SOUTH DAKOTA

SEED CERTIFICATION

STANDARDS

The South Dakota Crop Improvement Association
2380 Research Park Way, Suite 136
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SEED CERTIFICATION STANDARDS 23

Certified Seed Production

The Grower's Responsibilities

1. Be a member of the South Dakota Crop Improvement Association (SDCIA).
2. Become familiar with the regulations in this handbook for both the General Seed Certification Standards and the specific Field and Seed Standards for the crop being produced.
3. Plant only FOUNDATION or REGISTERED seed of varieties eligible for certification.
4. Plant eligible seed on clean, eligible land, with adequate isolation from other varieties of the same crop.
5. Clean seeding equipment thoroughly.
6. Submit an application for field inspection before the established deadline date.
7. Fill in all required information, and send payment for inspection fees. List the legal description and previous crop(s) on the field for which certification is requested.
8. Submit seed source verification (certification tag or Bulk Transfer Certificate or SDSU Seed Laboratory Testing Report) with application. Where more than one seed lot is used for production of a variety, a tag from each seed lot must be submitted.
9. Prepare seed fields for inspection before the inspector arrives: clearly mark field boundaries, rogue out objectionable weeds and other crop plants, etc.
10. Harvest the mature crop with properly adjusted, thoroughly cleaned equipment and bin in clean, dry, identified storage.
11. Submit a representative sample for identification and pre-germination.
12. After the seed is conditioned, send a representative sample to the certification office for testing. Also write the name of the conditioner/cleaner on the Form C.
13. Label seed lots that meet certification requirements with official certification labels, analysis tags and appropriate plant variety statement as required on protected varieties. Eligible seed sold in bulk must be accompanied by a completed BULK TRANSFER CERTIFICATE.
14. Send a report (Form E) of seed sales and a check to cover the sales fee and or royalty and/or variety development assessments on those varieties requiring such fees to the certification office.

Certification Division, SDCIA Responsibilities

1. Supply each grower with forms and instructions for making applications for field inspection.
2. Review each application for completeness with special emphasis on land and seed stock eligibility.
3. Make field inspection of all crops at proper time and notify the grower of inspection results.
4. Arrange for testing with the SDSU Seed Laboratory and report the analysis of samples representing conditioned seed lots for germination, purity percentage and freedom from noxious weed seeds.
5. Issue Certificate of Inspection (Form D) final or provisional, certification tags and authorize Bulk Transfer Certificates for seed lots that qualify for certification.
6. Publish and distribute Certified Seed Grower Directories listing field-approved seed.
7. Assist in promoting the use of quality Certified Seed.

Introduction

This circular includes the Standards for Seed Certification adopted by the Committee on Certification of the South Dakota Crop Improvement Association (SDCIA).

It is intended that the "General Seed Certification Standards" as included herein, along with the standards shown for individual crops, shall constitute the standards for the crop in question.

These standards are based on more than 100 years of work on the task of adopting minimum certification standards for the United States, Canada and other member countries of the Association of Official Seed Certifying Agencies (AOSCA).

The Purpose of Seed Certification

The purpose of Seed Certification is to maintain and make available to the public sources of high quality seeds and propagating materials of superior varieties so grown and distributed as to insure genetic identity. Only those varieties that contain superior germplasm are eligible for certification.

Varieties eligible for certification have resulted either from natural selection or through systematic plant breeding techniques. In either case, without a planned method for maintaining genetic purity, there is grave danger of losing varietal identity.

Varietal purity is the first consideration in Seed Certification but other factors such as weeds, diseases, viability, mechanical purity and grading are also important.
Seed Certification is designed to maintain not only the genetic purity of superior crop varieties but also reasonable standards of seed condition and quality.

Seed Certification in South Dakota

Seed Certification work in South Dakota is a service maintained by seed producers of the state. Its purpose is to produce and distribute, under the guidance and supervision of the State Seed Certification Board and South Dakota State University, pure seed of the improved varieties of crops.

Plant breeders are continually developing new superior varieties. Certification provides the means by which such seed* may be increased in the limited generation system (Breeder, Foundation, Registered and Certified) and released as promptly as possible to the farmers in the state.

Growers who produce and market classes of Certified seed must follow a definite set of rules and regulations so that the seed buyer will be assured of varietal purity and identity and be protected against mixtures, noxious weeds and other such factors that affect seed quality.

Certified seed must stand the test of being field inspected as outlined in this circular. In addition to field inspection, a representative sample of the cleaned seed must be analyzed in the SDSU Seed Laboratory for purity, germination, noxious weeds, seed-borne diseases, and varietal purity.

Under the Seed Certification Law enacted by the 1947 session of the SD State Legislature, the State Seed Certification Board has, for the purpose of promoting and protecting the interests and welfare of the South Dakota seed growers and crop producers, endorsed the Standards of Seed Certification adopted by the South Dakota Crop Improvement Association, a nonprofit, educational and public service corporation.

Upon evidence that the standards and regulations have been fully complied with by the applicant for certification and under authority of the State Seed Certification Board, South Dakota Crop Improvement Certification Division or appointed agents, will place the official South Dakota tag on all seed which has passed all the requirements for Certified seed.

The Certified seed tag when attached to the bag shall serve for identification as to genetic identity and purity of the variety named on the tag. The certification and lot number shall also be shown.

* The word "seed" or "seeds" as used shall be understood to include all propagating materials.

General Seed Certification Standards

Note: These General Standards are applicable to all crops certified and shall, along with the standards shown for individual crops, constitute the South Dakota Crop Improvement Association Standards for that crop.

Certifying Organization

Under authority of SDCL 38:11 and the State Seed Certification Board, certification will be conducted by the South Dakota Crop Improvement Association, a nonprofit, educational and public service corporation with a close working relation among seedsmen, seed growers and agricultural research, extension and regulatory agencies.

Purpose of Certification

The purpose shall be to maintain and make available to the public through Seed Certification, high quality seeds and propagating materials of superior crop plant varieties so grown and distributed as to insure genetic identity, genetic purity as well as minimum standards for condition and quality.

Eligibility Requirements for Certification of Crop Varieties

Only those varieties that are accepted by the South Dakota Seed Certification Service in accordance with the criteria established by the Association of Official Seed Certifying Agencies (AOSCA) shall be eligible for certification. A variety will normally be considered eligible for certification if it has received favorable action by a national variety review board, the Plant Variety Protection office or an official seed certifying agency. For those crops where national certified review boards exist, it is recommended that varieties be submitted for review to determine their merit for certification. For varieties not covered by one of the above categories or if questions regarding eligibility arise, the State Seed Certification Board is the final authority. Contact the Seed Certification office for assistance.

A. The term "variety" means a subdivision of a kind which is distinct, uniform, and stable; "Distinct" in the sense that the variety can be differentiated by one or more identifiable morphological, physiological, or other characteristics from all other varieties of public knowledge, "Uniform" in the sense that variations in essential and distinctive characteristics are describable, "Stable" in the sense that the variety will remain unchanged to a reasonable degree of reliability in its essential and distinctive characteristics and uniformity when reproduced or reconstituted as required by the different categories of varieties.

B The SDCIA requires the originator, developer, or owner of a crop cultivar, or designated agent, to make the following information available.

1) Name of the cultivar (variety or hybrid)
2) A statement concerning the cultivar's origin and the breeding procedure used in its development.
3) A detailed description of the morphological, physiological, and other characteristics of the plants and seed that distinguish it from other cultivars and of any known variants.
4) Evidence supporting the identity of the cultivar such as comparative yield data, insect and disease resistance, or others.
5) A statement specifying the geographic area of adaptation of the cultivar.
6) A statement of the plans and procedures for the maintenance of seed classes, including the number of generations through which the cultivar may be multiplied.

7) A description of the manner in which the cultivar is constituted when a particular cycle of reproduction or multiplication is specified.
8) Any additional restrictions on the cultivar specified by the breeder, with respect to geographic area of seed production, age of stand, or factors affecting genetic purity.
9) A sample of seed representative of the cultivar as marketed.

C. For certain cultivars whose originator, developer, or owner requires a licensing fee, a Research and Development fee or royalty (singularly or combined) as a condition to rights of seed production, the releasing organization should provide pertinent information in regard to fees, assessment, and collection procedures to the SDCIA prior to initial allocation of Foundation seed. These procedures will be subject to applicable provisions of the policy set forth by SDCIA, and SDSU-AES.

Steps for Cultivar Approval

The SDCIA will recognize a crop cultivar as eligible for the seed certification program after approval of the documentation required in Section B of the Eligibility Requirements or by one or more of the following:

A. National Variety Review Board.
B. Plant Variety Protection Office
C. A member agency of the Association of Official Seed Certifying Agencies
D. OECD Seed Schemes List of Eligible Cultivars
E Varietal release committee of the Plant Science Department, SDSU-AES
F. Private breeders release statement

The SDCIA Board of Directors is the final authority if there are questions in regard to eligibility of a variety.

Definitions, Classes and Sources in Relation to Certified Seed

Applicant: the individual, partnership, or corporation in whose name application is made for field inspection. This identification shall be retained throughout the certification process with the field and seed lots.

Blend or blending: the process of commingling two or more lots of seed of the same kind to form one seedlot of uniform quality or a seedlot consisting of more than one variety of a kind, each in excess of five percent by weight of the whole.

Interagency certified seed blend: a blend of varieties that has been co-mingled according to regulations of the SDCIA. Each blend component shall be certified initially in its state of origin. The individual components of the blend must be listed on the certification label, along with original lot number, germination and state of origin.

Brand: word, name, symbol, number, or design to identify the seed of one SDCIA member to distinguish it from seed of another member.

Certified turfgrass: vegetatively propagated turfgrass plants (sod, plugs, or sprigs) which have been produced, inspected, handled, and labeled in accordance with the approved procedures/regulations and meets the premium landscape quality standards. Only the Certified class is recognized in vegetative sod, plugs, and sprigs production and marketing.

Classes of seed
Seven classes of seed shall be recognized in Seed Certification: Breeder, Foundation, Registered, Certified, Tested, Selected and Source Identified. These classes of seed shall meet the requirements included in the Association of Official Seed Certifying Agencies standards for the respective crops. These classes are defined as follows:

Breeder: *Breeder* seed is directly controlled by the originating or sponsoring plant breeding institution, firm, individual, or designee thereof, and is the source for the production of the other classes of Certified seed.

Foundation: *Foundation* seed is the progeny of Breeder or Foundation Seed produced under control of the originator or sponsoring plant breeding institution, or person, or designee thereof. As applied to certified seed, Foundation seed is a class of certified seed which is produced under procedure established by the certifying agency for the purpose of maintaining genetic purity and identity.
Registered: Is a class of certified seed which is the progeny of Breeder or Foundation seed and is produced and handled under procedures established by the certifying agency in accordance with Federal Seed Act regulations for producing the Registered class of seed for the purpose of maintaining genetic purity and identity. Varieties with a non-saleable Registered class specified in the variety release statement cannot be sold or transferred unless downgraded to, and labeled as, the certified class. No registered tags or labels will be issued for these varieties to ensure compliance with the variety release statement. Only the original purchaser of the foundation class seed, or their contract growers, may plant the harvested seed as the registered class.

