. Various other certification standards and tolerances are in effect. Through the years, certified seed has gained the confidence of New Jersey farmers because of its superior quality and unsurpassed performance.

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## NEW JERSEY FIELD CROP IMPROVEMENT COOPERATIVE ASSOCIATION

On July 1, 1952, the New Jersey Field Crop Improvement Cooperative Association will have served New Jersey farmers for 17 years. In 1935, 10 New Jersey growers of certified field crop seeds met with representatives of the State College of Agriculture and the State Department of Agriculture to consider organizing an association to represent the interests of all cooperating seed growers. At this first meeting, plans were made for the organization of the New Jersey Field Crop Improvement Cooperative Association, which was to become prominent in sponsoring field crop seed certification in the state.

In March 1937, during the term of the first president, Alfred E. Snook of Trenton, papers of incorporation for the new association were filed with the Secretary of State. These were signed by the late Boyd Fullerton of Franklin Park; J. A. Blakeslee of Newton and Dr. Howard B. Sprague, former head of the Department of Farm Crops, New Jersey College of Agriculture, New Brunswick, New Jersey.

Since that time, the Association's activities have taken on a much wider scope. Along with the continued growth in field crop acreage certified in the state, there has been a widening interest in processing, distribution, advertising and the general educational program as related to the certification program. In 1949, the New Jersey Certified Seed Growers Cooperative Association, a marketing cooperative designed for the use of all certified seed growers, was formed to facilitate the distribution and marketing of certified seed.

Today, the most important job of the New Jersey Field Crop Improvement Cooperative Association is still that of sponsoring seed certification of field crops, but it has added many additional activities that play an important role in New Jersey agriculture. For example, each year 100 or more bushels of certified seed corn are supplied to members of 4-H clubs and the Future Farmers of America for corn projects. The Certified Seed Corn Growers are sponsoring a fellowship in corn breeding at Rutgers University, and the Association sponsors the Livestock and Crops Day during Farmers Week in Trenton.

At present, the Association owns a fully-equipped grading mill in Kingston and supplemental portable equipment for on-the-farm work. As of June 1951, the first business manager was hired to supervise the Association's activities.

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"SHALL I BE A PURE SEED GROWER"

"Temperament and location are vital factors in the success of any enterprise and certainly in 'pure seed' production and distribution.

"Therefore, each present or prospective seed grower may well take an inventory of his qualifications and operating conditions.

"Answer frankly the following questions:

"Am I a 'pure seed' enthusiast and do I appreciate the value of pure seed and the attention necessary to produce it?

"Do I appreciate the work that plant breeders and the experiment stations are doing in developing superior strains of crop plants for farmers, and would I accept my responsibility in maintaining the purity and seed value of the superior varieties they develop?

"Is my land infested with weeds and foreign seed to such an extent that high quality seed production is doubtful? Would I give my best attention toward such matters as clean land, careful seeding, roguing, threshing, and handling?

"Am I careful and painstaking or inclined to be indifferent, slipshod and careless in using and handling seeds?

"Do I realize that growing a good crop is only a part of producing Certified and Registered seed; that extra cleaning and processing equipment and time are required to prepare seed for sale, Certified and Registered?

"Would I keep posted on seed legislation and actively support the making and enforcement of good seed laws?

"Am I willing to grow up in the 'pure seed' business and learn by heeding advice, by getting experience, and by cooperating in the right spirit with my fellow seedsmen, neighbors, and customers, or am I just plunging into a promising new venture for big profits?

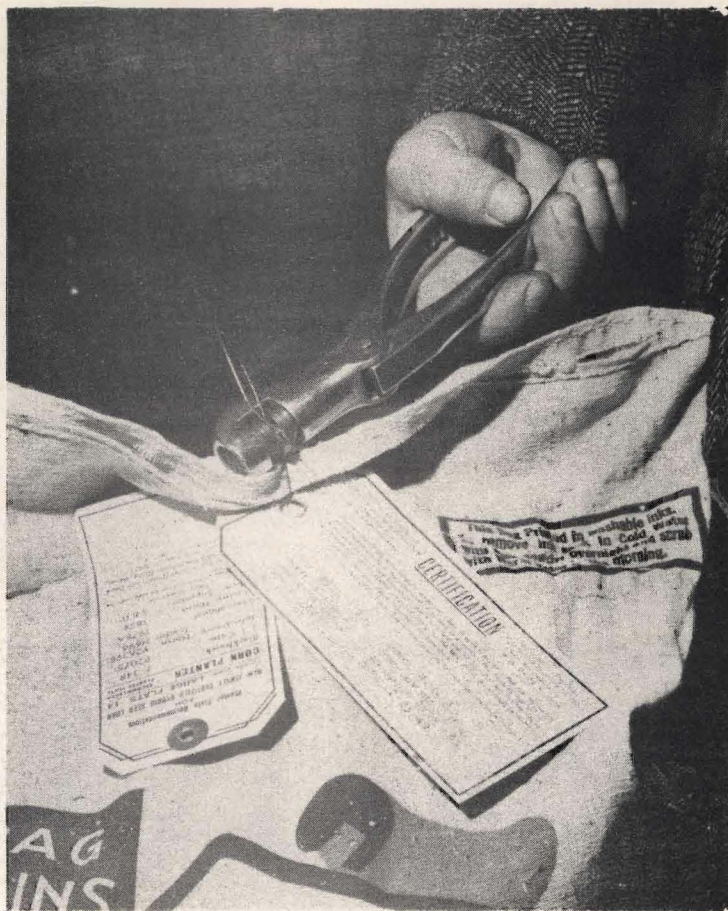
"Finally, do I realize that pure seed growing is not a get-rich-quick scheme, but a phase of the farming business that will usually yield reasonable returns to the man on clean land fitted to the job by temperament and location?"

