

ALFALFA

1. 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.

2. Field Inspection

At least one inspection will be made during the time the seed crop is in bloom and at such other times during the growing season as may be necessary to determine varietal purity or other quality factors. Each field shall be rogued prior to inspection to remove off-type plants and other legumes and weeds which produce seeds which are inseparable from alfalfa seed.

3. Field Standards

A. Foundation and Registered fields shall be isolated from other varieties or the same variety not meeting varietal purity requirements:

| Class | Fields of Less than 5 Acres | Fields of More than 5 Acres |
|---|-----------------------------|-----------------------------|
| Foundation | 900 feet | 600 feet |
| Registered | 450 feet | 300 feet |
| Certified | 165 feet ¹ | 165 feet ¹ |
| ¹ Isolation requirements for the Certified class are based on the size of the field and the percentage of the field within 165 feet of another variety of alfalfa. If less than 10 percent of the field is within the isolation zone then no isolation other than a separation is required. If more than 10 percent of the field is within the isolation zone, then that portion must not be harvested for certified seed. The isolation zone is that area calculated by multiplying the length of the common border with other alfalfa by the average width of the Certified field falling within the 165 foot isolation distance requirement. In those cases where a portion of the field does not meet isolation requirements, then a clear line of demarcation shall be established between the Certified and non-certified portions of the field. The isolation distance required between classes of the same variety shall be 10 feet regardless of class or size of fields. | | |

B. Varietal Purity and Other Quality Factors

| Factors | Maximum permitted in each class | | |
|---|---|---------------|----------------|
| | Foundation | Registered | Certified |
| Other varieties ¹ | .1%(1:1000) | .25%(1:400) | 1.0%(1:100) |
| Sweet clover | None | 5 plants/acre | 40 plants/acre |
| Primary and Prohibited noxious weeds or dodder | None | None | None |
| Other restricted noxious weeds | Lack of evidence of control of weed seed production. ² | | |
| ¹ Other varieties shall include plants that can be differentiated from the variety that is being inspected. Volunteer plants shall be cause for reclassification or rejection. ² Fields containing excessive (uncontrolled) amounts of restricted noxious weeds, as listed in the General Standards, shall be disqualified from certification. | | | |

4. Seed Quality Standards

| Quality Factors | Standards for Each Class | | |
|---|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure seed (min %) | 99.25 | 99.25 | 99.25 |
| Inert matter (max %) | 0.75 | 0.75 | 0.75 |
| Total other crops (max %) | 0.20 | 0.35 | 1.0 |
| Other varieties (max %) | 0.10 | 0.25 | 1.0 |
| Other kinds (max %) | 0.10 | 0.10 | 0.50 |
| Sweet clover (max seeds/lb) | None | 45 | 90 |
| Weed seed (max %) | 0.10 | 0.20 | 0.50 |
| Primary and Prohibited noxious and objectionable (max/seed/lb) ¹ | None | None | None |
| Restricted noxious (max seed/lb) ¹ | None | 18 | 27 |
| Germination and hard seed (min %) | 80 | 80 | 80 |

¹ As listed in the General Standards. Objectionable weeds include dodder, dogbane, perennial sowthistle, quackgrass, and white top.

DRY EDIBLE BEANS

1. Seed Class Requirements

Certification shall be limited to the number of generations specified in the variety release statement for all varieties.

2. Land Requirements

- A. A field shall not have been planted for the production of any kind of field beans for at least two growing seasons.
- B. A field shall not have been planted for the production of any kind of potatoes, soybeans, sugar beets, or sunflowers for at least one growing season.
- C. A seed field inspected the previous year and in which bacterial blight is found to exceed field standards shall not be eligible as a production site for certifiable beans until it has been planted for at least two growing seasons to crops other than beans, potatoes, soybeans, sugar beets, or sunflowers.
- D. Cultural practices which encourage the spread of disease or may result in lower seed quality shall be strongly discouraged or prohibited in the production of certifiable seed.
- E. Sufficient tillage operations shall have been done to minimize trash and residue from previous crops.
- F. A minimum distance of 66 feet shall be maintained from any other dry edible beans. Any volunteer dry edible bean plants within the 66 foot border shall be removed.
- G. Irrigation water reclaimed from other dry edible bean fields should not be utilized for irrigation of the certified seed production.