Certified: Is a class of certified seed which is the progeny of Breeder, Foundation, or Registered seed and is produced and handled under procedures established by the certifying agency in accordance with Federal Seed Act regulations for producing the Certified class of seed for the purpose of maintaining genetic purity and identity.

Tested: Is a class of propagating materials that shall be the progeny of plants whose parentage has been tested and has proven genetic superiority or possesses distinctive traits for which the heritability is stable, as defined by the certifying agency, but for which a variety has not been named or released.

Selected: Is a class of propagating materials that shall be the progeny of phenotypically selected plants of untested parentage that have promise but no proof of genetic superiority or distinctive traits.

Source-Identified: Is a class of propagating materials collected from natural stands, seed production areas, seed fields, or orchards where no selection or testing of the parent population has been conducted.

Conditioning: Includes all activities performed on the seed between harvest and marketing such as cleaning, packaging, labeling and storing.

Dormant seed: viable seeds other than hard seeds, which fail to germinate when provided the specified germination conditions for the kind of seed in question. Viability of ungerminated seeds shall be determined by appropriate methods or combinations of methods.

Germination: the percentage of seeds capable of producing normal seedlings under ordinarily favorable conditions (not including seeds which produce weak, malformed, or obviously abnormal sprouts), determined by methods prescribed by either the AOSA, Federal, Canadian, or ISTA seed testing protocols.

Hard seed: The percentage of seeds which because of hardness or impermeability do not absorb moisture or germinate under prescribed tests but remain hard during the period prescribed for germination of the kind of seed concerned.

Hybrid: the first generation seed of a cross produced by controlling the pollination and combining (1) two or more inbred lines (2) one inbred or a single cross with an open pollinated variety or (3) two selected clones, seed line varieties, or species and including the following. Hybrid designations shall be treated as variety names.

A. **Commercial hybrid**: one to be planted for any use except seed production. It may be any of the following:

1) **Single cross:** The first generation hybrid between two inbred lines.
2) **Double cross**: The first generation hybrid between two single crosses.
3) **Top cross**: The first generation of a cross between an inbred line and an open pollinated variety or the first generation hybrid between a single cross and an open-pollinated variety.
4) **Three-way cross**: The first generation hybrid between a single cross and an inbred line.

B. **Foundation single cross:** is a single cross used in the production of a double cross, three-way cross, or a top cross.

C. **Foundation backcross:**

1) A first generation Foundation backcross must be the first generation cross between a Foundation single cross of related inbred lines and an inbred line which shall be the same as one of the inbreds in the Foundation single cross.
2) A second generation Foundation backcross must be the cross of a first generation backcross (seed parent) with its recurrent inbred parent (pollen parent).

Inbred line: a relatively true-breeding strain resulting from at least five successive generations of controlled self-fertilization or of backcrossing to a recurrent parent with selection or its equivalent for specific characteristics.

Inert matter: all matter, not seed, which shall include broken seeds, sterile florets, chaff, fungal bodies, and stones as established by AOSA rules and regulations.

Kind: one or more related species or sub-species which singly or collectively is known by one common name such as corn, oats, alfalfa, smooth brome, etc.

Label: the display(s) of written, printed, stamped, or graphic matter on or attached to the container of seed.

Labeling: all labels or other written, printed, stamped, or other graphic representations in any form whatsoever, accompanying and pertaining to any seed, whether in bulk or in container and shall include representations on invoices.

Lot: a definite quantity of seed (in containers or bulk) identified by a lot number or other mark, every portion of which is uniform, within recognized tolerances, for the factors that appear in the labeling.

Mixture: a seed lot consisting of more than one kind of crop resulting from the co-mingling of two or more lots of seed.

Interagency certified seed mixture: a mixture of kinds that has been co-mingled according to the regulations of the SDCIA. Each mixture component shall be certified initially in its state of origin. The individual components of the mixture must be listed on the certification label, along with original lot number, germination and state of origin.

None: zero seeds or zero occurrence of the undesirable quality factor can be found during inspection or in the sample submitted. "None" is not a guarantee that the lot or sample is free of the factor.

Noxious weed seeds: seeds or bulbs of plants recognized as noxious either by the South Dakota Seed law, Federal Seed Act or by the regulations of the certifying agency.

Objectionable Weeds: the seeds of which are indistinguishable or cannot be thoroughly removed by the usual methods of conditioning from seed of the crop being inspected.

Off-types: any seed or plant not a part of the variety in that it deviates in one or more characteristics from the variety as described and may include: seeds or plants of other varieties, seeds or plants not necessarily any variety, seeds or plants resulting from cross-pollination by other kinds or varieties, seeds or plants resulting from uncontrolled self-pollination during production of hybrid seed, or segregates from any of the above plants.

Open-pollinated seed: seed produced as a result of natural pollination as opposed to hybrid seed produced as a result of controlled pollination.

Other crop seed: seeds of plants grown as crops other than the kind or variety included in the pure seed.

Plant breeder: a person or organization actively engaged in the breeding and maintenance of varieties of plants.

Protected Variety: a variety for which an application has been made or accepted and a certificate of plant variety protection is issued under the U.S. Plant Variety Protection Act.

Pure Live Seed (PLS): the product of the percent of germination plus percent of hard and/or dormant seed multiplied by the percent of pure seed divided by one hundred. The result is expressed as a whole number.

Pure seed: seed exclusive of inert matter and all other seeds not of the seed being considered.

Record: (1) information which relates to the origin, treatment, germination, purity, kind, and variety of each lot of seed handled, transported, or delivered for transportation in intrastate or interstate commerce. Such information includes seed samples and records of declarations, labels, purchases, sales, cleaning, bulking, treatment, handling, storage, analysis, tests, and examinations.

(2) The complete record kept by each member for each treatment substance or lot of seed, consists of the information pertaining to his own transactions and the information received from others pertaining to their transactions with respect to each treatment substance or lot.

Representative sample: a sample drawn from a conditioned quantity or lot of seed (either in bulk or containers) in accordance with recognized sampling procedures.

Sale: (in any of its variant forms) to sell, barter, exchange, offer for sale, expose for sale, move, or transport in any of their variant forms.

Sod: turfgrass sod, turfgrass plugs, or turfgrass sprigs consisting of a single kind and variety or a blend of varieties or a mixture of kinds and varieties.

Sod Quality: a high quality grade of Certified turfgrass seed so grown, conditioned, labeled, and tested to exceed minimum certification standards.

Treated: that seed has been given an application of a substance or subjected to a process or coating designed to reduce, control, or repel disease organisms, insects, or other pests which attack seeds or seedlings.

Turf: a live population of one or more kinds of grasses, legumes, or other plant species used for lawns, recreational areas, soil erosion control, or other similar purposes and that is sold as vegetative sod, plugs, or sprigs.

Turfgrass Sod: a strip or section of live turfgrasses which, when severed, contains sufficient plant material to remain intact.

Turfgrass Plug: a small section cut from live turf of those turfgrasses normally vegetatively propagated, such as buffalograss, which when severed contains sufficient plant material to remain intact.

Turfgrass Sprig: a live plant, stolon, crown, or section cut from a perennial plant used as a turfgrass.

Unit of certification: a clearly defined field or fields which may be subdivided subject to special regulations for specific crops.

Variants: seeds or plants which are (a) distinct within the variety but occur naturally in the variety, (b) are stable and predictable with a degree of reliability comparable to other varieties of the same kind, within recognized tolerances, when the variety is reproduced or reconstituted, and (c) which are originally a part of the variety as released. Variants are not to be considered off-types. The breeder or sponsoring institution or organization shall identify variants as a part of the variety description.

Variety (cultivar): an assemblage of cultivated individuals which are distinguished by any characters (morphological, physiological, cytological, chemical, or others) significant for the purpose of agriculture, forestry, or horticulture and which, when reproduced (sexually or asexually) or reconstituted, retain their distinguishing features.

Weed seed: the seeds of any plant commonly known as a weed within this state. Weed seeds will be classified either as prohibited noxious, restricted noxious, objectionable, or common.

Limitations of Generation

The number of generations through which a variety may be multiplied shall be limited to that specified by the originating breeder or owner of the variety and shall not exceed two generations beyond the Foundation seed class with the following exceptions:

A. Recertification of the Certified class may be permitted for older varieties where Foundation seed is not being maintained.

B. The production of an additional generation of the Certified class only may be permitted on a one-year basis, when an emergency is declared prior to the planting season by the certifying agency stating that the Foundation and Registered seed supplies are not adequate to plant the needed certified acreage of the variety. The permission of the originating or sponsoring plant breeder, institution, firm or owner of the variety, if existent, must be obtained. The additional generation of Certified seed to meet the emergency need is ineligible for recertification.

Seed Distribution

Foundation seed production and distribution of new varieties developed and released by public agencies requires the cooperative efforts of the South Dakota Agricultural Experiment Station, Cooperative Extension Service, Seed Certification Service, and Foundation Seed Stocks Division.

A. New varieties are developed and released by Agricultural Experiment Stations and/or the U.S.D.A. Breeder seed is increased by the Foundation Seed Stocks Division and distributed as Foundation seed. Information about the variety is disseminated by the Cooperative Extension Service. Foundation seed is allocated by an allocation committee to areas of adaptation through the Crop Improvement Association whose members produce Registered and Certified seed. All classes of Certified seed are produced under the supervision of the Certification Service. The Allocation Committee shall consist of the following:

1. Plant Science Department Head-Chairman
2. Plant breeder or breeders concerned with the crop or crops involved
3. Extension agronomist/s
4. Manager of the Foundation Seed Stocks Division
5. Manager of the Seed Certification Service

(Refer to Memorandum of Agreement Concerning Seed Increases of New Varieties.)

B. Three classes of qualified growers are recognized for distribution of first-year releases of Foundation seed:

1. **Group I-** One who has produced Registered or Certified seed of small grain, flax or soybeans in each of the previous three years.
2. **Group II-** One who has produced Registered or Certified seed of small grain, flax or soybeans in only two of the past three years.
3. **Group III-** One who has produced Registered or Certified seed of small grain, flax or soybeans in only one of the past three years.

All seed growers must be members of the South Dakota Crop Improvement Associations.

Foundation seed of new first-year releases shall first be allotted to Group I growers. After Group I growers have submitted their requests, the remainder of the seed will be allocated to Group II and III growers.

Anyone who agrees to comply with rules and regulations established by the South Dakota Crop Improvement Association may produce Certified seed. A satisfactory record for attaining the qualified grower's status, outlined above, can be achieved by growing and certifying seed of any of the older varieties. All producers who purchase Foundation Class seed must agree to complete Certification requirements and proceed in good faith to have the production certified.