Courtesy of the  
Ohio Crop Improvement Association.

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### GENERAL PROCEDURES FOR NEW SEED GROWERS

1. Become properly acquainted with the problems likely to be encountered in seed production. This information may best be obtained from established seed growers, county agricultural agents and agricultural workers from the State College or the State Department of Agriculture.
2. Obtain proper source of seed. New growers will find it wise to consult the certifying agency for best sources of seed. The New Jersey Field Crop Improvement Cooperative Association will have registered small grain seed on hand for seed production. Hybrid seed corn producers are required to procure their foundation seed through the Field Crop Improvement Cooperative Association.
3. For the production of certified seed, use fields that are relatively free of weeds and possess high fertility. When selecting your seed field, consider volunteer plants from the previous crop that may give mixture.
4. Plant, fertilize and cultivate correctly. Be sure grain drill and all other equipment contain no foreign seed.
5. Apply for certification prior to the date shown on the application form. Application forms are available from your county agent, the New Jersey Field Crop Improvement Cooperative Association or the New Jersey Department of Agriculture.
6. Before the field inspection, prepare the field by removing off-type or diseased plants, other crops and harmful weeds.



All Certified Seed is Sealed by a State Inspector.

7. Harvest on time to preserve high quality seed. Be sure that harvesting equipment and bags are free of other crop seeds.
8. Store harvested seed in a well-ventilated, rodent and insect-free building. Check moisture regularly. Excessive moisture will reduce seed quality as quickly as any factor.
9. Contact the Field Crop Improvement Cooperative Association for cleaning, as early as possible.
10. Tags and seals will be supplied by the certifying agency and placed on the seed bags at the time of cleaning.

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## RECOMMENDED PRACTICES FOR GROWING CERTIFIED SEED

Certified seed production is an ever-growing business, and because it is a business, its investors are responsible for producing seed crops of superior quality worthy of the name "Certified".

Extraordinary care must be exercised in planting, harvesting and storing the certified seed crop. Seed grown for certification should be planted on the best land available, land that is free from all undesirable plant species and of high enough fertility to produce a crop that not only has the maximum in genetic purity, but also shows by its appearance that it was produced under the best of growing conditions.

All crops eligible for certification in New Jersey grow best on fertile, well-drained soils. There must be plenty of plant food available in the soil. Commercial fertilizer or manure should be applied to obtain the highest possible returns from an acre. Lime is also important in growing good crops.

Planting certified seed fields at the proper time for maximum production and quality is also important. Planting later than the recommended date reduces yields and generally reduces seed size and quality. For best results, the recommendations of the Agricultural Experiment Station should be followed closely.



Field Inspection of a Small Grain Field

Harvesting of the certified seed crop should be completed as soon as the crop is mature and safe for storage. Delayed harvesting often results in an inferior seed crop, both in quality and appearance.

The storage area for the seed crop should be thoroughly cleaned before the crop is stored. Brush down the side walls and sweep the floors to remove any grain that may be left from the previous storage. At least 10 days prior to the time the grain is to be stored, spray the storage area with a 5 per cent solution of DDT in kerosene. This assures freedom from mechanical mixtures and any stored grain insects which may be present.

Remember, certified seed sells for a premium because it represents the best that money can buy. Therefore, it deserves the best possible attention the grower can provide.

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#### ROGUING

Roguing refers to the removal of off-type, diseased or otherwise undesirable plants and weeds from a seed field. Roguing is essential to maintain high seed quality and to offset the forces that cause seed to "run out". Good seed growers consider roguing essential.

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## GENERAL SEED CERTIFICATION STANDARDS

These standards are applicable to all crops eligible for certification and with the standards for the individual crops, shall constitute the standards for the certification of field crops in New Jersey.

### I. TYPE OF CERTIFYING ORGANIZATION

The New Jersey Department of Agriculture is the official seed certification agency in the State of New Jersey. The New Jersey Agricultural Experiment Station is the agricultural research and extension agency for seed certification. The New Jersey Field Crop Improvement Cooperative Association is an incorporated nonprofit organization of seed growers which is sponsoring certification and also maintaining seed cleaning machinery and seedsmen supplies. These three organizations independently cooperate in the certification program.

### II. PURPOSE OF CERTIFICATION

The purpose shall be to maintain and make available to the public, through certification, high quality seed and propagating material of superior crop varieties so grown and distributed as to insure genetic identity, genetical and mechanical purity and a minimum of seed-borne diseases. The word "seed" or "seeds" as used in these standards shall be understood to include all propagating materials.

### III. ELIGIBILITY REQUIREMENTS FOR CERTIFICATION OF CROP VARIETIES

Only those varieties, hybrids, single crosses or inbreds that are approved by the New Jersey Agricultural Experiment Station shall be eligible for certification.

### IV. CLASSES AND SOURCES OF CERTIFIED SEED

A. Four classes of seed shall be recognized in seed certification, namely, breeder, foundation, registered and certified. These classes are defined as follows.

#### 1. BREEDER SEED (White Tag)

Breeder seed is seed or vegetative propagating material directly controlled by the originating, or in certain cases, the sponsoring plant breeder or institution, and which provides the source for the initial and recurring increase of foundation seed.

2. FOUNDATION SEED (White Tag)

Foundation seed shall be seed stocks that are so handled as to most nearly maintain specific genetic identity and purity and that may be designated or distributed by an agricultural experiment station. Production must be carefully supervised or approved by representatives of an agricultural experiment station. Foundation seed shall be the source of all other seed classes, either directly or through registered seed.

3. REGISTERED SEED (Purple Tag)

Registered seed shall be the progeny of foundation seed or registered seed that is so handled as to maintain satisfactory genetic identity and purity and that has been approved and certified by the certifying agency. This class of seed should be of a quality suitable for the production of certified seed.