3. Field Inspection Requirements

Each field shall be rogued to remove off-type plants, other crops, and weeds, the seeds which cannot be separated thoroughly from dry edible beans during conditioning.

Each field shall be inspected by a representative of the Association at least once during the mid-bloom to late pod-fill stages when varietal mixtures, foliar diseases, and other quality factors can best be determined. A second inspection shall be made after the beans are lifted but prior to harvest to determine presence of any bacterial blight or other factors which reduce quality. Additional inspections may be required at the discretion of the certifying agency.

4. Field Standards

Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted (Ratio of Plants) | | |
|--|-------------------------------------|----------------|--------------------------|
| | Foundation | Registered | Certified |
| Other varieties | .05%(1:2000) | .1% (1:1000) | .2%(1:500) |
| Other crops (inseparable) | None | .05%(1:2000) | .1%(1:1000) |
| Primary and Prohibited noxious weeds | None | None | None |
| Black nightshade (objectionable) | None | None | None |
| Diseases (seed borne) | | | |
| Bacterial blights ¹ | None | None | .1%(1:1000) ² |
| Wilt | None | .01%(1:10,000) | .02%(1:5000) |
| Anthrachnose | None | .01%(1:10,000) | .02%(1:5000) |
| Bean common mosaic virus | None | .5%(1:200) | 1.0%(1:100) |
| ¹ Bacterial blights include common blight, halo blight, brown spot, and bacterial wilt. | | | |

5. Harvesting, Handling, and Conditioning Requirements

The harvesting, handling, storing, and conditioning of certifiable seed shall be performed in such a manner as to prevent mechanical mixture or damage to seed and to maintain identity of each seed lot. Such procedures shall include the following:

- A. The combine shall be thoroughly cleaned before harvesting certifiable beans to avoid mechanical mixtures.
- B. All certifiable seed shall be kept properly identified as it is moved from the field to storage and conditioning. Use new or cleaned boxes (with covers to prevent mixture) or resealable bulk bags for seed storage. Each container shall be properly labeled as to variety and identity.
- C. All certified seed must be sold with seed treatment applied which contains an antibiotic such as Streptomycin.

6. Seed Sampling and Testing

A cleaned representative sample of at least 10,000 seeds from each inspected field must be submitted to the Nebraska Crop Improvement office for disease testing for internal seed borne infections.

An additional two (2) pound sample must be submitted to the Nebraska Crop Improvement Association Seed Laboratory for purity and germination testing.

7. Seed Quality Standards

| Factors | Standards for Each Class | | |
|---|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure seed (min %) | 99.0 | 98.0 | 98.0 |
| Inert matter ¹ (max %) | 1.0 | 2.0 | 2.0 |
| Total weed seed (max) | None | None | 0.1 |
| Primary and Prohibited noxious (max) | None | None | None |
| Restricted noxious (max/lb) | 1 | 1 | 1 |
| Nightshades and objectionable (max) | None | None | None |
| Total other crop seeds (max %) | None | 0.1 | 0.2 |
| Other varieties (max %) | None | 0.1 | 0.2 |
| Other kinds of crops (max %) | None | 0.05 | 0.1 |
| Germination (min %) | 85 | 85 | 85 |
| Seedborne Disease - Bacterial Blight | None | None | None |
| ¹ Inert matter cannot consist of more than 0.5% foreign material (soil or rock). | | | |

HYBRID CORN

1. Seed Class Requirements

- A. Only the Certified class is recognized in hybrid corn seed.
- B. Hybrid corn seed shall mean seed to be planted for the production of feed or for any use other than seed increase. It may be any one of the following.
 - 1) Single cross – the first generation of a cross between two inbred lines or an inbred line and a foundation backcross or of two foundation backcrosses.
 - 2) Double cross – the first generation of a cross between two foundation single crosses.
 - 3) Three-way cross – the first generation of a cross between a foundation single cross and an inbred line or foundation backcross.
 - 4) Topcross – the first generation of a cross between an open-pollinated variety and an inbred line or a foundation backcross or a foundation single cross.
- C. Eligibility of seedstocks – All seedstocks used as pollen and seed parents in the production of certifiable hybrid seed corn shall be of the certified Foundation class or whose source assures their identity and are approved by the certifying agency.