Grower's Responsibility

It is the responsibility of all growers and handlers of Certified seed to be familiar with the specific certification standards for the crop in question and to maintain the genetic purity and identity at all stages of seed production, conditioning and handling.

Application for Field Inspection

A. Applications for field inspection are available from the South Dakota Crop Improvement Association office or may be requested through the Cooperative Extension offices.

B. The term "applicant" used in this publication, refers to the individual or concern whose name appears on the application form. This identification must be retained throughout the certification process.

C. Applicant's responsibility:

The applicant's signature on the “Statement of Fields Applied For - Form B” is, in effect, a guarantee of the accuracy of all the information submitted on the form. In signing the “Statement of Fields Applied For - Form B”, the applicant accepts responsibility for:

1. Seeing that all equipment involved with planting, harvesting, or other seed handling is adequately cleaned to maintain genetic purity of the seed.
2. Making certain that the seed verified as the eligible seed source on the application was the seed planted on the field described on the application.
3. Maintaining the genetic purity and identity of the seed from harvest to the time it leaves the applicant's possession.
4. Completing report forms and paying the sales fee or royalties on public varieties and production fee on private varieties assessed against all seed sold for planting purposes from inspected and/or approved acreage.
5. To complete report forms and submit fees for royalty and/or variety development assessments on those varieties requiring such fees.

D. Closing Dates

Small grain, flax and cool season grasses ……May 31
Roundup Ready Soybeans . 2 weeks after planting but not later than June 15
Conventional Soybeans and all other crops …….July 1

Late Applications

The association reserves the right to refuse an application for field inspection made after the deadline date of the crop/crops in question. If inspection can be arranged on late applications, the late fee will be assessed on each field.

Incomplete Applications

An application which lacks necessary information, adequate fees, or documentary evidence of eligibility of the seed planted will be returned to the applicant, whose responsibility it is to supply the missing information. Incomplete applications which are not corrected within a

reasonable time by the applicant may be refused. If such applications are accepted, late fees may be assessed depending on the time required to process the application and assign it to an inspector before inspection is necessary. Priority will be given to applicants submitting complete applications by the date required.

Establishing Source of Seed

The association is required to have complete verification of the source, class, quantity (pounds or bushels) of Foundation or Registered seed used in establishing a field for the production of a class of Certified seed. In the case of protected or proprietary varieties, this includes a statement from the owner of the variety authorizing reproduction for planting purposes.

A. Establishing source and class of seed may be done by submitting with the application form, a Foundation or Registered tag or label removed from the containers of each different lot of seed that was planted.

B. For Registered seed purchased in the bulk, a purchasers' copy of the completed Bulk Transfer Certificate may be submitted.

C. A grower planting his own Registered seed need not submit tags. An official seed test report or a completed Bulk Transfer Certificate made out to himself is required.

D. When a lot of seed is downgraded from the Registered class to the Certified class for reasons other than genetic factors, the seed may retain the Registered classification when used as planting stock by the original applicant.

Field Inspection - Varietal Purity Only

A. Seed can be Certified for varietal purity only if the owner of a variety so specifies. For such varieties, only standards which affect genetic purity will be applied. All seed producers of a given variety will be required to certify it for genetic purity or for genetic and mechanical quality standards according to the procedure elected by the variety owner.

B. Individual lots to be exported from South Dakota can be certified for varietal purity only. The applicant must specify the intended destination and the seed must meet the minimum Certified seed standards of the state or country of destination.

C. The association will make one or more field inspections per field depending upon when the genetic purity and identity can best be determined.

D. The applicant must rogue each field, if necessary, for off-type plants before inspection. Off-type plants should be carried out of the field to prevent contamination.

E. All fields must meet the isolation and land requirements for the specific crop being certified to prevent cross-pollination, varietal mixtures and mechanical mixtures. (See specific standards for each crop.)

F. A field inspection report will be given to the applicant after a field has been inspected.

G. Certification tags of seed certified for varietal purity only will state "Certified for Genetic Purity Only."

Maintaining Identity of Seed

Field inspected seed must be positively identified at all times. Accurate records on bins containing bulk lots of seed (cleaned or uncleaned) must be identified either by a bin number or by lot numbers and variety of the seed in the bin. Bags must be identified by a stenciled lot number or identification tag securely fastened to the bag. This applies not only to recognized conditioners but to growers as well if seed for certification is conditioned by that grower.

Certification Records

The applicant must keep accurate records of the amount of seed harvested from each field (not necessarily actual weights, but number of truck loads, bins, bags, etc.), and where the seed is stored or taken for conditioning. Seed conditioners must keep records for each lot brought into their plants including:

A. Name and address of owner of seed.
B. Number or other identification of field(s).
C. Amount (weight, if possible) of uncleaned seed.
D. Date received.
E. Assigned bin number.
F. Condition of seed (if high moisture, excess weeds, etc.).
G. Weight and/or number of bags of cleaned seed.
H. Date of conditioning.
I. Certification number placed on bags.
J. If cleaned lots are blended, approximate weight of each component blended. (See page "Blending Lots of Seed".

A file sample of each lot of seed conditioned should be maintained. These records should be kept in a record book readily accessible for inspection by authorized persons. The records must be kept on file for three years. The file samples should be kept for at least one year after the lot has been completely sold. The South Dakota Crop Improvement Association reserves the right to examine all records of the applicant pertaining to seed lots eligible for certification.

Seed Lot Size

Seed lots are limited to the maximum amount of 30,000 bushels effective July 1st, 2025.

Requirements of Certifying Agency for Training Seed Producers

The certifying agency shall set up standards and qualifications for seed producers and will carry on such educational work as may be necessary to instruct producers thoroughly. (Refer to Memorandum of Agreement Concerning Seed Increases of New Varieties.)

Handling Crop Prior to Inspection

If necessary, the applicant must rogue off-type plants, objectionable other crop plants and problem weeds prior to field inspection.

Qualifications for Inspectors

Inspectors doing technical work shall have had the necessary technical training to enable them to do skillful and efficient work.

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 plant diseases which are enumerated in the individual crop standards. The representative sample of the finished seed crop is to be subjected to laboratory examination for diseases when such tests are available.

Seed House or Bin Inspection of Seed

One or more inspections of harvested lots of seed from inspected fields may be made at any time by representatives of the certifying agency who shall have authority to reject for certification any lot not properly protected from mixture or improperly identified.

Seed Sampling and Testing

A. 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 (AOSA). The South Dakota Crop Improvement Association designates the SDSU Seed Testing Lab as the Official Laboratory for seed testing purposes.

B. Sampling Frequency Table

# bags in lot	7	10	23	50	100	200	300	400
# bags to sample	6	6	7	10	15	25	30	30

For lots of more than six (6) bags, sample five (5) bags plus at least 10% of the number of bags in the lot. Numbers with decimals should be rounded to the nearest whole number. Regardless of the size of the lot, it is not necessary to sample more than 30 bags. For purposes of determining sampling frequency, utilize 50 pounds as the bag size in all cases. If the seed is in bulk, take at least as many cores or handfuls as if the same quantity of seed were in 50 lb. bags. Take the cores or handfuls from well distributed points throughout the bulk.

C. Sampling during conditioning

1. Automatic mechanical devices may be used to continually or intermittently draw a representative sample as the seed lot is conditioned, or
2. Portions of the conditioned seed may be drawn intermittently by hand as seed is conditioned to form a composite sample that is representative of the seed lot.

D. When submitting seed samples for lab analysis, the sample containers must be completely identified including variety, seed class, applicant's name, tests to be performed, and other information as requested by the SDCIA.

E. All seed will be tested in accordance with the procedures prescribed by the most recent edition of "Rules for Testing Seeds" issued by the Association of Official Seed Analysts or other applicable testing methods as requested.

A full sample bag approximately two-quarts or a one pint sample of alfalfa and/or other small seeds must be sent to the South Dakota Seed Certification Service for laboratory analysis to determine genetic purity, mechanical purity and germination of the seed. A representative sample of the seed shall be drawn by the producer or conditioner from the conditioned seed lot. All Certified seed sold must meet the analysis of the representative sample submitted to the laboratory. The grower and/or conditioner is responsible for the proper labeling of the seed; therefore, a representative and not a hand-picked sample must be submitted for analysis. **Seed from a field which has passed field**

inspection but from which a sample has not been submitted thereafter cannot be eligible for certification.

Labeling of All Classes of Certified Seed

A. All classes of Certified seed when offered for sale shall have an official certification label affixed to each container. Labels other than those printed on the containers shall be attached to containers in such a manner that removal and re-attachment will be obvious. In emergency situations with approval of the Certification office a Bulk Transfer Certificate may be used in lieu of tags for mini bulk bagged seed to be planted by the purchaser.

B. The Certified seed tag which is attached to the bag attests to the genetic identity of the seed contained therein. This tag shall identify the variety name, kind and class of seed, and lot number. For seed sold in bulk this information shall be provided on the Bulk Transfer Certificate. The official tag colors for classes of Certified seed will be: Foundation seed, white label; Registered seed, purple label; Certified seed, blue label.

C. The official certification label may be pre-printed directly on the container with prior approval of the Certification office. The conditioner must maintain a strict accounting of all the containers which are used as well as inventory held. This information must be supplied to the Seed Certification office.

Bulk Certification

Certified, Registered and Foundation[1] seed may be sold in bulk subject to the following regulations: Bulk seed, as defined for the purpose of these standards, shall refer to any quantity of seed confined to any size structure or container which is not possible or feasible to seal and transport. Re: seed in a storage bin, unbagged loose seed on a wagon or truck, etc.

[1] *Foundation seed is approved for sale in Bulk mini-bags which require a tag and seal.*

A. All field and seed standards applying to bagged seed shall also apply to bulk Certified seed.

B. Classes of Certified seed may be sold in bulk by an approved retail seed facility or by the applicant producer. A maximum of two sales is permitted except as noted in (3) below.

1. From applicant producer to an approved bulk retailer or consumer.
2. From approved bulk retailer to consumer.
3. From an approved bulk retailer to second approved bulk retailer to the consumer.

C. Bulk Registered seed to be eligible for recertification must be sold by the applicant producer or by an approved conditioner directly to the Certified seed producer. A maximum of two sales is permitted except as noted in (3) above.

D. It is the seller's responsibility to:

1. Handle seed in a manner to prevent mixtures and contamination.
2. Supply seed that is representative of the seed tested and approved for certification.
3. See that all bins, augers, conveyors, and other equipment are adequately cleaned before handling classes of Certified seed.
4. Determine that the vehicle receiving bulk Certified seed is clean. If the receiving vehicle is not clean, a statement to that effect is to be noted on Bulk Transfer Certificate.
5. Keep a sample representing each lot of bulk Certified seed sold.

6. Official CERTIFIED SEED TEST REPORTS must be maintained on each lot.
7. Give a completed Bulk Transfer Certificate to the seed purchaser and send the original to the certification office. Retain a copy for seller's records.