4. CERTIFIED SEED (Blue Tag)

Certified seed shall be the progeny of foundation, registered or certified seed that is so handled as to maintain satisfactory genetic identity and purity and that has been approved and certified by the certifying agency.

Note: The certifying agency may permit a grower to continue production of foundation, registered or certified seed from lots of seed that were fully inspected but rejected because of factors which did not involve genetic identity and purity of germ plasm. (See also IX.)

V. ESTABLISHING THE SOURCE OF SEED

In those cases where the seed planted for production of foundation, registered or certified seed is obtained from another person, documentary evidence, such as a certification tag, sales record, etc., must be submitted to the certifying agency to establish the source of seed.

VI. QUALIFICATIONS FOR INSPECTORS

Inspection work shall be performed only by men who have been trained and approved by the certifying agency.

VII. SEED TESTING

Analyses and tests of samples of seed, and definitions of analytical terms, shall be in accordance with the rules of the Association of Official Seed Analysts.

### VIII. TAGS, SEALS, AND BAGS

- A. All seed stocks, when sold as certified seed, shall have an official tag properly affixed to each container. Sealing requirements will depend upon the crop and methods of handling.
- B. The certification tag which is attached to the bag serves as evidence of the genetic identity and purity of the seed contained therein. The blue tag will be used to designate certified seed. A purple tag will be used to designate registered seed. A white tag will be used to designate foundation seed and breeder seed.
- C. All official certification tags and seals will be affixed to seed containers, under supervision of, or by, a representative of the Department of Agriculture.
- D. Registered and certified seed must be packaged in new or clean bags which bear the official certification brand or otherwise approved by the certifying agency.

### IX. SUBSTANDARD SEED IN EMERGENCIES

It is recognized that in an emergency, such as unfavorable weather conditions, much seed necessary for the advancement of crop improvement would be lost if regular certification standards are adhered to. Therefore, under such circumstances, seed failing to meet certification standards other than those effecting genetic purity may be certified, provided there is no injury to the reputation of certified seed. Such seed must not carry the regular blue certification tag but at the time of a general emergency, it may have a red certification tag showing the respects in which the seed does not meet the regular certification standards.

### X. CONTAMINATING CROPS AND WEEDS

Every field for which certification is requested shall show evidence of good management and shall show that reasonable precaution has been taken to control contaminating crops, varieties, prohibited (primary) noxious weeds and restricted (secondary) noxious weeds, the seeds of which are indistinguishable or inseparable with available cleaning equipment from seed of the particular crop being inspected.

### XI. SEED TREATMENT

Possibility of rejection of fields because of the presence of disease will be greatly reduced if the seed used in planting these fields is given the appropriate chemical seed treatment. Inexpensive and effective seed treatments are available for soybeans, corn and the small grains, and should be used as a general precaution against introduction of soil-borne diseases carried on or with the seed.

## XII. SEED-BORNE DISEASES

Every field for which certification is requested shall show evidence that reasonable precaution has been taken to control seed-borne diseases. The field at time of inspection shall not contain beyond established tolerances of injurious seed-borne diseases which are enumerated in the individual crop standards. The representative sample of the finished seed crop, at the discretion of the inspector, may be subjected to laboratory examination for diseases.

## XIII. COMPLYING WITH FEDERAL AND STATE SEED LAWS

Responsibility for any obligations, other than those concerned with certification, arising from the sale or shipment of seed which has been certified, rests with the grower or subsequent handler making the sale or shipment.

## XIV. FAILURE TO COMPLY WITH THE CERTIFICATION REGULATIONS

A grower willfully failing to comply with the certification regulations covering the production of New Jersey certified seed may forfeit the right to produce New Jersey certified seed in the future.

## XV. APPLICATION FOR CERTIFICATION

A. Application forms may be obtained through the Field Crop Improvement Cooperative Association, your county agent, or the State Department of Agriculture. Separate applications must be filed for each crop. Upon completion of filling out the application form, attach check (made payable to the New Jersey Field Crop Improvement Cooperative Association) for fees and send to the Supervisor of Seed Certification, New Jersey Department of Agriculture, Trenton.

B. Establishing the source of seed. (See Regulation V, page 10.)

C. Dates for Filing Application

The latest dates on which applications may be filed at the office of the certifying agency are:

Winter wheat	-	May 1
Winter barley	-	May 1
Winter rye	-	May 1
Winter oats	-	May 1
Hybrid corn	-	June 1
Spring oats	-	June 1
Spring barley	-	June 1
Legumes and grasses	-	June 1
Soybeans	-	August 1

Note: It is desirable to file applications for inspection as soon as possible.

## D. Maps of Farm

To facilitate the work of the certifying agent, it is suggested that maps accompany the application form giving field location, isolation distances and any other important facts that would be helpful to the inspector.

## XVI. CERTIFICATION FEES

Crop	Fixed Fees		Acreage Fees	
	Entrance	Field	Up to and Inc. 20 A.	Over 20 A.
Hybrid corn	\$ 10.00	\$4.00	\$ 3.00	\$2.50
Barley (winter & spring)	5.00	2.00	.70	.70
Oats (winter & spring)	5.00	2.00	.70	.70
Rye	5.00	2.00	.70	.70
Wheat	5.00	2.00	.70	.70
Legumes & grasses	5.00	2.00	.70	.70
Soybeans	5.00	2.00	.70	.70

## XVII. REFUNDS OR ADJUSTMENTS

## A. Hybrid Corn

Entrance and field fees will be refunded when fields have been withdrawn before field inspection. No refund of certification fees will be made after the field inspection.