Evidence of eligibility for each seedlot used in the production field shall be an official certified Foundation quality tag or label obtained from a bag containing such seed or other approved documents described in the General Standards.
- D. A male sterile seed parent can be used to produce Certified hybrid corn seed by either of two methods.
 - 1) Hybrid seed produced on the fertile seed parent shall be mixed with the hybrid seed produced on sterile seed parent, of the same pedigree, either by blending in the field at harvest or by size at conditioning time. The ratio of the male sterile parent seed to fertile parent seed shall not exceed 2:1.
 - 2) The pollen parent shall involve pollen restoring line or lines so that not less than one-third of the plants grown from hybrid corn seed resulting from these crossing will produce pollen which appears to be normal in quantity and viability.

2. Land Requirements

Seed fields shall not be planted on land that has grown corn of another color or endosperm type during the preceding crop season.

3. Field Inspection

The current guidelines for field inspection procedures are available upon request from the Association office.

- A. Before pollination, each separate field shall be inspected by a representative of the Association at least once for purity of plant type and isolation from contaminating sources of pollen.
- B. During pollination, each separate field shall be inspected by a representative of the Association at least once every 48 hours except as detailed under the OECD program.

4. Field Standards

- A. Unit of certification
 - 1) The entire acreage of a specific pedigree in an isolation shall be inspected for certification. The maximum distance a seed parent row may be from a pollen parent row within a crossing block is 15 feet.
 - 2) Portions of an isolation may be considered as separate fields depending upon such factors as maturity differences, boundaries, waterways, roads, etc. (if separate field inspection reports are necessary).
 - 3) More than one hybrid may be produced in an isolation provided the same pollinator is used for all hybrids. The areas occupied by each different crossing block shall be designated in a manner that meets with the approval of the Association.

B. Isolation from contaminating pollen

- 1) A specific hybrid shall be located so that the seed parent is not less than 660 feet from corn of a different color or texture. For dent corn, this includes sweet, pop, white, or other colored corn. For hybrid seed production fields of dent sterile popcorn, no isolation from yellow dent field corn is required. Sweet corn plots of ¼ acre or less may be isolated from hybrid seed productions fields not less than 330 feet and must have at least 10 pollen parent border rows that are providing an isolation pollen buffer.
- 2) A specific hybrid shall be located so that the seed parent is not less than 660 feet from other corn of the same color or texture. This distance may be modified by the planting of pollen parent rows as an isolation buffer and depending on the size of the crossing field according to the following table.

| Min. Distance from Other Corn to the First Seed Parent Plant | Field Size | |
|--|-------------------------------|-------------------------------|
| | 1 to 19 Acres | 20 Acres or More |
| Feet | Minimum Number of Border Rows | Minimum Number of Border Rows |
| 660 | 0 | 0 |
| 570 | 4 | 2 |
| 490 | 6 | 2 |
| 410 | 8 | 4 |
| 330 | 10 | 6 |
| 270 | 12 | 8 |
| 210 | 14 | 10 |
| 150 | 16 | 12 |
| 90 | 18 | 14 |
| <90 | 24 ¹ | 16 ² |

¹ minimum of 60 foot including border rows

² minimum of 40 foot including border rows

3) Border (buffer) row requirements

- a) Because of the difficulty in establishing and maintaining an acceptable stand for buffer purposes, the planting of at least double the minimum number of border rows shown in the Table is suggested.
- b) An adjacent hybrid crossing block(s) planted with the same eligible pollen parent may be used as an isolation buffer, provided it is inspected and meets all field requirements.
- c) Border rows shall be considered unacceptable if:
 - 1)) Pollen is not being shed simultaneously with silk emergence of the seed parent.
 - 2)) Pollen is not being shed as plentifully as in pollen parent rows of crossing blocks, for any reason, including:
 - a)) Below average stands
 - b)) Differential planting dates
 - c)) Border rows are more than 33 feet from the seed parent rows
 - d)) Border rows have been detasseled.
 - d) Natural barriers such as hills, trees, buildings, or similar objects are not acceptable in place of border rows.
- 4) Differential maturity dates are permitted for modifying isolation distance provided there are not receptive silks in the seed parent at the same time pollen is being shed in the contaminating field.
- 5) Corrections for improper isolation shall be made by the applicant by one of the following methods or its equivalent.
 - a) By completely destroying or by detasseling the necessary contaminating corn before silks appear in the seed parent in the field to be certified.
 - b) By disqualifying from certification and clearly marking the crossing clocks improperly isolated from contaminating corn, before the final field inspection.

