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AGRICULTURE

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DELAWARE SEED CERTIFICATION STANDARDS AND PROCEDURES

GENERAL SEED CERTIFICATION REQUIREMENTS

I. PURPOSE OF CERTIFICATION

Seed Certification in Delaware is a voluntary service maintained and controlled by farmers. The purpose of certification is to encourage farmers to produce better crop seed of high yielding adapted varieties. Its success depends to a large extent upon the cooperation and interest of the farmer. A producer should feel responsible for the seed produced and sold by him and must confirm this in the statement of facts on the tag attached to the bag in which his seed is sold or to the invoice if selling in bulk.

II. CERTIFICATION AGENCY

The Delaware Department of Agriculture is the official seed certifying agency in Delaware. The Department establishes and administers standards for certification with the advice of the Delaware Crop Improvement Association, so long as the Association exists, and the Plant Science Department of the University of Delaware. The Department inspects the production of certified seed under these standards.

III. REQUIREMENTS FOR CERTIFICATION

- A. Only varieties accepted by the certifying agency are eligible for certification.
- B. Only a field planted with certified seed (foundation or registered), identified by an appropriate tag and certified by a recognized certifying agency, is eligible for certification.
- C. If a field and seed inspection is made and the seed is rejected for any reason other than varietal purity, the applicant may plant the seed from such a field or supply and make application for certification the following year.

IV. CLASSES OF CERTIFIED SEED

- A. Four classes of seed shall be recognized in seed certification; namely breeder, foundation, registered, and certified.
1. Breeder seed is seed directly controlled by the originating institution or firm and supplies the source for the initial and recurring increase of foundation seed.
 2. Foundation seed shall be so handled as to most nearly maintain specific genetic identity and purity. Foundation seed must be owned or under the supervision of an Agricultural Experiment Station or the originator and shall be the source of registered and/or certified seed classes.
 3. Registered seed shall be the progeny of foundation 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 production of certified seed.
 4. Certified seed shall be the progeny of foundation 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. The number of generations of certified seed is usually limited to one, but this may be changed at the discretion of the Department.
- B. It is recommended that new producers of certified seed start with Foundation Seed, if possible, rather than with Registered Seed. The varietal purity can be more easily maintained by starting with seed a class higher than that to be produced. Those starting with seed that has just met the minimum standards of certification may have difficulty meeting the requirements. This also applies to growers who desire to renew their seed stock.

SMALL GRAIN & SOYBEAN CERTIFICATION STANDARDS

I. DATES FOR FILING APPLICATIONS

- A. Growers who wish to have their grain fields inspected for the production of Certified Seed should secure an application from the Seed Certification Specialist, Delaware Department of Agriculture, Dover, Delaware 19901. This application, properly completed and with the fee enclosed, must reach the Department not later than the following dates for the respective crops:

BARLEY	RYE	OATS	WHEAT	SOYBEANS
May 15	June 01	May 15	June 01	September 01

- B. Applications should be made as early as possible. Those arriving later than the above dates will incur a \$10.00 late charge per application and may be too late for inspection. No field inspection will be performed prior to receipt of application. Also, the appropriate tags must be submitted with the application as requested.

II. INSPECTION FEES

- A. A charge of \$1.50 per acre for each crop will be made to all applicants for field inspection, with a minimum fee of \$20.00 per farm. The fee must cover all the acreage of grain in each field inspected.
- B. The inspection fee must accompany the application for inspection. Checks, drafts, or money orders should be made payable to the Delaware Department of Agriculture.
- C. There will be no refunding of fees if the crop fails to pass inspection. Fees will be refunded if the application is cancelled, and the Seed Certification Specialist is notified before the inspector is on his way to the field.

III. TAG FEES

- A. A charge of ten cents (10¢) per tag will be made for tags issued for seed to be sold as Certified on all grains.
- B. Analysis tags may be obtained from the Department also (either blank or printed) at the same price as certified tags.
- C. Official certification tags will not be issued until all testing is completed and inspection fees are paid. The tag fee is due upon receipt of a statement from the Department.

IV. FIELD INSPECTION

- A. Inspection must be made before the crop is harvested. Any crop harvested before field inspection will not be eligible for certification. The best time for the inspection is just after the grain has changed color so that the percentage of mixture of other varieties can be better determined by the inspector. The presence and amount of weeds and disease will be recorded by the inspector. The field must be reasonably free from these to pass inspection.