## B. All Other Crops

If the field is withdrawn before field inspection, all fees will be refunded, except entrance fee. In case of failure to pass field inspection, a refund of acreage fees will be made. Failure to pass bin inspection, a refund of 1/2 the acreage fees will be made.

## XVIII. TRANSFER OF SEED

## A. Uncleaned

Provision has been made for the transfer of seed in bulk when it becomes necessary, but the following procedure must be followed if certification is to be completed:

1. It is the responsibility of the grower to notify the certifying agency to be at the grower's farm before or at the time the seed is to be moved from the farm. Also, the grower must supply the following information--
  - a. The name of the purchaser.
  - b. The exact amount of seed involved.
  - c. The date of delivery to the purchaser.

2. The purchaser must notify the certifying agency when he expects to receive his seed into his warehouse so an inspector can be on hand to inspect the grain as it is received. The purchaser must also supply a copy of the official weight receiving forms and also a report of the cleaning waste.
  3. The seed will be tagged and sealed by a state inspector when certification is completed. SEED IS NOT RECOGNIZED AS CERTIFIED UNTIL IT IS CLEANED, TAGGED AND SEALED. Tags will include the producer's number.
  4. The regulations regarding seed moved in bulk apply to the FIRST BUYER ONLY. No further transfer in bulk is permitted. If the first buyer does not complete certification, the seed becomes ineligible for certification.
- B. Seed handled under this procedure will be identified with the producer at all times.

#### XIX. REINSPECTION OF CARRY-OVER SEED

##### A. Eligibility

Certified seed that is carried over from the previous year must be resampled and tested by a state inspector, and if found to meet certification requirements, may be sold as certified seed. Certified seed will be eligible for recertification for only one year after produced. Seed will be retagged by a representative of the certifying agency.

##### B. Cost

There will be no charge for recertification.

## SWEET CORN INBRED LINES CERTIFICATION STANDARDS

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### I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The general seed certification standards are adopted as basic and together with the following specific standards, constitute the standards for certification of sweet corn inbred lines.

### II. CLASSES AND SOURCE OF SEED

- A. Only the class certified is recognized.
- B. An inbred line must be a relatively true breeding strain of corn resulting from successive generations of controlled self-fertilization with selection.
- C. An inbred line to be eligible for certification must be from a source such that its identity may be assured.

### III. FIELD INSPECTIONS

Frequent field inspections must be made by an inspector of the certifying agency before and during the pollinating period; said inspections to be made without previous notification to the grower.

### IV. FIELD STANDARDS

#### A. General Requirements

##### 1. Unit of Certification

The entire acreage of any one inbred line grown by and/or belonging to one applicant must be eligible and be inspected. Any field or portion of a field failing to meet requirements must be so disposed of that it cannot be used for seed purposes.

##### 2. Isolation Requirement

An increase field of an inbred line must be so located that it is not less than 1,320 feet from any other kind of corn.

#### B. Specific Requirements

An isolation which contains at any one inspection more than 1/10 of 1 per cent definitely off-type or more than 2 per cent doubtful-type plants that have shed pollen when 5 per cent or more of the plants in the isolation have receptive silks shall not be certified.

V. DRYING

The moisture content of the seed must be reduced to 14 per cent or less.

VI. SEED HOUSE OR BIN INSPECTION

Inbred lines shall be ear-inspected after maturity by the certifying agency, at which time they shall not contain an excess of .1 per cent of definitely off-type ears.

## SINGLE CROSS SWEET CORN HYBRIDS CERTIFICATION STANDARDS

### I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The general seed certification standards as adopted are basic and together with the following specific standards, constitute the standards for certification of single cross sweet corn hybrids.

### II. CLASSES AND SOURCE OF SEED

- A. Only the class certified is recognized.
- B. Single cross to be eligible for certification must be produced from inbred lines whose source assures their identity.
- C. The single cross usually consists of the first generation of a hybrid between two inbred lines.

### III. FIELD INSPECTIONS

Frequent field inspections shall be made by the inspector of the certifying agency before and during the pollinating period; said inspections to be made without previous notification to the grower.

### IV. FIELD STANDARDS

#### A. General Requirements

##### 1. Unit of Certification

The entire acreage of any one specific single cross grown by and/or belonging to one applicant must be eligible and be inspected. Any field or portion of a field failing to meet the requirements must be so disposed of that it cannot be used for seed purposes.

##### 2. Isolation Requirement

A specific single cross field shall be so located that the ear parent is not less than 990 feet from other corn.

##### 3. Detasseling

The following requirements apply when 5 per cent or more of the ear parent plants have receptive silks.

- a. A single cross will not be accepted for certification if at any inspection more than .5 per cent of the ear parent plants have shed pollen or if the total number having shed pollen for the pollinating period exceeds 1 per cent.

- b. Sucker tassels, portions of tassels, or tassels on main plants will be counted as shedding when 2 inches or more of the central stem, the side branches, or a combination of the two has the anthers extended from the glumes.

B. Specific Requirements

- 1. An isolation in which more than .1 per cent definitely off-type or more than 2 per cent doubtful-type plants in the pollen parent have shed pollen will not be certified.
- 2. At the time of the last inspection the ear parent shall not contain an excess of .1 per cent definitely off-type or 2 per cent doubtful-type plants.

V. SAMPLES AND SAMPLING

A representative sample shall be taken for laboratory analysis from each lot of seed by a representative of the certifying agency.

VI. SEED STANDARDS

<u>Factor</u>	<u>Standard</u> (Per cent)
Pure seed.....minimum.....	99.50
Inert matter.....maximum.....	0.50
Weed seed.....maximum.....	None
Other varieties.....maximum.....	None
Germination.....minimum.....	90.00
Moisture.....maximum.....	14.00

VII. DRYING

The moisture content of the seed must be reduced to 14 per cent or less by December 31 of the crop year.