C. Roguing Off-type and Volunteer Plants

- 1) Definitely off-type plants in a parent line planted for the production of single cross or three-way cross hybrid corn seed to be used for grain or forage production must be completely destroyed so that suckers will not develop.

Plants showing definite hybrid vigor or a definitely different type from the parent being inspected shall be classified as definitely off-type.

- 2) An isolation in which more than 0.1% (1 per 1000) of definitely off-type plants, in the pollen parent or seed parent, have shed pollen at a time when more than 5% of the seed parent plants have apparently receptive silks shall be disqualified for certification.
- 3) An isolation in which more than 0.1% (1 per 1000) of definitely off-type plants are present in the seed parent at the final inspection shall be disqualified for certification.

D. Detasseling and pollen control

The following requirements shall apply when 5% or more of the seed parent plants within an isolation have receptive silks.

- 1) A field shall be disqualified from certification if at any one inspection more than 1% of the seed parent plants have shed pollen or if the total number having shed pollen for any three inspections on different dates exceeds 2%.
- 2) When more than one hybrid combination is being grown in the same isolation and the seed parent of one or more of the hybrids is shedding pollen in excess of 1% all seed parents having 5% or more apparently receptive silks at the time will be disqualified unless adequately isolated from the shedding seed parent.
- 3) Any tassel or portion of tassel shall be counted as shedding pollen when two inches or more of the central stem or the side branches or a combination of the two have the anthers extended from the glumes.
- 4) The detasseling (cutting or pulling) of cytoplasmic male sterile seed parent is permitted.

5. Seed Sampling and Testing

A. Post control genetic purity testing. The final certification of seedlots, as determined by the Association, may be contingent upon determination of percent hybridization using the following methods.

- 1) Biochemical methods which determine the percent hybridization by identifying selfs within the seedlot by grade size.
- 2) Field growouts of seed from production fields or isolations by grade size.

B. A conditioned representative sample of at least two pounds from each certifiable grade size within a seedlot shall be submitted to the Association laboratory for determination of germination and purity for certification and labeling purposes.

6. Seed Quality Standards

A. Genetic

| Quality Factors | Certified Seed Class |
|---|----------------------|
| Other varieties of a different color or texture (max %) | 0.5 |
| Off-textured kernels in opaque 2, flowery 2 or waxy hybrids (max %) | 0.5 |

B. Mechanical

| Quality Factors | Certified Seed Class |
|--|----------------------|
| Pure seed (min %) | 99.0 |
| TOTAL other crop seeds-including other varieties (max %) | 0.5 |
| TOTAL weed seed (max) | None |
| TOTAL inert matter (max %) | 1.0 |
| Germination (min %) | 90 |
| Moisture (max %) | 14.0 |

FOUNDATION SINGLE CROSS CORN¹

1. Seed Class Requirements

- A. Only the certified Foundation class is recognized for seed of such single crosses, backcrosses, and male sterile inbreds produced according to these Standards.
- B. Foundation single cross corn seed shall mean seed to be planted for the production of certified quality hybrid corn seed. It shall consist of the first generation of a cross of any one of the following:
- 1) Two inbred lines
 - 2) An inbred line and a Foundation backcross
 - 3) Two Foundation backcrosses
- C. Foundation backcrosses shall be either of the following:
- 1) A **first generation Foundation backcross** is the first generation cross between a foundation single cross of related inbred lines and an inbred line which is the same as one of the inbreds in the Foundation single cross.
 - 2) A **second generation Foundation backcross** is made by using a first generation back cross as the seed parent; the pollen parent is an inbred line. The inbred line is the same as the inbred parent used in making the first generation back cross seed parent.
- D. Additional Requirements for **Male Sterile Lines**
- 1) A male sterile inbred line may be substituted for its fertile counterpart as one parent of a Foundation single cross provided:
 - a) The male sterile line has been backcrossed for not less than five generations to its fertile counterpart, and
 - b) The male sterile line is the same in other characteristics as its fertile counterpart.
 - 2) Male sterile inbred lines propagated by hand pollination shall be eligible for certification.
- E. Additional Requirements for **Pollen-Restoring Lines**
- A pollen-restoring line may be substituted for its non-restoring counterpart in a Foundation single cross, provided the pollen-restoring line is the same in other characteristics as its non-restoring counterpart.