- B. Before the inspector arrives, it is wise for the grower to carefully go over the grain field and rogue out the noxious weeds, off-type grain, and other grain and impurities that cannot be removed by the thresher or the fanning mill.

V. BIN INSPECTION AND LABORATORY ANALYSIS

- A. The bin inspection may be carried out either by the grower or by the seed dealer who will retail the grain for the grower.
- B. As soon as it is possible after threshing and cleaning, a sample of the harvested grain, representative of and not better than the entire lot as it will be offered for sale, will be sent prepaid to the Seed Certification Specialist, Department of Agriculture, Dover, Delaware 19901. This sample will be examined for purity, presence of weed and other crop seeds, and a germination test will be made by the State Seed Laboratory. The sender will be notified whether the sample submitted meets the requirements for certification.
- C. Any seed carried over from one season to the next must be retested for germination and labeled with the current germination and test date before being offered for sale. The certification tags affixed to bags of carryover certified seed need not be replaced if the bags have remained properly sealed.

VI. PROCESSING, BAGGING, AND BULK HANDLING REQUIREMENTS

- A. Certified Seed must be cleaned by an approved processor or the applicant and must be tagged when offered for sale in bags or bulk. Any cleaned seed bagged or in bulk leaving the farm, seed cleaning plant, or wholesale seed store without tags will not be eligible to receive tags.
- B. When seed is bagged, new bags must be used, and the certification tag must be sown or stapled to each in such a manner that it cannot be removed without damage to the tag. The bag may then be sealed with an official seal if desired. Seals can be obtained from the Department.
- C. When selling seed in bulk, arrangements concerning the movement of the seed must be made with the Seed Certification Specialist before the seed is moved. A certification tag and an analysis tag must be attached to the invoice and travel with the truck. Each truckload of certified seed shall be identified by a tag during movement. Seed can be sold in bulk only once, from the seedsman to the buyer; after that, the seed cannot be sold as certified.

VII. CERTIFICATION AND ANALYSIS TAGS

- A. Certified Seed, when sold as such, shall in all cases bear the official tag of the Delaware Department of Agriculture. In addition, an analysis tag is required which must contain the following information:
 - 1. Commonly accepted name of seed.
 - 2. Lot number or other lot identification.
 - 3. Name and number of noxious weed seeds per pound.
 - 4. Percentage by weight of all weed seeds.
 - 5. Percentage by weight of purity.
 - 6. Percentage by weight of other crop seed.

7. Percentage of germination, together with the month and year the germination test was conducted.
8. Name and address of vendor.

- B. Under the two-tag system used in Delaware, the certification tag (white, purple, or blue) identifies the seed as to crop, variety, lot number, and certification number, and is an indication that the minimum certification standards have been met. The analysis tag (of a different color), bearing the germination percentage and other information necessary to meet the requirements of the Delaware State Seed Law, must also accompany the seed. The analysis tag and the information it contains is the responsibility of the seller.

VIII. PROHIBITED AND RESTRICTED SEED

A. Prohibited Seed Table

Prohibited	
Common name	Scientific name
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Balloonvine	<i>Cardiospermum halicacabum</i>
Burcucumber	<i>Sicyos angulatus</i>
Panicum, Texas	<i>Panicum texanum</i>
Quackgrass	<i>Agropyron repens</i>
Ragweed, giant	<i>Ambrosia trifida</i>
Sicklepod	<i>Cassia tora</i>
Sorghum, species, Johnsongrass, perennial sweet sudangrass, sorghum alnum, and hybrids derived therefrom	<i>Sorghum spp.</i>
Thistle, Canada	<i>Cirsium arvense</i>
Thistle, plumeless	<i>Carduus spp.</i>
Tussock, serrated	<i>Nassella trichotoma</i>

1. Delaware law prohibits the sale of agricultural and vegetable seed consisting of or containing any of the above weed seeds.

B. Restricted Seed Table

Restricted	
In agriculture, vegetable, flower, tree, and shrub seed	
Common name	Scientific name
Anoda, spurred	<i>Anoda cristata</i>
Bermudagrass, common	<i>Cynodon spp.</i>
Bindweed	<i>Convolvulus arvensis</i>
Bluegrass, annual	<i>Poa annua</i>
Cheat or chess	<i>Bromus secalinus</i>
Cockle, corn	<i>Agrostemma githago</i>
Cocklebur	<i>Xanthium strumarium</i>
Dodder	<i>Cuscuta spp.</i>

Foxtail, giant	<i>Setaria faberi</i>
Garlic, wild	<i>Allium spp.</i>
Horsenettle	<i>Solanum carolinense</i>
Onion, wild	<i>Allium spp.</i>