SINGLE CROSS FIELD CORN HYBRIDS CERTIFICATION STANDARDS

I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The general seed certification standards as adopted are basic and together with the following specific standards, constitute the standards for certification of foundation single crosses of corn.

II. FIELD INSPECTION

At least four field inspections shall be made by an inspector from the certifying agency just preceding and during the pollinating period; said inspections to be made without previous notification to the grower.

III. FIELD STANDARDS

A. General Requirements

1. Unit of Certification

The entire acreage of any one specific foundation single cross grown by and/or belonging to one applicant must be eligible and must be inspected for certification. All seed from rejected fields or acres must be disposed of so that it cannot be used for production of commercial hybrids.

2. Isolation Requirement

A specific foundation single cross shall be so located that the ear parent is not less than 990 feet from other corn. However, if the contaminating corn is of the same grain color, and texture, this distance may be modified according to the following table:

<u>Distance to other corn of</u>		<u>Minimum outside</u>
<u>same grain color and texture</u>		<u>border rows needed</u>
<u>From</u>	<u>To</u>	
990	-and up (feet).....	2
891	-990           " .....	4
808.5	-891           " .....	6
726	-808.5       " .....	8
660	-726           " .....	10

B. Specific Requirements

1. Detasseling

The following requirements apply when 5 per cent or more of the ear parent plants have apparently receptive silks.

- a. A foundation single cross will not be accepted for certification if at any inspection more than 1 per cent of the ear parent plants have shed pollen or if the total number having shed pollen on any three inspections on different dates exceeds 2 per cent.
- b. When more than one combination is being grown in the same isolation and the ear parent of one or more of them is shedding pollen in excess of 1 per cent, all ears of the ear parents having 5 per cent or more apparently receptive silks at that time will be disqualified.
- c. Sucker tassels, portions of tassels, or tassels on main plants will be counted as shedding pollen when 2 inches or more of the central stem, the side branches, or a combination of the two has the anthers extended from the glumes.

## 2. Purity

- a. A field in which more than .1 per cent definitely off-type or more than 2 per cent doubtful-type plants in the pollen parent have shed pollen will not be certified.
- b. At the time of the last inspection, the ear parent shall not contain an excess of .1 per cent definitely off-type or 2 per cent doubtful-type plants.

## IV. DRYING

Single cross hybrid field corn seed must be harvested and artificially dried as soon as it reaches maturity. The moisture content must be reduced to and held at 14 per cent or less.

## V. HARVEST OR SEED HOUSE INSPECTION

Foundation single crosses shall be ear-inspected after maturity. At that time they shall not contain an excess of .1 per cent definitely off-type ears or more than 2 per cent doubtful-type ears. The shelled grain shall not contain more than .1 per cent off-type kernels or more than 2 per cent doubtful-type kernels.

## COMMERCIAL DOUBLE CROSS FIELD CORN HYBRIDS CERTIFICATION STANDARDS

### I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

- A. The general seed certification standards as adopted are basic and together with the following specific standards, constitute the standards for certification of commercial corn hybrids.
- B. Sections III and IV of the general standards are amplified as follows to apply specifically to commercial corn hybrids.
  1. Only the class certified is recognized.
  2. A commercial hybrid is one to be planted for the production of corn for feed or for any other commercial or farm use except seed. It may be any of the following:
    - a. Double-cross: The first generation of a cross between two single crosses.
    - b. Three-way cross: The first generation of a cross between a single cross and an inbred line.
    - c. Single-cross: A first generation cross between two inbred lines. (To be used for commercial production and not for the production of double or three-way crosses.)
  3. No hybrid can be certified unless the correct pedigree is made known.
  4. Certified commercial hybrids must be produced from certified inbred lines and certified foundation hybrids.
  5. To be certified, a field corn hybrid for grain must not yield significantly lower than widely used adapted hybrids when tested in its adapted area. It must be such that under normal conditions it will be sufficiently early in maturity to produce sound grain and be relatively resistant to lodging.

### II. FIELD INSPECTION

- A. At least three field inspections shall be made by a state inspector during the pollinating period; said inspections to be made without previous notification to the grower.
- B. Roguing

Obviously off-type plants shall be removed from the pollen parent (or tassels broken off) before pollen is shed. Not more than .1 per cent (1 in 1,000) off-type plants shedding pollen will be permitted in the pollinator at any inspection.

- C. Any irregularities in the planting pattern should be staked and called to the attention of the inspector.

III. FIELD STANDARDS

A. Unit of Certification

The entire acreage of any one specific commercial hybrid grown by and/or belonging to one applicant and used for seed must be eligible and must be inspected.

B. Isolation Requirement

1. Fields in which commercial hybrid corn is being produced must be so located that the female parent is not less than 660 feet from other corn of a different kernel color or type (sweet, pop, flint, red, etc.) in all directions including the diagonal.
2. All border rows of the pollen parent must be adjacent to and not separated from the ear parent rows. Every border row shall have at least an average stand of plants. The isolation distance of a seed field may be modified providing the foreign corn field is of the same type and color. The following table applies to all sides of the specific cross exposed to contamination from other corn, whether located directly opposite or diagonally, and indicates the minimum number of border rows required for areas of various sizes when located at different distances from the contaminating corn.