2. Eligibility of Seedstocks

All seedstocks used as pollen and seed parents in the production of Foundation single cross and Foundation backcross corn seed shall be of the certified Foundation class or whose source assures their identity and are approved by the certifying agency.

Evidence of eligibility for each seedlot used within the isolation shall be an official certified Foundation quality tag or label obtained from a bag containing such seed, or other such approved documents described in the General Standards.

3. Land Requirements

Seed fields shall not be planted on land that has grown corn of another color or endosperm type during the preceding crop season.

4. Field Inspection

The current guidelines for field inspection procedures are available upon request from the Association. Each Foundation single cross within a separate field or isolation shall be inspected by a representative of the Association as follows:

¹ For the purpose of certification, the propagation of male sterile inbred lines shall be subject to these same requirements and standards.

A. Before pollination

At least one inspection for purity of plant type. Isolation distance from contaminating sources of pollen is also checked and recorded at this time.

B. During pollination

At least three inspections shall be made. Additional inspections may be required at the discretion of the certifying agency. Inspections shall be made without previous notice to the applicant.

5. Field Standards

A. Unit of Certification and Pollen Parent Requirements

- 1) All crossing blocks of a specific pedigree within an isolation shall be inspected for certification. The maximum distance a seed parent may be from a pollen parent within a crossing block is nine feet.
- 2) More than one Foundation single cross may be produced within an isolation provided the same pollen parent is used for all crosses. The areas occupied by each different single cross shall be designated in a manner that meets with the approval of the Association.
- 3) The minimum population of pollen parent plants shall be 2,000 plants per acre. Ineffective (immature or impaired) pollen parent plants will not be counted.
- 4) Each separate isolation shall contain not fewer than 400 pollen parent plants per acre (about 20%) that are actively shedding pollen when more than 25% of the seed parent silks are apparently receptive.

B. Isolation from Contaminating Pollen

- 1) A specific Foundation single cross shall be located so the seed parent is not less than **660** feet from any other corn, except pollen parent rows and other seed parents in the same isolated field.
- 2) Differential maturity dates are permitted for modifying the isolation distance for Foundation single crosses and male sterile inbred line increases provided there are no receptive silks in the seed parent at the same time pollen is being shed in the contaminating field.
- 3) Corrections for improper isolation shall be made by the applicant by one of the following methods or its equivalent.
 - a) By completely destroying or by detasseling the contaminating corn before it sheds pollen, or before silks appear in the seed parent being inspected, or
 - b) By completely destroying, before the final field inspection, the seed- producing plants which are improperly isolated from the contaminating corn.

C. Roguing Off-type and Volunteer Plants

- 1) Definitely off-type plants in either parent of a Foundation single cross shall be completely destroyed so that suckers will not develop. Any plants showing definite hybrid vigor or a definitely different type from the inbred being inspected shall be classified as definitely off-type.
- 2) Seed and Pollen Parents—An isolation in which more than 0.1% (1 per 1,000) of definitely off-type plants in either the pollen or seed parent have shed pollen, at a time when more than 5.0% of the seed parent plants have apparently receptive silks, will be disqualified for certification. (See below Section D.4., Pollen Control.)
- 3) Seed Parent—An isolation in which more than 0.1% (1 per 1,000) of definitely off-type plants are present in the seed parent at the final inspection will be disqualified for certification.

D. Detasseling and Pollen Control

The following requirements shall apply when 5% or more of the seed-parent plants within an isolation have receptive silks.

- 1) An isolation of a specific Foundation single cross shall be disqualified for certification if at one inspection more than .5% of the seed parent plants have shed or are shedding pollen or if the total number having shed pollen for any three inspections on different dates exceeds 1%.
- 2) When more than one Foundation single cross is being grown in the same isolation and the seed parent of one or more of them is shedding pollen in excess of 0.1% (1:1000), all seed parents within the isolation have 5% or more apparently receptive silks at this time will be disqualified unless adequately isolated from the shedding seed parent.

- 3) Male Sterile Inbreds—Any plant shedding pollen in male sterile rows shall be completely destroyed by the applicant to eliminate the possibility of its producing seed. Detasseling (cutting or pulling) shall be acceptable to control plants shedding pollen when the pollen parent is a fertility-restoring line.
- 4) Any tassel or portion of tassel shall be counted as shedding pollen when two inches or more of the central stem, or the side branches, or a combination of the two have the anthers extended from the glumes.