E. It is the buyer's responsibility to provide a clean vehicle or bulk receptacle and to maintain purity of the seed after it has been loaded into the buyer's vehicle.

F. No certification tags will be issued as the completed Bulk Transfer Certificate takes the place of the Certified seed tag. The complete seed analysis will be printed on the certificate except when the applicant sells uncleaned field approved seed to an approved conditioner for cleaning and completion of certification. The buyer should receive a certificate for each lot of bulk Certified seed purchased. A copy of the Bulk Transfer Certificate must be supplied to the certification office for out of state sales on uncleaned seed before the conditioner will be allowed to complete certification

G. Retail bulk seed facilities must be approved by the certifying agency before Certified seed can be handled in bulk. Such facilities may be part of a seed conditioning plant or may be approved only for handling bulk Certified seed. Before approval, all procedures for receiving, storing, dispensing and record keeping must be inspected. The applicant must demonstrate acceptable procedures for maintaining purity and identity of bulk Certified seed. Application forms for such approval must be submitted to the certification office. Plant inspection reports are reviewed by the South Dakota Crop Improvement Association subcommittee on approved conditioners and final approval is determined by the South Dakota Crop Improvement Association Board. An annual fee, due December 15th, will be charged on all Approved Bulk Seed Retail Facilities in good standing to cover the cost of periodic inspections.

H. For all bulk Certified seed:
1. A separate storage bin must be available for each variety that will be sold in bulk. The bin must be cleaned and reinspected before changing to another variety.
2. All bins, augers, conveyors and other equipment must be cleaned before storage or handling Certified seed.
3. All bins must be clearly and prominently marked.
4. All bin openings must be closed to prevent contamination, except when seed is being put in or removed from the bin.

I. The following records must be maintained:
1. Amount of seed grown and conditioned or purchased for bulk sale.
2. Amount of bulk Certified seed sold by variety and lot number.
3. A current inventory record of seed available for sale for each variety.

J. One lot number will be assigned to each bin per filling. The maximum lot size is the bin capacity.

K. Bulk Certified seed shall not move through unapproved commercial grain handling facilities.

Substandard Seed in Emergency Situations

It is recognized that in emergency situations, such as unfavorable weather conditions, seed necessary for the advancement of crop improvement would be lost if regular certification standards were adhered to. Therefore, under such circumstances, seed failing to meet certification standards in factors other than those affecting genetic purity may be Certified providing there is no injury to

the reputation of Certified seed. Such seed will carry the regular certification tag with the word "Substandard" and then the reason.

Publication of and Adherence to Standards and Procedures

All standards and procedures of Seed Certification shall be available in published form, and a copy thereof filed with the South Dakota Secretary of Agriculture and Chief Executive Officer of the Association of Official Seed Certifying Agencies within two months of adoption.

Prohibited and Restricted Weed Seeds

Prohibited and restricted weed seeds as outlined in the specific standards for each crop shall be construed to mean the seed of those weeds defined by the state seed law as "Prohibited Noxious Weed Seed" and "Restricted Noxious Weed Seed".

PROHIBITED NOXIOUS WEED SEED[1]

field bindweed . . . . . *(Convolvulus arvensis)*
leafy spurge . . . . . *(Euphorbia esula and E.x pseudovirgata)*
Russian knapweed . . . . . *(Centaurea repens)*
hoary cress . . . . . *(Cardaria draba)*
perennial sow thistle . . . . . *(Sonchus arvensis)*
Canada thistle . . . . . *(Cirsium arvense)*
Palmer amaranth. . . . . *(Amaranthus palmeri)*
horse nettle . . . . . *(Solanum carolinense)*

RESTRICTED NOXIOUS WEED SEED[1]

wild oats . . . . . *(Avena fatua)*
dodder . . . . . *(Cuscuta spp.)*
wild mustard . . . . . *(Brassica kaber, syn. Sinapis arvensis, B. nigra and B. juncea)*
hedge bindweed . . . . . *(Calystegia sepium)*
wild carrot . . . . . *(Daucus carota)*
field pennycress. . . . . *(Thlaspi arvense)*
annual bluegrass . . . . . *(Poa annua)*
spotted knapweed . . . . . *(Centaurea maculosa)*
giant foxtail . . . . . *(Setaria faberi)*
musk thistle. . . . . *(Carduus nutans)*
plumeless thistle. . . . . *(Carduus acanthoides)*
quackgrass. . . . . *(Elymus repens)*

[1]Please Note! State Law regulating weed <u>plant</u> species and the State Seed law regulating weed <u>seed</u> in planting stock seed in this state may differ.

Complying with Federal and State Seed Laws

Responsibility for any obligation arising from the sale or shipment of seed which has been Certified rests with the grower or subsequent handler making the sale or shipment.

Blending Lots of Seed

Different lots of seed from fields that have passed field inspection of the same crop variety produced by one or more growers may be blended, provided:

A. Prior approval is obtained from the Seed Certification Service before the blend is made; the Bulk Transfer Certificate (form furnished on request) is filled out by the grower.

B. There is adequate equipment to blend the seed uniformly.

C. All individual lots of seed going into the blend have passed field inspection by the Seed Certification Service to determine eligibility for certification.

D. The party making the blend must keep accurate records, weights and samples of the individual lots making up the blend. This record must be furnished to the Seed Certification Service to be kept with the lot record of the blend.

E. A lot number shall be assigned to each blend by the Certification office at the time the blend is to be Certified.

F. The party or parties making the blend assume all responsibility in case the seed fails to qualify for certification.

G. Blends of the same kind and variety but different seed class will automatically be classified with the lower of the classes in the blend regardless of the proportion.

Interagency Certification

The Seed Certification Service is in a position to service any Certified seed regardless of the state in which it originated. Many times seed dealers have carry-over seed certified in another state which must either be retagged or retested, or both. In cases where the original tags must be removed, a new Interagency tag can be issued providing the analysis of the seed still complies with certification requirements in South Dakota.

A. Interagency certification is the participation of two or more official seed certification agencies in the completion of certification in South Dakota for seed which has been field inspected or Certified in another state or AOSCA affiliate.

B. Seed to be recognized for interagency certification must be received in containers carrying official certification labels; or if for further conditioning and final certification, evidence of its eligibility from the official certifying agency in the state or country of origin together with the following information must be supplied on a **CERTIFICATE OF TRANSFER FOR SEED PENDING CERTIFICATION**:

1. Variety and kind
2. Quantity of seed -- pounds or bushels
3. Class of Certified seed shipment is eligible for
4. Inspection or lot number traceable to the original applicant and to the records of the agency making the field inspection.

C. A lot of bulk seed which has passed field inspection or is completely certified by another official certification agency may be sold and/or moved into South Dakota in bulk for further conditioning and/or completion of certification, provided:

1. Prior arrangements for moving the seed are made with and approved by the cooperating certification agencies.
2. An official Bulk Transfer Certificate is filed by the original applicant for certification of the seed with the South Dakota Crop Improvement Association.

D. Interagency labels shall clearly identify the certifying agencies involved. In addition, the variety, kind, class and lot numbers will be shown on tags which are serially numbered. Each bag of seed must have an official label attached in a manner that prevents removal and reattachment without tampering being obvious.

E. All expenses incurred for interagency certification will be paid by the applicant (labeler).

O.E.C.D. Seed Certification Schemes

A. Information regarding procedures for participating in the Organization for Economic Cooperation and Development (O.E.C.D.) is available from the South Dakota Crop Improvement Association, which is the designated authority for O.E.C.D. Certification in South Dakota. Contact the South Dakota Crop Improvement Association office for information and assistance.

B. The O.E.C.D. is an international organization having national governments as its members. Under its sponsorship minimum rules and directions have been established to assist international trade in seed of known genetic purity. In the United States, USDA/AMS has been assigned responsibility of implementing the seed schemes among the states participating.

Seed Production Report and Sales Fee

A. An applicant shall be required to submit a complete report on the forms supplied by the Certification office on production and final distribution (disposition) of seed harvested from inspected fields after the end of the normal seed sales season.

B. Sales Fee- Public Developed, Non-Royalty Varieties; An applicant will remit to the association office at the end of the sales season, a sales fee of 10¢ per bushel of seed sold. The sales fee is assessed on all bushels of seed sold FOR SEEDING PURPOSES from inspected and approved fields even though the grower may for any reason fail to complete final certification of the crop.

C. Sales Fee- Private Developed, Varieties; An applicant will remit to the association office at the end of the sales season, a sales fee of 5¢ per bushel of seed sold. The sales fee is assessed on all bushels of seed sold FOR SEEDING PURPOSES from inspected and approved fields even though the grower may for any reason fail to complete final certification of the crop.

D. Royalty/Variety Development Fee; Assessment as per agreement on such varieties will require the applicant to complete forms furnished for this purpose and remit the fees assessed based on seed sold. In some cases a grower's own production which is used to produce certified seed for resale is also assessed a user fee.

E. Production reports and any applicable sales fees are due when sold and the grower or applicant receives payment. Deadline for reporting is as follows:

1. Spring planted crops are due by June 15th (in the year following production.)
2. Fall planted crops are due by November 15th (in the year following production.)
3. All other crops not covered above are due December 31st (in the year following production).

F. **Late Reports; The association reserves the right to suspend an applicant's eligibility for participation in the Seed Certification program if production reports and any applicable sales fee have not been received within four months of the established deadline dates.**

Carryover Seed

The production/inventory report (Form E) must state the amount of seed being carried over to the next planting season from each field/seed lot that passed field inspection.

A. Certifiable seed carried over in bulk or in untagged bags must be conditioned, tested and labeled in accordance with certification procedures before being sold as a class of Certified seed.

B. All Certified seed carried over in bulk or in bags labeled with certification tags must be resampled and retested for germination to determine eligibility for sale under state and federal seed laws.

Certification of Other Crops

Certification of crops not listed in this manual will be governed by standards established by the Association of Official Seed Certifying Agencies (AOSCA). Copies of such standards will be made available to individual applicants upon request.

Approved Certified Seed Conditioning Plants

An Approved Seed Conditioner is any individual, partnership, cooperative or corporation that buys, conditions and completes certification requirements on lots of seed from fields that have passed field inspection and is approved and recommended by the SD Crop Improvement Association for conditioning certifiable seed.

In order to become an Approved Seed Conditioner an application shall be completed and submitted to the Seed Certification Service, South Dakota Crop Improvement Association, South Dakota State University, 2380 Research Park Way, Suite 136, Brookings, South Dakota 57006. Application blanks are available upon request and shall be completed and returned together with the required initial inspection fee. An inspection of the seed plant will be made by an official designated by the Seed Certification Office. The inspection report will be forwarded to the South Dakota Crop Improvement Association Seed Issues Committee.

All (accepted) conditioners designated as Approved Seed Conditioners must have been recommended by the South Dakota Crop Improvement Association Seed Issues Committee and approved by the South Dakota Crop Improvement Association Board of Directors. An annual fee due December 15th will be charged on all Approved Conditioning Plants in good standing to cover the cost of periodic inspections.