Isolation--Distances and Border Row Requirements:

9 or less Feet	Number of acres in the crossing field						40 or over Feet	No. of border rows required
	10-14	15-19	20-24	25-29	30-34	35-39		
	Distance of the ear parent from other corn							
Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	
660	643	627	610	594	577	549	544	1
618	602	585	569	552	536	519	503	2
577	561	544	528	511	495	478	462	3
536	519	503	486	470	453	437	420	4
495	478	462	445	429	412	396	379	5
453	437	420	404	387	371	354	338	6
412	396	379	363	346	330	313	297	7
371	354	338	321	305	288	272	255	8
330	313	297	280	264	247	231	214	9
288	272	255	239	222	206	189	173	10
247	231	214	198	181	165	148	132	11
206	189	173	156	140	123	107	90	12
165	148	132	115	99	83	66	49	13

To determine the necessary number of border rows, follow down the column indicating the correct acreage to the figure indicating the distance in feet from other corn. Then follow to the extreme right-hand column which indicates the minimum number of border rows necessary.

3. Adequate natural barriers are permitted for modifying isolation distances.
4. Differential maturity dates are permitted for modifying isolation distances, providing there are no receptive silks in the ear parent at the same time pollen is being shed in the contaminating field.
5. At least one male row should be planted on each side of the field, regardless of the planting pattern or distance from other corn.

#### C. Detasseling

The following requirements apply when 5 per cent or more of the ear parent plants have apparently receptive silks:

1. A commercial hybrid will be disqualified for certification if more than 1 per cent of the ear parent stalks have shed pollen at any one inspection or if the total for any three inspections on different dates exceeds 2 per cent.
2. Sucker tassels, portions of tassels, or tassels on main plants will be counted as shedding pollen when 2 inches or more of the central stem, the side branches, or a combination of the two have the anthers extended from the glumes.

#### IV. SAMPLES AND SAMPLING OF SEED

A representative sample shall be taken for laboratory analysis from each lot of seed by an authorized representative of the certifying agency.

#### V. HARVESTING REQUIREMENTS

Each grower is expected to harvest the seed crop sufficiently early to prevent deterioration of seed quality by insects, diseases and excess moisture. Precautions should be observed to prevent mixture of male ears with seed crop. Off-type ears should be discarded.

#### VI. DRYING

The moisture content of the seed must be reduced to 14 per cent or less by December 31 of the crop year.

VII. SEED STANDARDS

<u>Factor</u>	<u>Standard</u> (Per cent)
Pure seed.....minimum.....	99.00
Inert matter.....maximum.....	1.00
Weed seed.....maximum.....	None
Other varieties...maximum.....	0.20
Germination.....minimum.....	90.00
Moisture.....maximum.....	14.00
Insect injury.....maximum.....	3.00

VIII. GRADING STANDARDS

- A. The shelled grain must be uniformly graded to meet the certification requirements.
- B. All grades of hybrid seed corn to be certified must be properly tagged and sealed by a state inspector.

## SMALL GRAIN (WHEAT, RYE, BARLEY AND OATS) SEED CERTIFICATION STANDARDS

### I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

- A. The general seed certification standards as adopted are basic and together with the following specific standards, constitute the standards for certification of small grain.
- B. Section IV of the general standards is amplified as follows to apply specifically to winter barley. The three classes of seed shall meet the following requirements in addition to those provided in the general standards.
  1. Foundation seed must be hot-water treated for the control of loose smut.
  2. Registered seed must be the progeny of foundation seed.
  3. Certified seed shall be the progeny of foundation or registered seed.

### II. LAND REQUIREMENTS

A crop of small grain will not be eligible for certification if planted on land on which the same kind of crop was grown the year previous, unless the previous crop was grown from certified seed of the same variety and entered for certification.

### III. FIELD INSPECTION

- A. A field inspection shall be made each year that a certified seed crop is produced.
- B. The field inspection shall be made after the crop is fully headed when varietal crop mixtures and other factors can be determined.

### IV. FIELD STANDARDS

#### A. General Requirements

##### 1. Unit of Certification

- a. The field shall be considered the unit for certification and a field cannot be divided for the purpose of certification. A strip of ground at least 10 feet in width and which is either mowed, uncropped or planted to some crop other than the one being inspected shall constitute a field boundary for the purpose of these standards.

- b. All grain from rejected fields or portions of fields must be disposed of so that it cannot be used as certified seed.

2. Isolation Requirements

- a. All rye fields producing certified seed must be isolated by at least 660 feet from rye fields of any other variety or fields of the same variety that do not meet the varietal purity requirements for certification.
- b. All barley fields used for the production of registered seed must be isolated by at least 660 feet from fields of any other barley.
- c. All wheat fields used for the production of registered seed must be isolated by at least 660 feet from fields of any other wheat.
- d. No field of barley or wheat grown for certification will be eligible for certification within 330 feet of an adjacent field which contains 5 per cent or more infection of loose smut.

B. Specific Requirements

<u>Factor</u>	<u>Registered</u>	<u>Certified</u>
Other varieties(1).....	0.1% (1 in 1,000)	0.3%(3 in 1,000)
Inseparable other crops(2).....	5 plants per acre	15 plants per acre
Objectionable weeds whose seeds are inseparable(3).....	Practically none(4)	Practically none(4)
Diseases:		
Smuts not controllable with chemicals.....	10 plants per acre	30 plants per acre
Smuts controllable with chemicals.....	0.1% (1 in 1,000)	0.2% (2 in 1,000)
Other seed-borne diseases.....	(5)	(5)

- (1) Other varieties shall be considered to include off-type plants and plants that can be differentiated from the variety that is being inspected.
- (2) Inseparable other crops shall include crop plants, the seed of which cannot be adequately removed by the usual methods of cleaning. Example: Rye in wheat and barley in oats.
- (3) Objectionable weeds include radish, mustard, wild onion, Canada thistle, quackgrass, vetch, corn cockle and wild garlic.
- (4) Practically none shall be interpreted as one or less plant found per 5 acres inspected.
- (5) In the event a seed-borne disease is judged to be detrimental to the seed quality, the inspector shall have the power to reject the field from certification.