6. Seed Sampling and Testing

- A. A conditioned representative sample, of at least 1 MVK, from each certifiable grade size within a seedlot shall be submitted to the Association laboratory for determination of germination and genetic purity for certification and labeling purposes.

FOUNDATION INBRED CORN

1. Seed Class Requirements

- A. Only the certified Foundation class is recognized for seed of eligible inbreds produced according to these Standards. For the purpose of certification, the propagation of male sterile inbred lines shall be subject to the same requirements and standards as Foundation Single Crosses.
- B. Foundation inbred corn seed shall mean seed to be planted for the production of certified Foundation single cross seed or Certified quality hybrid corn seed.
- C. An inbred line to be considered for certification shall be a relatively true breeding strain resulting from controlled self-fertilization, or back-crossing to a recurrent parent with selection or its equivalent.

An inbred line to be considered eligible for certification shall be required to meet the provisions stated in the General Standards.

D. Addition of Specific Genetic Factors to a Line

- 1) When a specific genetic factor(s) is added to an inbred line, the line shall be backcrossed to its recurrent parent at least five generations. The line shall be homozygous for the specific genetic factor(s) except for the pollen restoration factor(s) and the genic male sterile maintainer line.
 - 2) For a recovered pollen restorer inbred line, selection shall be relative to a specific cytoplasmic male sterile source.
 - 3) Proof of the genetic nature of a recovered line shall be supplied by the originator.
 - 4) A genic male sterile maintainer line, consisting of duplicate-deficient and male-steriles in an approximate 1:1 ratio, shall be no more than two generations removed from Breeder seed. The maintainer shall be designated according to generation as:
 - a) **Breeder Seed**—The hand pollinated selfed seed from a known duplicate-deficient plant heterozygous at a particular male sterile locus.
 - b) **Foundation I Seed**—The produce of random-mating among fertile plants arising from Breeder seed.
 - c) **Foundation II Seed**—The product of random-mating among fertile plants arising from Foundation I seed.
 - 5) A genic male sterile line shall be a strain homozygous for a particular male sterile recessive allele.
 - 6) The genic male sterile lines shall be identified as to the recessive genes they carry (e.g., B37 ms-1, N26ms-10.) The maintainer lines shall be identified not only for the male sterile gene for which it is heterozygous, but for the specific translocation from which it was derived (e.g., B37 Mt-1 ms-1, N28 Mt-1 ms-10.)
- E. Inbred lines increased by hand pollination shall be eligible for certification.
 - F. An inbred used as a pollinator in a Foundation single cross isolation may be certified, provided all the seed parents within the isolation are inspected and meet all field requirements for certification.

2. Eligibility of Seedstocks

All seedstocks used in the production of Foundation inbred corn seed shall be of the certified Foundation class or whose source assures their identity and are approved by the certifying agency.

Evidence of eligibility for each seedlot used with the inbred isolation shall be an official certified Foundation quality tag or label obtained from a bag containing such seed, or other such approved documents described in the General Standards.

3. Land Requirements

Seed fields shall not be planted on land that has grown corn of another color or endosperm type during the preceding crop season.

4. Field Inspection

The current guidelines for field inspection procedures are available upon request from the Association. Each Foundation inbred within a separate field or isolation shall be inspected by a representative of the Association as follows:

A. Before pollination

At least one inspection shall be made for purity of plant type. Isolation distance from contaminating sources of pollen is also checked and recorded at this time.

B. During pollination

At least three inspections shall be made. Additional inspections may be required at the discretion of the certifying agency. Inspections shall be made without previous notice to the applicant.

5. Field Standards

A. Unit of Certification

All rows of a specific inbred within an isolation shall be inspected for certification. At the discretion of the applicant and with the approval of the Association, only a specific portion of an inspected isolation may be approved for certification of seed quality, provided the remainder is harvested and maintained separately from the certifiable seed.