1. Delaware law states, in part, "For agricultural seeds, the label shall show the name and rate of occurrence per pound of each kind of restricted noxious-weed seed present, singly or collectively, in any amounts whatsoever, provided that the amount does not exceed 160 per pound in Group 1, and 10 per pound in Group 2. Except in lawn or turf seed, annual bluegrass shall not exceed 256 per pound."
 - a. "Group 1: Agropyron spp., Agrostis spp., alfalfa, Bermudagrass, Brassica spp., orchardgrass, alsike, and white clover, crimson clover, dallisgrass, fescues, flax, foxtail millet, lespedezas, Poa spp., red clover, reed canarygrass, rhodesgrass, ryegrass, sweetclover, smooth brome, timothy, and other agricultural seeds of similar size and weight, or mixtures within this group."
 - b. "Group 2: Barley, buckwheat, oats, proso, rye, sorghums, sudangrass, vetches, wheat, and other agricultural seeds of a size and weight similar to, or greater than those within this group, or any mixtures within this group."

SMALL GRAIN SEED CERTIFICATION STANDARDS

The Seed Certification Standards as adopted by the Department are basic and, together with the following specific standards, constitute the standards for certification of small grain seed.

I. NUMBER OF VARIETIES

- A. Only one variety of a given grain shall be grown per farm, except when special permission has been obtained from the certifying agency prior to planting time.
- B. All of one variety produced on one farm must be inspected for certification.

II. LAND REQUIREMENTS

- A. Small grain for certification shall not be grown on land which produced the same crop the previous year, unless the previous crop was grown from certified seed of the same variety.
- B. It is suggested that small grain for certification not follow another small grain to help eliminate volunteer plants.

III. FIELD INSPECTION

- A. Small grain will be field inspected by a representative of the Delaware Department of Agriculture when the crop is fully headed and approaching maturity.
- B. A field harvested prior to inspection will not be eligible for certification.

IV. FIELD STANDARDS

A. GENERAL

- 1. Unit of Certification: The field shall be considered the unit of certification. A strip of ground at least the width of a drill or seeder and which is either mowed, uncropped, or planted to some crop other than the kind being certified shall constitute a field boundary for the purpose of these standards.
- 2. Isolation: All fields to be inspected (except Rye) shall be separated from other fields of similar crops, other varieties or uninspected fields of the same variety by either a distance of 5' or by a fence row; of a 5' strip must be mowed the field to be certified prior to inspection if it is planted immediately adjacent to another field of small grain. All rye fields used for the production of certified seed must be isolated by at least 600' from fields of any other variety or varieties of rye or fields of the same variety that do not meet the varietal purity requirements for certification.
- 3. Management: Poor stands, lack of vigor, heavy weed infestation, evidence of poor cultural care or other conditions that would bring certified seed into disfavor shall be cause for rejection.

B. Specific Requirements - Maximum Tolerance

Factor	Foundation	Registered	Certified
Other Varieties	1:5,000 heads (.02%)	1:5,000 heads (.02%)	1:2, 000 heads (.05%)
Loose Smut	None	None	1:2, 000 heads (.05%)
Covered Smut	None	None	None
Inseparable Other Crops	1:10,000 heads (.01%) Rye Prohibited	1:10,000 heads (.01%) Rye Prohibited	1:5,000 heads (.02%) Rye Prohibited
Prohibited Noxious Weeds	None	None	None
Restricted Noxious Weeds	None	None	Garlic only – 5 heads per acre permitted
Objectional Weeds	None	None	None

1. Diseases- If chemically controlled seed-borne diseases are noted upon field inspection or laboratory analysis, seed treatment is required.

V. SEED SAMPLES FOR LABORATORY ANALYSIS

A. Sampling

1. The grower shall send a 5-pound sample from the inspected seed, representative of and not better than the entire lot as it will be offered for sale. The sample shall be taken from various places in the bin with a grain sample probe, or it may be sampled at frequent and regular intervals while it is being cleaned and treated. When stored in bags, a sample shall be taken from every fifth bag.
2. Mail samples prepaid to the Seed Certification Specialist, Department of Agriculture, Dover, Delaware 19901.
3. The Department reserves the right to resample any lot of seed either before or after certification has been granted.