V. SAMPLES AND SAMPLING OF SEED

- A. A 10-pound sample representing seed eligible for certification shall be taken for laboratory analysis by a representative of the certifying agency.
- B. This sample shall be taken by a method which is adequate to obtain a representative sample of the lot.

VI. SEED STANDARDS

<u>Factor</u>	<u>Standards</u>	
	<u>Registered</u>	<u>Certified</u>
Pure seed.....minimum.....	98.00%	98.00%
Other varieties.....maximum.....	1 seed per lb.	5 seeds per lb.
Other small grain crops.....maximum.....	1 seed per lb.	2 seeds per lb.
Inert matter.....maximum.....	2.00%	2.00%
Weed seeds.....maximum.....	1 seed per lb.	2 seeds per lb.
Total objectionable weeds(1).....maximum.....	None	None
Moisture.....maximum.....	15.00%	15.00%
Germination(2).....minimum.....	90.00%	90.00%

(1) Objectionable weeds shall include those listed under FIELD STANDARDS, Section B, plus curled dock.

(2) With the approval of the New Jersey Agricultural Experiment Station and the New Jersey Department of Agriculture, the germination of small grain may be lowered to 85 per cent when unfavorable weather conditions are encountered.

SOYBEAN SEED CERTIFICATION STANDARDS

I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The general seed certification standards as adopted are basic and together with the following specific standards, constitute the standards for certification of soybean seed.

II. RESTRICTIONS ON NUMBER OF VARIETIES

Two varieties of similar appearance shall not be grown in the same field nor binned in the same seed house.

III. LAND REQUIREMENTS

The crop shall not be grown on land on which soybeans were grown the previous year, unless that crop was grown from certified seed of the same variety and was entered for certification.

IV. FIELD INSPECTIONS

Fields planted and entered for production of certified seed shall be inspected at least once, at a time when varietal purity can be determined.

V. FIELD STANDARDS

A. The field shall be considered the unit for certification and a field cannot be divided for the purpose of certification. A strip of ground at least 10 feet in width and which is either mowed, uncropped or planted to some crop other than soybeans shall constitute a field boundary for the purpose of these standards. All grain from rejected fields or portions of fields must be disposed of so that it cannot be used as certified seed.

B. Specific Requirements

<u>Factor</u>	<u>Standards</u>	
	<u>Registered</u>	<u>Certified</u>
Other varieties <sup>(1)</sup> .....maximum.....	0.1%(1 in 1,000)	0.3%(3 in 1,000)
Corn plants with developed seed.....maximum.....	None	None
Objectionable weeds <sup>(2)</sup> .....maximum.....	None	None
Diseases.....maximum.....	(3)	(3)

(1) Other varieties shall be considered to include off-type plants, and plants that can be differentiated from the variety that is being inspected.  
 (2) Objectionable weeds shall include all serious weed seeds which cannot be readily separated from soybeans.  
 (3) In the event a seed-borne disease is judged to be detrimental to the seed quality, the inspector shall have the power to reject the field from certification.

VI. SAMPLES AND SAMPLING OF SEED AS READY FOR SALE

- A. A representative sample of each lot of seed as it is to be offered for sale shall be taken for a laboratory analysis by a representative of the certifying agency.
- B. This sample shall be taken by a method which is adequate to obtain a representative sample of the lot.

VII. SEED STANDARDS

<u>Factor</u>	<u>Standards</u>	
	<u>Registered</u>	<u>Certified</u>
Pure seed.....minimum....	98.00%	98.00%
Other varieties <sup>(1)</sup> ..maximum....	0.10%	0.20%
	(1 in 1,000)	(2 in 1,000)
Inert matter.....maximum....	2.00%	2.00%
Other crops.....maximum....	None	1 seed per lb.
Corn.....maximum....	None	1 seed per 10 lbs.
Weed seed.....maximum....	1 seed per lb.	2 seeds per lb.
Objectionable weed seed <sup>(2)</sup> .....maximum....	None	None
Moisture.....maximum....	14.00%	14.00%
Purple seed.....maximum....		3.00%
Germination.....minimum....	85.00%	85.00%

(1) Off-colored beans due to environmental factors shall not be considered other varieties.

(2) Objectionable weeds shall include all primary and secondary noxious weed seeds under the New Jersey State Law.

INTER-AGENCY CERTIFICATION STANDARDS  
AND PROCEDURES

I. VARIETIES ELIGIBLE

Only those varieties approved for certification by a member agency of the International Crop Improvement Association and approved by the New Jersey Agricultural Experiment Station will be eligible for inter-agency certification.

II. AGENCIES ELIGIBLE

Only member agencies of the International Crop Improvement Association may participate.

III. APPLICATION OF STANDARDS

- A. The seed certification standards as adopted by the New Jersey Department of Agriculture issuing the certification tags shall be applied.
- B. In the absence of New Jersey standards, the seed standards of the state in which the seed was field inspected will be applied.

IV. EVIDENCE OF SEED ELIGIBILITY

- A. Seed shall not be recognized for final certification by this agency unless it is received in containers carrying documentary evidence of its eligibility supplied by another certifying agency including:
  - 1. Variety and kind.
  - 2. Amount of seed (pounds or bushels).
  - 3. Class of seed (foundation, registered or certified).
  - 4. Inspection or lot number.

V. PRIOR APPROVAL OF COOPERATING CERTIFICATION AGENCIES

New Jersey shall not require advance approval of another agency (within the limits of II above) to engage in inter-agency certification activities unless the original certifying agency prohibits or limits inter-certification by a statement on its tag, provided complete information is returned to the certifying agency last having jurisdiction of the seed. Such information shall include the amount of seed received, amount of seed finally certified, nature of service rendered (recleaning, re-bagging or retagging), and lot numbers of seed involved. Prior approval shall be required unless this procedure is followed.