B. Isolation from Contaminating Pollen

- 1) A specific Foundation inbred shall be so located that it is not less than **660** feet from any other corn of the same color or texture, or not less than **1320** feet from corn of other color or texture, except when the inbred is grown as a pollinator in a Foundation single cross production field. In this case, all seed parent(s) in the same isolation shall be inspected and meet all field requirements for certification.
 - a) Differential maturity dates are permitted for modifying isolation distances provided there are no receptive silks in the seed parent at the same time pollen is being shed in the contaminating field.
 - b) Foundation inbred production fields of dent sterile popcorn need not be isolated from yellow dent field corn.
 - c) No isolation is required for the production of hand-pollinated seed.
- 2) Corrections for improper isolation shall be made by the applicant by one of the following methods or its equivalent:
 - a) By completely destroying or by detasseling the contaminating corn before it sheds pollen or before silks appear in the inbred being inspected.
 - b) By completely destroying, before the final field inspection, the plants which are improperly isolated from the contaminating corn.

C. Roguing Off-type and Volunteer Plants

- 1) Definitely off-type plants shall be completely destroyed so that suckers will not develop. Any plants showing definite hybrid vigor or a definitely different type from the inbred being inspected shall be classified as definitely off-type.
- 2) An isolation in which more than 0.1% (1:1000) of definitely off-type plants have shed pollen, at the same time more than 5.0% of the plants have apparently receptive silks, shall be disqualified for certification.
- 3) Any tassel and portions of tassel of off-type plants shall be counted as shedding pollen when two inches or more of the central stem or the side branches or a combination of the two have the anthers extended from the glumes.

6. Seed Sampling and Testing

A conditioned representative sample, of at least 1 MVK, from each certifiable grade size within a seedlot shall be submitted to the Association laboratory for determination of germination and genetic purity for certification and labeling purposes.

GRASS

1. Seed Class Requirements

- A. Limitations on the length (age) of stand or the classes of certified seed through which a given variety may be multiplied for both inside and outside its region of adaptation or in regard to other production practices affecting genetic or mechanical purity or other seed quality factors shall be those specified by the originator of the variety or designee.
- B. All classes of certified seed may be produced from vegetatively propagated planting stock in accordance with the procedure specified by the originator; but in such cases, the Standards for vegetatively propagated grasses shall apply.
- C. Application to establish eligibility of a field and seed source shall be made within one year of seeding.

2. Land Requirements

- A. A field to be eligible for the production of Foundation seed shall not have grown or been seeded to the same or any objectionable species during the previous five years.
- B. A field to be eligible for the production of Registered seed (if permitted for the variety) shall not have grown or been seeded to the same or any objectionable species during the previous three years except when seeded with Foundation, Registered, or Certified seed of the same variety.
- C. A field to be eligible for the production of Certified seed shall not have grown or been seeded to the same or any objectionable species during the previous two years, except when seeded with Foundation, Registered, or Certified seed of the same variety.
- D. As an additional precaution, no amendments or materials which could be a source of contaminating seeds, such as certain animal wastes, shall be applied during the establishment and productive life of the stand.
- E. Any eligible field which has not been inspected for certification purposes for two or more consecutive growing seasons shall not be accepted for certification unless approved by the Association office.

3. Field Inspection

- A. As conditions require a seedling inspection shall be made to check for volunteer plants, isolation, potential weed problems, and other quality factors in production at the discretion of the certifying agency.
- B. After establishment, each eligible field shall be inspected each year certifiable seed is to be harvested. For most species and production sites, seed harvest will be possible generally no later than two years after seeding.
- C. Each field shall be inspected at least once after heading and prior to harvest when varietal purity, other grasses, objectionable weeds, and other quality factors can best be identified. Additional inspections may be required at the discretion of the certifying agency.

4. Field Standards

- A. Isolation requirements

Each field eligible for the production of Foundation, Registered, or Certified seed shall be isolated from any other strain of the same species or of compatible species or fields of the same strain which do not meet varietal purity requirements for certification and that are in bloom during the same time as follows.

| Type of Reproduction | Border to be Removed ² (feet) | Minimum Isolation Distance ³ (feet) | | |
|--|--|--|------------|------------------|
| | | Foundation | Registered | Certified |
| All cross pollinated species | 0 | 900 | 300 | 165 ⁴ |
| | 9 | 600 | 225 | 100 |
| | 15 | 450 | 150 | 75 |
| Strains at least 80% apomictic ¹ | 0 | 60 | 30 | 15 |
| | 9 | 30 | 15 | 15 |
| Strains at least 95% apomictic and highly self-fertile species | 0 | 60 | 30 | 5 |
| | 9 | 30 | 15 | 0 |