Seed Certification Standards

Specific Crop Standards

Alfalfa and Trefoil

I. Classes of Seed

A. **Foundation Seed**

Fields producing Foundation seed shall be on land on which no alfalfa was grown or planted during four years prior to the one in which the present stand was planted.

B. **Registered Seed**

Fields producing Registered seed shall be planted with Foundation seed on land on which no alfalfa was grown or planted during the three years prior to the one in which the present stand was planted.

C. **Certified Seed**

Fields producing Certified seed shall be planted with Foundation or Registered seed on land on which no alfalfa was grown or planted during the year prior to the one in which the present stand was planted.

II. Handling of the Crop Prior to Inspection

Rouging of off-type plants, sweet clover and dodder will be required prior to official inspection.

III. Field Inspections

Each year that a seed crop is produced for certification, at least one official inspection shall be made prior to harvest. The inspection shall be made when the crop is in bloom.

IV. Alfalfa Field Standards

A. A portion of a field may be Certified. A clear line of demarcation shall be established between the certified and non-certified portion of the field.

B. Volunteer plants shall be cause for rejection of a seed field.

C. As an additional precaution, no manure or other contaminating materials may be applied during the establishment and productive period of the stand.

Factor	Foundation	Registered	Certified
Other varieties*	.10%	.25%	1.00%
Other crops (inseparable sweet clover)	None	.25%	.50%
Isolation**: Fields less than 5 acres	900'	450'	165'
Fields 5 acres or more	600'	300'	165'

* Other varieties shall be considered to include plants that can be differentiated from the variety that is being inspected.

** Isolation: A field producing Foundation, Registered or Certified seed must have minimum isolation distances from fields of any other variety or fields of the same variety that do not meet the varietal purity requirements for certification as shown in the table. Isolation distances between Certified classes of the same variety may be reduced to ten feet regardless of class or size of the field.

V. Alfalfa Land Requirements and Length of Stand Limitations

Land must have been free of all alfalfa for at least four years prior to seeding to produce Foundation, three years for Registered, one year for Certified. Length of stand limitations on a variety for both inside and outside its region of adaptation (AOSCA Genetic and Crop Standards) shall be specified by the originator or designee. Seed production outside the region of adaptation shall not exceed six years unless otherwise specified. Alfalfa fields not inspected for certification two or more years are ineligible for certification.

VI. Seed Samples and Laboratory Analysis

An official laboratory analysis shall be made of a representative sample of each lot of seed.

VII. Seed Standards

Factor	Foundation	Registered	Certified
Pure seed (minimum)	99.00%	99.00%	99.00%
Inert (maximum)	1.00%	1.00%	1.00%
Total other crop (maximum)	0.20%	0.35%	1.00%
Other crop seed (sweet clover)	None	90/lb.	180/lb.
Total weed seed (maximum)	.10%	.20%	.25%
Prohibited weed seed	None	None	None
Restricted weed seed	None	None	*9/lb
Other varieties (maximum)	.10%	.25%	1.00%
Total germination & hard seed (minimum)	80.00%	80.00%	80.00%

* One restricted noxious weed seed of field pennycress *(Thlaspi arvense)* or wild mustard *(Brassica spp.)* would be allowed in a 50 gram working sample of alfalfa in the Certified class only. No dodder would be allowed in any of the classes of Certified seed.

Buckwheat

I. Land Requirements

A crop of buckwheat 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.

II. Field Inspection
A. All field inspections of buckwheat will be made in the bloom stage.

B. A field harvested before inspection is made will not be eligible for certification.

III. Field Standards
A. Isolation
1. At the time of inspection, the field must be separated from fields of other crop kinds by a fence row, natural boundaries or by a strip at least ten feet wide which is either mowed, uncropped or planted to some other separable crop.
2. When it is necessary to remove a strip to obtain proper isolation, a part of the strip to be removed must be cut into the field to be inspected.
3. All buckwheat fields producing Certified seed must be isolated by at least 660 feet from buckwheat fields of any other variety or fields of the same variety that do not meet the varietal purity requirements for certification.

B. Roguing
1. All roguing must be done before field inspection is made. Rogued plants must not be left in the field to be harvested.
2. Patches of prohibited weeds must be either removed by cutting or must be controlled by other means so that no seed is produced.

C. Specific Requirements

	Maximum Tolerance		
Factor	**Foundation**	**Registered**	**Certified**
Other varieties*	1:10,000	1:5,000	1:2,000
Inseparable other crop seed	1:10,000	1:7,500	1:5,000
Prohibited weeds**	None	None	None

*Other varieties shall be considered to include plants that can be differentiated from the variety that is being inspected. However, other varieties shall not include variations which are characteristic of the variety.
** Includes only field bindweed, leafy spurge and Russian knapweed. The tolerance for other prohibited weeds in the field will be determined by the inspector on the basis of stages of development of both the crop and the weed.

IV. Seed Standards

Factor	Foundation	Registered	Certified
Pure seed (minimum)	99.00%	99.00%	99.00%
Total weed seed (maximum)	.05%	.05%	.10%
Other varieties*	.01%	.01%	.01%
Other crop seed (maximum)	1 per 2 lbs	1 per lb.	3 per lb.
Inert matter (maximum)**	1.00%	1.00%	1.00%
Prohibited noxious weed seed	None	None	None
Restricted noxious weed seed (maximum)***	1 per 4 lbs	1 per 2 lbs.	2 per lb.
Germination	85.00%	85.00%	85.00%
Moisture (maximum)****	14.00%	14.00%	14.00%

*Other varieties shall not include variations which are characteristic of the variety.
** Foreign matter other than broken seed shall not exceed 0.2%.
*** See restricted noxious weeds. Restricted noxious weed seed and rate of occurrence must be listed on the analysis label.
**** Effective through December 31.

Field Bean

I. Land Requirements

A. A crop will not be eligible for certification if planted on land that was in any class of field beans the preceding two years or soybeans the preceding year.
B. A field on which bacterial blight has been found will not be eligible to grow certified beans until it has been cropped three cropping seasons to crops other than beans and soybeans.
C. Dry land fields planted in rows closer than 18 inches and irrigated fields planted in rows closer than 24 inches shall not be eligible for certification.

II. Field Inspections

Three inspections shall be made for off-type and diseased plants by the certifying agency during the growing season.

III. Field Standards

A. The unit of certification shall be a field, or a portion of a field, separated from any other bean field by a definite boundary not in beans at least ten feet wide.
B. Poor stands, poor vigor, lack of uniformity, excess weeds or conditions which are apt to make inspection inaccurate shall be cause for rejection.

C. Specific Requirements

	Maximum Tolerance		
Factor	**Foundation**	**Registered**	**Certified**
Other varieties	None	.05%	.10%
Inseparable other crop seed	None	None	None
Bacterial bean blights & anthracnose	None	None	None
Mosaic	None	.05%	.10%
Wilt (bacterial)	None	.01%	.02%

IV. Seed Standards

Factor	**Foundation**	**Registered**	**Certified**
Pure seed (minimum)	99.00%	99.00%	99.00%
Inert matter (maximum)	1.00%	1.00%	1.00%
Other varieties (maximum)	None	.05%	.10%
Other crop seed (maximum)	None	None	None
Badly discolored (maximum)	---	1.00%	1.00%
Noxious weed seed	None	None	None
Common weed seed	None	None	.10%
Germination (minimum)	---	85.00%	85.00%
Bacterial blight infected seed (maximum)*	None	None	None

* Final certification will be contingent on the results of a seedling blight test. The grower shall be responsible for having a bacterial blight test on the harvested seed of each field of dry edible beans. A seed treatment to reduce surface bacterial contamination of the seed coat is recommended.

V. Tags

Each bag of seed sold as Certified must be packed in new bags and bear the official tag or label issued by the South Dakota Crop Improvement Association.

Field Peas, Chickpeas, and Lentils

I. Land requirements.

A crop will not be eligible for certification if planted on land that was in any class of the same type/kind of crop the preceding two years or soybeans the preceding year.

II. Field Inspections

Field inspections on field peas, chickpeas, or lentils shall be made for off-type and diseased plants by the certifying agency during the growing season.

III. Field Standards

A. The unit of certification shall be a field, or a portion of a field, separated from any field by a definite boundary not in the same crop at least ten feet wide.

B. Poor stands, poor vigor, lack of uniformity, excess weeds or conditions which are apt to make inspection inaccurate shall be cause for rejection.

C. Specific Requirements (chickpeas, lentils).

	Maximum Tolerance		
Factor	Foundation	Registered	Certi□ed
Other varieties*	none	1:5,000	1:2,000
Corn and sun□ower plants bearing seed	none	none	none
Prohibited noxious weeds **	none	none	none
Objectionable weeds ***	none	none	none

*Other varieties shall be considered to include plants that can be differentiated from the variety that is being inspected. However, other varieties shall not include variations which are characteristic of the variety.

** Includes only field bindweed, leafy spurge and Russian knapweed. The tolerance for other prohibited weeds in the field will be determined by the inspector on the basis of stages of development of both the crop and the weed.

*** Objectionable weeds include nightshade species and cocklebur.

C.1. Specific requirements (Field peas).

	Maximum Tolerance		
Factor	Foundation	Registered	Certi□ed
Other varieties*	none	1:1,000	1:1,000
Other crops (inseparable)	none	none	none
Prohibited noxious weeds **	none	none	none

*Other varieties shall be considered to include plants that can be differentiated from the variety that is being inspected. However, other varieties shall not include variations which are characteristic of the variety.

** Includes only field bindweed, leafy spurge and Russian knapweed. The tolerance for other prohibited weeds in the field will be determined by the inspector on the basis of stages of development of both the crop and the weed.

IV. Seed Standards

Factor	Foundation	Registered	Certified
Pure seed (minimum)	98.00%	98.00%	98.00%
Inert matter (maximum)	2.00%	2.00%	2.00%
Total weed seed (maximum)	5/lb.	5/lb.	5/lb.
Other varieties	None	.01%	.01%
Other crop seed (maximum)	None	1 per lb.	3 per lb.
Noxious or Objectionable weed seed	None	None	None
Germination	85.00%	85.00%	85.00%

Grass

I. Land Requirements

A. A field to be eligible for the production of Foundation seed must not have grown or been seeded to the same species during the previous five years.
B. A field to be eligible for the production of Registered or Certified seed must not have grown or been seeded to the same species during the previous year unless the crop was a Certified class of the same variety.
C. When not specified by the developer or owner of a variety, the certifying agency will determine the length of time the fields will be eligible for certification.
D. Fields must be rogued prior to harvest to remove off-type plants and other grasses or weeds, the seeds of which cannot be separated by mechanical equipment. Rogued material must be removed from the field if it is sufficiently mature to cause contamination. Exceptionally weedy areas should be removed prior to harvest.