B. Seed Standards

Factor	Foundation	Registered	Certified
*Germination Minimum	90.0 %	90.0%	85.0%
Pure Seed -minimum	99.5%	99.5%	99.0%
Barley in oats -maximum per lb.	None	None	1 seed
Oats in barley-maximum per lb.	None	None	1 seed
Rye in wheat -maximum per lb.	None	None	None
Wheat in rye-maximum per lb.	None	None	1 seed
Inert Matter-maximum per lb.	0.5%	0.5%	1.0%
Prohibited Noxious Weed Seed	None	None	None
Restricted Noxious Weed Seed - maximum per lb.	None	None	1 seed
Common Weed Seed – maximum per lb.	None	None	5 seed

*The germination is likely to be affected unfavorably if the crop is binned when the moisture content is above 13%.

SOYBEAN SEED CERTIFICATION STANDARDS

The Seed Certification Standards as adopted by the Department are basic and, together with the following specific standards, constitute the standards for certification of soybean seed.

I. NUMBER OF VARIETIES

- A. Registered Seed Grower -A grower planting foundation seed for the production of registered seed shall be restricted to one variety per farm.
- B. Certified Seed Grower - Not more than two varieties, each of different maturity groups, may be grown per farm for certified seed.

II. LAND REQUIREMENTS

- A. Registered seed shall not be grown on land which produced the same kind of crop the previous year.
- B. Soybeans for certification shall not be grown on land which produced the same kind of crop the previous year, unless the previous crop was grown for certified seed of the same variety.

III. FIELD INSPECTION

- A. A field inspection will be made by a representative of the Delaware Department of Agriculture at blossom time.
- B. A second field inspection will be made at a time after the leaves have dropped and just before harvest time for the purpose of making a final inspection of the field and examining the combine and storage facilities.
- C. A field harvested previous to inspection will not be eligible for certification.

IV. FIELD STANDARDS

A. General

1. Unit of Certification: The field shall be considered the unit of certification and cannot be divided for the purpose of certification. A strip of ground at least the width of a drill or seeder and which is either mowed, uncropped, or planted to some crop other than the kind being certified shall constitute a field boundary for the purpose of these standards.
2. Isolation: All fields to be inspected shall be separated from other fields of soybeans, other varieties, or uninspected neighboring fields of the same variety by either a distance of 5 feet or by a fence row; or a 5-foot strip must be mowed from the field to be certified prior to inspection if it is planted immediately adjacent to another field of soybeans.
3. Management: Poor stands, lack of vigor, heavy weed infestations, evidence of poor cultural care or other conditions that would bring certified seed into disfavor shall be cause for rejection.

B. Specific Requirements - Maximum Tolerance

Factor	Foundation	Registered	Certified
Other Variables	None	1:5,000 plants (.02%)	1:2,000 Plants (.05%)
Inseparable Other Crop	None	None	None
Prohibited Noxious Weeds	None	None	None
Restricted Noxious Weeds	None	None	None
* Objectionable Weeds	*	*	*

* Jimsonweed and morning glory (Ipomoea species). Limited amounts may be permitted on field inspection only.

V. SEED SAMPLES FOR LABORATORY ANALYSIS

A. Sampling

1. The grower shall send a 10-pound sample from the inspected seed, representative of and not better than the entire lot as it will be offered for sale. The sample shall be taken from various places in the bin with a grain sample probe, or it may be sampled at frequent and regular intervals while it is being cleaned and treated. When stored in bags, a sample shall be taken from every fifth bag.
2. Mail samples prepaid to the Seed Certification Specialist, Department of Agriculture, Dover, Delaware 19901.
3. The Department reserves the right to resample any lot of seed either before or after certificate has been granted.

B. Seed Standards

Factor	Foundation	Registered	Certified
Germination Minimum*	85.0%	85.0%	80.0%
Pure Seed-minimum	99.0%	99.0%	98.0%
Other Varieties-maximum per lb.	None	0.1%	0.25%
Other Crop Seed-maximum per lb.	None	None	None
Inert Matter-maximum per lb.	1.0%	1.0%	2.0%
Prohibited Noxious Weed Seed	None	None	None
Restricted Noxious Weed Seed	None	None	None
Objected Weed Seed**	None	None	None
Common Weed Seed-maximum per lb.	0.05%	0.05%	0.5%
Diseased Seed-maximum per lb.***	3.0%	3.0%	3.0%
Purple Stain-Maximum	3.0%	3.0%	3.0%

* The germination is likely to be affected unfavorably if the crop is binned when the moisture content is above 13%.

** Jimsonweed and morning glory (Ipomoea species). Limited amounts may be permitted.

*** Pod and Stem Blight.