## VI. BLENDING

- A. Classes of seed other than corn, cereals and soybeans may be blended. Lots of the same class of seed originating from one state may be blended. Seed from two or more states shall not be blended without the prior approval of each state concerned.
- B. In cases of blending or recleaning, the processor assumes the risk of having seed that meets certification requirements.

## VII. APPROVAL OF PROCESSORS

- A. Processors desiring inter-agency certification services shall apply to the New Jersey Department of Agriculture, Trenton and shall meet the following requirements:
  1. Facilities shall be available to perform the function requested without introducing admixtures.
  2. Identity of the seed must be maintained at all times.
  3. Records of all operations shall be complete and adequate to account for all incoming and finally certified seed. These shall include:
    - a. Receiving records, including the following information:
      - (1) Variety and kind
      - (2) Name and address of the shipper
      - (3) Shipper's lot number or inspection number
      - (4) Date of shipment
      - (5) Date received
      - (6) Weight received
      - (7) Receiving lot number assigned to the lot of seed by the consignee
      - (8) Name and address of the delivering carrier.
    - b. Record of blending, cleaning or other processing, also rebagging, including:
      - (1) Variety and kind
      - (2) Lot number of component lots used in making final or blended lot and final lot number
      - (3) Number of bags and weight of each component
      - (4) Number of bags and weight of recleaned seed or blended seed
      - (5) Weight of refuse or screenings and its disposition, and
      - (6) Date processor rebagged.
    - c. Disposition or stock record which shall include:
      - (1) Variety and kind
      - (2) Number of bags and weight of the final lot
      - (3) Invoice number and weight covering each shipment
      - (4) Balance remaining after each shipment, and
      - (5) Amount used in other lots and the identity of the other lots into which it was blended.

- d. Invoice or other sales record which shall include:
  - (1) Variety and kind
  - (2) Name and address of the buyer or consignee
  - (3) Date sold or shipped
  - (4) Number of bags and weight of seed sold or shipped, and
  - (5) Lot number.

4. Processors shall permit inspection by the New Jersey Department of Agriculture of all records of the kind of seed certified, including both certified and non-certified seed.

B. Approved processors shall designate an individual who shall be responsible to the New Jersey Department of Agriculture for performing such duties as may be required.

C. Approval of processors shall be on an annual basis.

#### VIII. INSPECTION OF PROCESSING OPERATIONS

The New Jersey Department of Agriculture shall make as many inspections of both seed and records as may be required to satisfy itself that only the seed meeting requirements is labeled with certified tags.

#### IX. SAMPLES

Samples of all incoming lots to be certified as well as the finally certified lots shall be retained by the New Jersey Department of Agriculture.

#### X. TAGS AND TAGGING

A. Tags issued for inter-agency certified seed will be serially numbered and carry a lot number and clearly show the certifying agencies involved, the variety, kind and class of seed.

B. The certification tag will not carry other labeling information, but will carry the following statement: "This tag is void unless accompanied by analysis tag showing data required by law."

#### XI. EDUCATIONAL RESPONSIBILITIES

A. It shall be the responsibility of the New Jersey Agricultural Extension Service to:

- 1. Inform seed users of the true value of inter-agency certified seed.
- 2. Acquaint and assist the Seed Trade with the procedures involved in inter-agency certification.

CHAPTER 298, LAWS OF 1952  
(New Jersey Seed Certification Law)

AN ACT authorizing the State Board of Agriculture to certify agricultural seeds and tubers; to prohibit the use of the words "certified", "inspected", "registered", "foundation", or similar terms in conjunction with the sale of agricultural seeds and tubers unless such seeds and tubers were inspected and certified as provided for in this act; to relieve the Department of Agriculture of all financial responsibility for debts incurred by cooperating organizations; and to prescribe penalties.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. The State Board of Agriculture is authorized to establish rules and regulations for the inspection, grading and certification of agricultural seeds and tubers grown in this State.
2. The Secretary of Agriculture shall have the authority to provide for the inspection, grading and certification of the same at the request of the grower.
3. The Secretary of Agriculture shall fix and collect fees for such inspection, grading and certification and pay the same into the State treasury.
4. Every person, firm, association or corporation desiring to cooperate with the State Board of Agriculture in certifying agricultural seeds and tubers shall first have received the approval of the State Board of Agriculture. Upon receipt of such approval, every firm, association or corporation subject to the provisions of this act shall observe, conform and comply with all rules and regulations fixed and established by the State Board of Agriculture.
5. It shall be unlawful for any person, firm, association or corporation to offer for sale in New Jersey, orally, or in writing, or to represent by certificate, advertisement, label, or brand, or any other description, real or implied, any agricultural seeds and tubers as "certified seed", "inspected seed", "registered seed", "foundation seed", or similar terms, unless and until such seed and tubers shall have been duly inspected and certified by the official certifying agency of the state of origin; and it shall be unlawful to offer or expose for sale agricultural seeds and tubers with a tag or seal similar in size and color that could in any way be mistaken for an official tag or seal.
6. The Department of Agriculture shall not be financially responsible for debts incurred by, damage inflicted by, or contracts broken by cooperating organizations, persons, firms, associations or corporations conducting seed certification work.
7. Any person, firm, association, or corporation, or any officer, agent, servant, or employee thereof, violating any of the provisions of this act shall, for each offense, be liable to a penalty of not more than fifty dollars (\$50.00).

8. The Secretary of Agriculture may withhold certification for a period not exceeding two years from any grower of agricultural seeds or tubers who is or has been engaging in, or attempting to engage in dishonest practice for the purpose of evading the provisions of this act, including standards, rules and regulations established by the State Board of Agriculture.

9. This act shall become effective immediately.

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