II. Field Inspection

A. A field inspection must be made each year that a class of Certified seed is to be harvested from the field.
B. The field will be inspected after the crop is fully headed but before it is cut. The seed from fields harvested before an inspection is made is automatically ineligible for that year.

III. Field Standards

A. The seed field is the unit for certification. A portion of a field may be accepted for certification if the boundary is well defined. A fence or a strip of ground at least five feet wide which is mowed, uncropped or planted to some crop other than the kind in question constitutes a field boundary.

B. Isolation

A grass seed field to be eligible for the production of one of the classes of Certified seed must be isolated from any other strain or strains of the same species in bloom at the same time in accordance with the requirements given in the following table:

	MINIMUM ISOLATION DISTANCE* REQUIRED IN (FEET)				
	Symbol	**Foundation**	**Registered**	**Certified**	****Border to be Removed**
All cross-pollinated species	C	900	300	165	0
		600	225	100	9
		450	150	75	15
Strains entirely apomictic	A	60	30	15	0
		30	15	15	9
Highly self-fertile species	S	60	30	15	0
		30	15	15	9

* Isolation between classes of the same variety may be reduced to 25% of the distance otherwise required.

** Area in feet to be removed from border of field after flowering and not used for seed. (Applies only to fields five acres or more).

When it is necessary to remove a strip to provide isolation, this strip may be:

1. Mowed in the contaminating field if it is done before the plants in the seed producing field start blooming.
2. Mowed in the field to be Certified if done after the plants in the seed producing field have bloomed.

C. Specific Requirements--Field Standards

	Foundation	**Registered**	**Certified**
Other varieties and off-type plants	0.1% (1:1000)	1.0% (1:100)	2.0% (1:50)
Prohibited noxious weed seed	None	None	None
Other crop plants	0.1% (1:1000)	0.5% (1:200)	0.5% (1:200)

IV. Seed Standards

Refer below for specific seed standards for the non-chaffy grass seed species.

No Prohibited Weed Seed is allowed in any class.

	Foundation & Registered	Certified
Other varieties (maximum)	**.10%**	**1.00%**

MINIMUM					MAXIMUM											
Species	**Type of Reproduction**	**Percent Pure Seed**		**Percent Germination All Classes ****	**Percent Other Crop**		**Percent Other Grass**		**Percent Inert Matter**		**Restricted Weed Seeds**		**Percent Total Weed Seed**		**Percent Annual Brome***	
		F & R	**C**		**F & R**	**C**	**F & R**	**C**	**F & R**	**C**	**F & R**	**C**	**F & R**	**C**	**F & R**	**C**
Bromegrass	C	90	85	80%	1.0	1.0	0.1	2.0	10	15	9/lb.	45/lb.	.25	1.0	.15	0.5
Crested Wheatgrass	C	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Pubescent Wheatgrass	C	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Slender Wheatgrass	S	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Intermediate Wheatgrass	C	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Tall Wheatgrass	C	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Western Wheatgrass	C	85	85	60%	0.2	1.0	0.1	2.0	15	15	9/lb.	45/lb.	.25	0.5	.15	0.5
Russian Wildrye	C	90	90	80%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Creeping Foxtail	C	75	70	80%	0.2	1.0	0.1	2.0	20	20	9/lb.	45/lb.	.25	0.5	.15	0.5
Reed Canarygrass	C	95	90	75%	0.2	1.0	0.1	2.0	5	10	9/lb.	45/lb.	.25	0.5	.15	0.5
Switchgrass	C	90	90	50%	0.2	1.0	0.1	2.0	10	10	9/lb.	45/lb.	.25	1.0	.15	0.5

*Japanese chess, hairy chess, downy brome, cheat

** Germination % equals normal germination plus dormant seed

Chaffy Grass Seed Species

Field and Seed Certification Standards for the chaffy grasses (Bluestem (*Andropogan and Schizachyrium spp.*); buffalograss (*Buchloe spp.*); grama(*Bouteloua spp.*); and Indiangrass (*Sorghastrum nutans*))will be governed by standards established by the Association of Official Seed Certifying Agencies (AOSCA). Copies of specific standards are available from the Certification office to individual applicants upon request.

Hybrid Corn Certification Standards (Commercial)

I. Definitions

A hybrid is one to be planted for any use except seed production. It may be any of the following:

1. A single cross, i.e., a first generation cross between two inbred lines.
2. A double cross, i.e., the first generation of a cross between two single crosses.
3. A three way cross, i.e., the first generation of a cross between a single cross and an inbred line.
4. A topcross, i.e., the first generation of a cross between an inbred line and an open-pollinated variety, or the first generation of a cross between a single cross and an open-pollinated variety.

II. Eligibility of Stock Seed

1. Only certified Foundation single-cross and Foundation back cross seed planted for the production of double-cross, single cross, three-way cross, or top-cross hybrids are eligible and they must have been officially certified by a recognized seed certifying agency.
2. Inbred line seed planted for the production of single cross or three-way cross hybrid corn seed to be used for grain or forage production or for export must meet requirements for the definition of an inbred line and be certified. Evidence of eligibility shall be a Certification tag taken from the seed planted.
3. Only the class "Certified" is recognized.

III. FIELD INSPECTION

At least three field inspections shall be made in a manner approved by the Certifying Agency during the pollinating period.

IV. FIELD STANDARDS

A. Unit of Certification: Portions of an isolation may be treated as separate fields depending upon such things as: maturity differences, boundaries, waterways, roads, etc., if separate field inspection reports are necessary.

B. Isolation

1. The plot must be so located so that the seed of the female parent is not less than 660 feet from fields of sweet, pop, or other colored corn. When the contaminating source is other dent corn, the distance can be modified by the size of the crossing field and by the planting of border rows of pollen or male parent. The planting of pollen rows on the sides and ends of fields not adequately isolated from other corn is called buffering. Buffer rows shall have at least an average stand of plants and should be planted at the same time as the rest of the pollen parent. Natural barriers such as hills, trees, buildings or similar objects shall not be accepted in the place of buffers.
2. All buffer rows or any other adjacent hybrid seed parent will be inspected when necessary, at extra cost, to assure proper isolation.
3. The following table indicates the minimum buffer or border rows required for fields of various sizes when located at different distances from other corn:

Hybrid Corn Isolation Table			
Field Size Less than 20 acres* Minimum distance from other corn to the first seed parent plant (in feet)	Minimum Number of Border Rows of Male Parent Required	**Field Size 20 acres or more*** Minimum Distance from other corn to the first seed parent plant (in feet)	Minimum Number of Border Rows of Male Parent Required
660'	0	660'	0
570'	4	570'	2
490'	6	490'	2
410'	8	410'	4
330'	10	330'	6
270'	12	270'	8
210'	14	210'	10
150'	16	150'	12
90'	18	90'	14
< 90 '	24 [1]	< 90 '	16 [2]

[1] Minimum of 60 feet including border rows

[2] Minimum of 40 feet including border rows

* The buffering requirements shall be determined on the basis of total acreage of the seed parents within a single isolation using a common pollinator.

4. To illustrate the use of the table if a crossing field of 20 acres or less is 410 feet from the contaminating corn, then the number of buffer rows required is eight.

a. The above requirements for border rows apply to all sides of the crossing field exposed to contamination from another field, whether located directly opposite or diagonally to the sides of the crossing field.

b. More than one hybrid may be produced in an isolation, provided only one pollinator is used.

5. Dent sterile popcorn requires no isolation from dent corn.

6. The isolation distance required between a sweet corn pollen source and the seed parent may be administratively modified by the agency based on the size of the sweet corn pollen source, maturity dates, and other factors.

C. Differential Maturity Dates: Differential maturity dates are permitted for modifying isolation distances provided there are no receptive silks in the ear parent at the same time pollen is being shed in the contaminating field.

D. Nicking: If conditions arise in which the nicking of a seed field is questionable, certification of the field shall be subject to approval by the certifying agency.

E. Detasseling

1. Tassels shall be removed thoroughly enough that not more than 1.0 percent of the plants in seed rows on any one inspection, or not more than 2.0 percent as the total of any three inspections shall have shed pollen while more than 5.0 percent of the seed parent plants have receptive silks, such percentage to be determined on the basis of stalks large enough to be in the detasseling stage.

2. The following shall be used in defining a shedding tassel and a receptive silk:

a. In fertile fields, a shedding tassel shall be considered as shedding or having shed pollen when there are two inches or more of the exposed center spike and/or panicle branches showing exerted anther sacs. One fifth of a shedding tassel shall be

counted if a total of less than two inches of the center spike and/or panicle branches show exerted anther sacs.

b. In sterile fields, tassels shedding less than 50% pollen shall be counted as 1/10 of a full tassel. The exerted anther sacs on cytoplasmic male sterile seed parents must be shedding if classed as a shedding tassel.

c. Receptive silks shall be regarded as susceptible for fertilization when any fresh turgid silks are showing on the ear. As soon as a silk wilts it is regarded as fertilized, although it may not become brown or dry for one or two days after fertilization.

F. Male Sterile Ear Parent: Cytoplasmic male-sterile commercial hybrid corn seed shall be produced in accordance with the standards for the production of other commercial hybrid corn by either of two methods:

1. Seed of the normal fertile ear parent must be mixed with the seed of the male sterile ear parent of the same pedigree either by blending in the field at harvest or by size at processing time. The ratio of male sterile ear parent to normal ear parent seed shall not exceed 2:1.

2. The pollen parent must involve a certified pollen restoring line or lines so that not less than one third of the plants grown from hybrid corn seed produce pollen which appears to be normal in quantity and viability.

G. Volunteer Corn and Off-Type Plants

1. Pollen rows tassels of definitely off-type plants or of volunteer plants shall be removed thoroughly enough so that not more than .1% shall have shed pollen while more than 5% of the seed parent plants have receptive silks.

2. Seed rows the maximum number of volunteer corn and off-type plants shall not exceed .1% at the time of the last field inspection.

H. Determination of Hybridization and Genetic Purity Final Determination of hybridization and genetic purity may be determined using one of the following methods.

1. Growout testing One sample each of flats and rounds shall be submitted to the certifying agency for a winter purity test. At least 1,000 kernels per sample are required for testing.

2. Biochemical testing – One sample each of flats and rounds shall be submitted to the certifying agency for an electrophoretic isozyme analysis. At least 250 kernels per sample are required for testing. 100 seeds of each of the parental lines are also required.

VI. Seed Standards

A. Genetic

Factor	**Standard Certified Class**
Other varieties and off-types (max.)	0.5%
Off-textured kernels in opaque 2, flowery 2, and waxy (max.)	1.0%

B. Quality**

Factor	Recommended Standard
Pure seed (minimum)	99.0%
TOTAL other crops-including other varieties (maximum)	0.5%
TOTAL weed seed (maximum)	None
TOTAL inert matter (maximum)	1.0%
Germination (minimum)	90.0%
Moisture (maximum)	14.0%

** Quality standards listed here are recommendations only. Seed lots failing to meet the minimum quality standards will not be rejected for purposes of certification.

Hybrid Corn and Hybrid Sorghum (Production Inspected)

An inspection service is available to producers of commercial hybrids. This inspection is not certification since the pedigree is not revealed. The inspection will assure South Dakota farmers that the seed has been properly produced and conditioned. The inspection service is designated to serve as a third party Quality Assurance program to seedsmen in the production of hybrid seed corn and hybrid sorghum seed in South Dakota. The present minimum field and seed requirements for the production of Certified hybrid seed corn and hybrid sorghum seed will apply to "Production Inspected" seed.

Hybrid Sorghum

Standards for certification adopted by AOSCA for hybrid sorghum are available from the Seed Certification Office upon request.

Millet (Proso and Foxtail) (Self-Pollinated Species)

I. Application and Amplification of General Certification Standards

The General Seed Certification Standards are amplified as follows to apply to millet. Eligibility requirements: only the Foundation and Registered seed classes are eligible for recertification. The Certified class is not eligible to be recertified except in the case of an older variety for which Foundation seed is not being maintained.

II. Land Requirements

No other variety of millet may have been grown on the field the previous year except a crop of the same variety which was inspected and passed for certification.

III. Field Standards

A. Fields producing a class of Certified seed will be inspected before harvest when the seed begins to mature and/or take on color.

B. Isolation

A field shall be separated by a strip of ground adequate to prevent mechanical mixtures. The strip may be either mowed, uncropped or planted to some crop other than the kind being Certified.

C. Unit of Certification

The field shall be considered the unit of certification and a portion of a field can be accepted for certification provided that portion of the field meets the isolation requirements stated in B above.

D. Specific Requirements

Factor	Foundation	Registered	Certified
Other varieties (max.)	1:3,000	1:2,000	1:1,000
Inseparable other crops (max.)*	1:10,000	1:10,000	1:2,000
Noxious weeds whose seed is inseparable (max.)	None	None	None

* Inseparable other crops shall include crop plants, the seed of which cannot be thoroughly removed by usual methods of conditioning.

VI. Seed Standards

Factor	Foundation	Registered	Certified
Pure seed (minimum)	98.00%	98.00%	98.00%
Inert matter (maximum)	2.00%	2.00%	2.00%
Weed seed (maximum)	.05%	.25%	.25%
Noxious weed seed (maximum)	None	None	None
Total other crop seed (maximum)	.01%	.02%	.04%
Other varieties (maximum)	.05%	.10%	.20%
Other kinds (maximum)	.005%	.01%	.02%
Germination (minimum)	80.00%	80.00%	80.00%

Millet (Cross-Pollinated Species)

Standards for certification adopted by AOSCA for cross-pollinated millet are available from the Seed Certification Office upon request.

Wheat, Oats, Barley, Rye, Triticale and Flax

I. Land Requirements

Small grain intended for certification shall not be grown on land which produced the same kind of crop the previous year unless Certified seed of the same variety was planted.

II. Field Inspection

A field inspection must be made by an authorized inspector after the grain is fully headed and prior to harvest to make the necessary count for varietal purity, other crop plants, disease infection and weeds. Flax will be inspected when crop is in full bloom.

III. Field Standards

A. Unit of Certification

1. The field shall be considered the unit for certification, and a field can be divided for the purpose of certification. A strip of ground sufficient in width to prevent mechanical mixture which is either mowed, uncropped, swathed or planted to some crop other than the kind in question shall constitute a field boundary for the purpose of these standards. When it is necessary to remove a strip to obtain proper isolation, the part to be removed must be cut from the field that is to be inspected by a distance adequate to prevent mechanical mixture.

B. Specific Requirements

1. **ISOLATION**

a. Wheat, Oats, Barley and Flax: A field producing Foundation or Registered classes of Certified seed must be isolated at least ten feet from wheat fields of any other variety or fields of the same variety that do not meet the varietal purity requirements of the class of seed inspected. For different classes of Certified seed of the same variety grown next to each other, a strip ten feet in width must be cut from the field representing the seed*** class closest to Breeder seed. Seed from this buffer strip may be harvested along with the seed representing the lower of the two adjoining seed classes.

b. Triticale: The same standard would apply to Foundation and Registered classes of triticale with respect to isolation from other triticale.

c. Rye: A field producing Foundation seed must be isolated by at least 60 rods (990 feet) while Registered and Certified seed fields must be isolated by at least 40 rods (660 feet) from rye fields of any other variety or fields of the same variety that do not meet the varietal purity requirements of the class of seed inspected.

Factor	Foundation	Registered	Certified
Other varieties (maximum)*	.02%(1:5000)	.03%(1:3000)	.1% (1:1000)
Inseparable other crop seed**	.001% (1:100,000)	.01% (1:10,000)	.05% (1:2,000)
Noxious weeds whose seed is inseparable	None	None	None

* Other varieties shall be considered to include plants that can be differentiated from the variety that is being inspected. However, other varieties shall not include variations which are characteristic of the variety.

** Inseparable other crops shall include crop plants, the seed of which cannot be thoroughly removed by the usual methods of cleaning. Rye in winter wheat and barley in oats are well known examples. In some areas climatic conditions do not take care of winter grains in spring grains and vice versa. In such instances these must also be considered as "inseparable other crops." **No rye or Jointed Goatgrass is permitted in seed production fields of winter wheat.**

*** An uncropped strip of 1-3' must be present at the time of inspection between the two adjacent seed classes of the same variety to identify the boundary.

IV. Small Grain and Flax Seed Standards

	Pure Seed (Minimum)	*Other Distinguishable Varieties (Maximum)	** Other Small Grain Crops (Maximum)	***Inert Matter (Maximum)	Total Noxious Weeds	^Common Weed Seed	Germination (Minimum)
FOUNDATION							
Wheat	---	1 seed/lb.	1 seed/lb.	---	None	---	---
Oats	---	1 seed/lb.	1 seed/lb.	---	None	---	---
Barley	---	1 seed/lb.	1 seed/lb.	---	None	---	---
Rye	---	1 seed/lb.	1 seed/lb.	---	None	---	---
Triticale	---	1 seed/lb.	1 seed/lb.	---	None	---	---
Flax	---	--------	--------	---	None	---	---
REGISTERED							
Wheat++	98%	1 seed/lb.	1 seed/lb.	2%	None	.05%	85%
Oats	98%	1 seed/lb.	1 seed/lb.	2%	None	.05%	85%
Barley	98%	1 seed/lb.	1 seed/lb.	2%	None	.05%	85%
Rye	98%	1 seed/lb.	1 seed/lb.	2%	None	.05%	70%
Triticale	98%	1 seed/lb.	1 seed/lb.	2%	None	.05%	80%
Flax	98%	8 seeds/lb.	8 seeds/lb.	2%	None	.10%	80%
CERTIFIED							
Wheat+	97%	10 seeds/lb.	3 seeds/lb.	3%	None	0.1%	85%
Oats++	97%	10 seeds/lb.	3 seeds/lb.	3%	None	0.1%	85%
Barley	97%	10 seeds/lb.	3 seeds/lb.	3%	None	0.1%	85%
Rye	97%	10 seeds/lb.	3 seeds/lb.	3%	None	0.1%	70%
Triticale	97%	10 seeds/lb.	3 seeds/lb.	3%	None	0.1%	80%
Flax	97%	16 seeds/lb.	16 seeds/lb.	3%	None	0.1%	80%

* Other distinguishable varieties shall not include variations which are characteristic of the variety. Other distinguishable varieties shall be considered to include off-type seeds/plants that can be differentiated from the variety being analyzed.

** This does not apply to seeds of winter grains in spring grains and vice versa, except in such cases where climatic conditions do not take care of the situation. **No rye or Jointed Goatgrass is permitted in winter wheat. For Foundation and Registered winter wheat, spring wheat and oats no rye or triticale is permitted. Certified is allowed 1 per pound. If certified class contains 2-15 rye or triticale seeds it is moved to Certified Grade II.**

*** Wheat, barley or rye of the certified class shall not contain more than 2% inert matter other than broken seed.

^ **Weed seed is limited to 0.1% or the maximum of 10 seeds per pound in the certified class.**

+ Germination minimum for durum wheat is 80%.

++ Certified oats (Certified Grade II) may contain up to 15 seeds/lb of other crop seed and be sold only for forage production or reclamation seeding and labeled accordingly.

HYBRID WHEAT and HYBRID RYE

General requirements. The following genetic standards are applicable for the production of parental lines and hybrids of wheat and rye produced by comingling a cytoplasmic male-sterile seed parent and a fertility restorer line.

1. **Eligibility requirements for varieties**. Standards applicable to wheat and rye varieties apply to the production of pollinator lines.

2. **Definition of parental types**

    a. **Maintainer (B-line).** A line with normal fertile cytoplasm that is used as a pollinator to increase the Seed Parent.
    b. **Seed Parent (A-line).** A cytoplasmic male-sterile line (cms), that is genetically identical to the Maintainer line that when pollinated by a Restorer, produces hybrid seed.
    c. **Restorer (R-line)**. Any male fertile line possessing nuclear restoration genes used as a pollinator in the production of commercial hybrid seed.

3. **Eligible seed classes.**

    a. Only the Certified class is recognized in the production of commercial hybrid seed. A commercial hybrid is planted for any use except for seed production. To be certified, a commercial hybrid must be produced from Foundation class seed stocks. These seed stocks shall consist of male steriles, inbred lines, and/or hybrids.
    b. Only the Foundation class is recognized for parental lines.

Field inspection. Fields for the production of parental lines utilized in hybrid wheat and hybrid rye production shall be inspected as follows. Roguing to remove undesirable plants must be done prior to field inspection. Rogued plants must be removed from the field.

1. AxB production. Seed parents shall be inspected three times. The first inspection shall occur after heading but before anthesis to check for off-type plants. The second and third inspections shall be during anthesis to check for shedders in the seed parent, the presence of which shall immediately be communicated with the seed producer to allow for roguing.

2. Maintainers and Restorers. Male lines shall be inspected at least once for purity after the crop is fully headed.

3. Commercial hybrid production fields shall be inspected at least once.

Field standards

1. **Isolation.**

    a. Seed Parent increases (AxB). Fields or parts of fields acceptable for production

of seed parents to be used for the production of commercial hybrid seed must be so located that the seed parent is not less than 2,640 feet [804.67 meters] for wheat and 3,280 feet [1000 meters] for rye from fields of other kinds or varieties which could provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification. The A-line and B-line shall be separated by an unplanted strip of ground adequate to prevent mechanical mixture.

b. Maintainer and Restorer increases. Fields or parts of fields acceptable for production of pollinator lines must be so located that the line is not less than 30 feet [9 meters] for wheat and 660 feet [200 meters] for rye from fields of other kinds or varieties which could provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification. Prior to inspection, the field must be isolated from inseparable crops by a strip at least five feet wide to prevent mechanical contamination.

c. Commercial hybrids. Fields or parts of fields acceptable for production of commercial hybrid seed must be no less than 330 feet [100 meters] for wheat and 1,640 feet [500 meters] for rye from fields of other kinds or varieties which would provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification.

2. **Specific Field Standards.**

Factor	A-Line Foundation	B & R-Lines Foundation	Commercial Hybrid Certified
Pollen Shedders	1:3,000	N/A	NA
Other varieties*	1:3,000	1:3,000	1:3,000
Inseparable Other Crops	1:30,000	1:30,000	1:5,000
Prohibited noxious weed seeds**	none	none	none

* Other varieties include plants that can be differentiated from the variety being inspected, but shall not include variants which are characteristic of the variety.

** The tolerance for prohibited or objectionable weeds, or both, in the field will be determined by the inspector.

Seed standards.

Variety identification test is required for A, B and R-lines of wheat. Hybridity test is required on hybrid seed. Seed count required on all hybrids.

	Standards for Each Class	
	A, B, R-Lines	Commercial Hybrid
Factor	Foundation	Certified
Pure seed (minimum)	98.0 percent	98.0 percent
Hybridity (minimum)*	N/A	75%
Total weed seeds (maximum)	0.10 percent	0.10 percent
Other varieties **	0.005 percent	0.05 percent
Other crop seeds (maximum)	0.01 percent	0.08 percent
Inert matter (maximum) ***	2.0 percent	2.0 percent
Prohibited noxious weed seeds	none	none
Germination	80.0 percent	80.0 percent

*Hybridity will be determined by an acceptable method and test results shall be submitted to the agency with a declaration of the hybridity prior to final certification of each lot of spring cereals and within 160 days of harvest for winter cereals.

**Other varieties include plants that can be differentiated from the variety being inspected, but shall not include variants which are characteristic of the variety.

***Inert matter shall not include more than 0.5% of material other than seed fragments of the variety under consideration.

Soybeans

I. Land Requirements

Soybeans to be eligible for certification must be preceded by some crop other than soybeans unless Certified seed of the same variety was planted.

II. Field Inspections

Fields producing Foundation seed shall be inspected at flowering and a second inspection when the crop is approaching maturity when pod and pubescence color and other plant characteristics can be determined. Fields producing Certified seed shall be inspected at least once when the crop is approaching maturity, preferably after the leaves have dropped.

III. Isolation

Distance adequate to prevent mechanical mixture is necessary (five feet).

IV. Field Standards

Factor	Foundation	Registered	Certified
Other varieties (maximum)*	0.1% (1:1,000)	0.2% (1:500)	0.5% (1:200)
Inseparable other crop plants (seed)(max.)	None	1:5000	1:2000
Noxious or objectionable weeds**	None	None	None
Corn/Sunflower plants bearing seed***	None	None	None

* Other varieties shall be considered to include off-type plants that can be differentiated from the variety that is being inspected.
** Unless seeds can be readily removed in recleaning.
*** Either oil or confectionery sunflowers

V. Seed Standards

Factor	Foundation	Registered	Certified
Pure seed (minimum)	98.00%	98.00%	98.00%
Inert (maximum)	2.00%	2.00%	2.00%
Total weed seed (maximum)	5/lb.	5/lb.	5/lb.
Noxious or objectionable weed seed	None	None	None
Other crop seed (maximum)	None	3/lb.	3/lb.
Corn/Sunflower	None	None	1 per 4 lbs.
Other varieties (maximum)**	.10%	.20%	.50%
Germination (minimum)	80.00%	80.00%	80.00%
Moisture (maximum)***	15.00%	15.00%	15.00%

** Off-colored beans due to environmental factors shall not be considered other varieties.
*** Effective from harvest through December 31st.

Sunflower

I. General

A. The General Seed Certification Standards, are basic and are modified for sunflower as follows:
1. A commercial hybrid is one to be planted for any use except seed production.
2. Only the class "Certified" is recognized in seed of commercial hybrids.
3. The classes "Breeder" and "Foundation" shall be recognized for parental materials used for the production of commercial hybrids.
4. A commercial hybrid to be Certified must be produced from Breeder or Foundation seed stock approved by the certifying agency.

II. Land Requirements

A crop will not be eligible for certification if planted on land where sunflowers were grown the previous year.

III. Field Inspection -- Open Pollinated Varieties and Hybrids

At least three field inspections shall be made: one inspection during the bud to early bloom stage and two inspections during bloom.

IV. Field Standards

A. Flowering. In a crossing field for the production of Certified hybrid sunflower seed, at least 50% of the male parent plants must be flowering and producing pollen at the time the female parent is in full bloom. Female parent plants flowering and shedding pollen before the male parent plants are shedding pollen must be removed and disposed of in a manner that will prevent contamination.
B. Isolation. Fields to be used for the production of all classes of Certified seed must be isolated at least 5280 feet from other varieties, hybrids, strains, wild Helianthus species, volunteer sunflowers and non-certified crops of the same type.
C. The unit of certification shall be a field or a portion of a field separated by a strip at least ten feet wide which is either; mowed, uncropped or planted to some other separable crop.
D. Roguing. In increase fields of parental materials to be used for the production of commercial hybrids and in the male rows of commercial hybrid production fields, all off-types must be removed before pollination has taken place. The heads of rogued plants must be disposed of in a manner which will prevent their pollen from being disseminated. Corn plants bearing seed must be removed before harvest as well as other crops the seed of which are difficult to separate in the conditioning process.
E. Standards for seed-borne diseases in sunflowers are not specified; however, disease may be cause for rejection if the overall quality of the seed will be adversely affected.

F. **Off-types, all seed classes:**

	Ratio of Plants (maximum) Hybrids		
	Open-Pollinated Varieties	**Female Parent**	**Male Parent**
Wild-type branching		1:1,000	1:1,000
Purple plants		1:1,000	1:1,000
White seeded		1:1,000	1:1,000
*Total (including above types but not including pollen shedding plants in the female parent)	1:200	1:250	1:250
		Ratio of female:male rows in seed field	
		4:1 or more	3:1 or less
Pollen shedding plants in female parent		1:125	1:83

* Other varieties (off-types) shall be considered to include plants that can be differentiated from the variety that is being inspected. Other varieties shall not include variations which are characteristic of the variety.

V. Seed Standards

Factor	**Foundation**	**Registered**	**Certified**
Pure seed (minimum)	98.00%	98.00%	97.00%
Inert matter (maximum)	2.00%	2.00%	3.00%
Weed seed (maximum)	0.05%	0.05%	0.10%
Noxious weed seed	None	None	None
Other varieties (maximum)*	1/lb.	1/lb.	5/lb.
Other crop seed (maximum)	1 per 2 lbs.	1 per 2 lbs.	1 per lb.
Corn seed (maximum)	None	None	1 per lb.
Germination (minimum)	85.00%	85.00%	85.00%
Sclerotium	4/lb.	4/lb.	4/lb.

* Not more than two purple seeds or two white seeds per pound will be allowed in the Certified class. Other varieties shall not include variations which are characteristic of the variety.

VI. Pre-Control Test Standards

A. Samples from all Certified inbred and hybrid seed fields shall be entered in approved pre-control tests.

B. If field inspection shows one or more of the following, the applicant may request that seed certification be based on the percent of hybrids shown in the pre-control test:
- inadequate isolation
- too few male parent plants shedding pollen when female parent plants are receptive
- excess off-types not to include wild types
- excess pollen shedding plants in female parent

In such cases, 2000 plants must be observed in the pre-control test before hybrid seed can be Certified from fields with problems listed above.

VII. Post-Control Test Standards

Factor	**Maximum Permitted***	
	Hybrid	**Inbred**
Sterile plants	5.0%	--
Sterile or fertile plants	5.0%	5.0%
Morphological variants	0.5%	0.5%
Wild types	0.2%	0.2%
Total including above types	5.0% cum	5.0% cum

* For non-oil types, seed which contains not more than 15% sterile plants may be Certified. If the seed lot contains 85% to 95% hybrid plants, the percentage of hybrid shall be shown on the certification label.

Tree and Shrub

I. The Purpose of Seed and Plant Certification

The purpose of seed and plant certification is to maintain and make available to the public high quality seed, seedlings, cuttings, and other propagating materials so produced, handled and distributed as to insure proper identity and genetic purity.

II. Eligibility Requirements for Certification of Tree and Shrub Varieties and Species

Only those varieties and species that are accepted by the South Dakota Agricultural Experiment Station and/or the State Seed Certification Board will be eligible for certification. Application forms for acceptance of privately developed varieties are available from the Horticulture-Forestry Landscape and Parks Department, South Dakota Agricultural Experiment Station.

III. Categories of Certified Tree Seed

Three classes of seed shall be recognized, i.e., Certified, Selected and Source-Identified.
A. *Certified* seed (blue tag) shall be seed of known genetic identity obtained from trees of proven genetic superiority as defined by the Agricultural Experiment Station.
B. *Selected* seed (green tag) shall be seed from rigidly selected trees, shrubs or stands that have promise of genetic superiority but that have not been progeny tested.
C. *Source-Identified* seed (yellow tag) may be seed from (a) natural stands with geographic origin known and (b) plantations or shelterbelts of known origin.

IV. Handling the Crop Prior to Inspection

Roguing of off-type plants, objectionable crop plants, and weeds is required prior to field inspection and will be the responsibility of the grower.

V. Establishing the Source of Seed

A. In those cases where the seed planted for the production of Foundation, Registered or Certified seed is obtained from another party, evidence such as a certification tag, sales record, etc. must be submitted to the certifying agency to establish source of seed.
B. The exact geographic source of the parent trees by legal description and the stand history must be known.

VI. Samples and Sampling of Seed

A representative sample of each lot of seed as it is offered for sale shall be taken.

VII. Seed House Inspection of Seed

Inspection of harvested lots of tree seed may be made at any time and any lot not properly protected from mixture may be rejected.

VIII. Field Standards

A. All classes must be inspected at least once prior to use as a seed source.

B. Source-Identified seed cannot be collected from irrigated areas unless predetermined to be of proven origin.
C. Seed Trees
1. Minimum isolation distances will be construed to refer to only genetically related species.
A minimum isolation radial distance of 500 feet will be required except for elm which will be 80 rods.
2. Seed trees must be true to type and must possess desirable qualities of growth, form and vigor. Off-type plants must be removed.
3. Fruit shall be collected from the trees or by tree bagging methods.
4. Fruit collecting and seed cleaning shall be under the supervision of the Seed Certification Service.
D. Planting Stock
1. Seedling and transplant stock shall have isolation sufficient to prevent mechanical mixture.
2. All distinct off-type plants or other species shall be rogued out prior to inspection.

IX. Grade Standards
Planting Stock
A. Standard nursery bundles properly tagged as to name and nursery grade shall be used.
B. A minimum viability of 98% at time of last inspection as determined by cutting and other tests is required.

X. Disease Standards
Varieties having specific disease standards shall be inspected for disease reaction at appropriate times for accurate readings.