¹ Apomixis refers to a type of asexual production of seed, as in Kentucky bluegrass.
² When a border is required to be removed, such removal shall not occur until pollination of the crop to be certified is completed. The removal of border is permitted only if a field is more than five acres.
³ The distance required for isolation between different classes of seed of the same variety may be reduced to 25% of the distance shown in the above table.
⁴ No isolation distance is required for the certified seed class other than the boundary for mechanical separation for fields planted to cross-pollinated species and varieties less than 95% apomictic when there is an isolation zone of less than 10% of the entire field area. The isolation zone is calculated by multiplying the length of the common border with contaminating fields by the average width of the certifiable field found within the basic 165 feet isolation requirement. The use of the isolation zone is permitted only if a field is more than five acres.

B. Variety Purity and Other Quality Factors

| Factor | Maximum Permitted (Ratio of Plants) | | |
|---|--|--------------|--------------|
| | Foundation | Registered | Certified |
| Other varieties and off-types ¹ | .05%(1:2000) | 0.1%(1:1000) | 0.3%(3:1000) |
| Other grasses (inseparable) | .05%(1:2000) | .05%(1:2000) | 0.2%(1:500) |
| Primary and Prohibited noxious weeds | None | None | None |
| Restricted noxious and objectionable weeds ² | Lack of evidence of control of weed seed production. | | |

¹ Other varieties shall be considered to include plants that can be differentiated from the variety that is being grown for seed.
² A field containing an excessive (uncontrolled) population of weeds designated as Restricted or objectionable (for the species being grown), such as downy brome, hairy chess, cheat, docks, quackgrass, or giant foxtail shall be disqualified from certification.

5. Seed Sampling and Testing

- A. A conditioned representative sample, at least equal in size to the amount suggested below for the applicable grass species, shall be submitted to the Association laboratory for determination of germination and purity for certification and labeling purposes.
- B. Suggested representative sample sizes.
- 1) Non-chaffy seeded grass species
 - a) 1/8 pound – Kentucky bluegrass and sand lovegrass
 - b) 1/4 pound – Reed canarygrass, chewings fescue, and orchardgrass
 - c) 1/3 pound – Perennial ryegrass and tall fescue
 - d) 1/2 pound – Smooth brome, crested wheatgrass, switchgrass, and Russian wildrye
 - e) 1 pound – All wheatgrasses except crested
 - 2) Chaffy seeded grass species
 - a) 1/4 pound – Prairie sandreed
 - b) 1/2 pound – Big bluestem, little bluestem, indiagrass, and sideoats grama
 - c) 3/4 pound – Sand bluestem
 - 3) For other species not listed, contact the Association laboratory.

6. Seed Quality Standards for Non-chaffy Seeded Forage and Turf Grasses

| Species/Seed Classes | Type of Reproduction ¹ | % Pure Seed (min) | OTHER CROPS | | | | | | WEEDS | | | | | | | | | | |
|-------------------------------|-----------------------------------|-------------------|-------------------------------|-----|-------------------------|-----|------------------------------|------------------|-------------------------|------------------|---|------|---|------|-----------------------------------|----|---------------------------|-----|----|
| | | | % Total Other Crop Seed (max) | | % Other Varieties (max) | | % Other Kinds of Crops (max) | | % Total Weed Seed (max) | | Primary & Prohibited Noxious Weeds ² | | Seed/lb of Restricted Noxious Weeds (max) | | % Annual Brome ³ (max) | | Total Viable ⁴ | | |
| | | | F/R | C | F/R | C | F/R | C | F/R | C | F/R | C | F/R | C | F/R | C | | F/R | C |
| Bluegrass, Kentucky | A | 95 | 0.1 | 2.0 | 0.1 | 2.0 | 0.1 | 0.5 | 0.1 | 0.5 | 5.0 | 0.10 | 0.3 | None | 45 | 90 | 0.15 | 0.3 | 80 |
| Brome, Smooth | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.5 | 85 |
| Buffalograss | C | 95 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 5.0 | 0.25 | 0.5 | None | 0 | 6 | 0.15 | 0.5 | 70 |
| Canarygrass, Reed | C | 96 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 4.0 | 0.25 | 0.5 | None | 25 | 50 | 0.15 | 0.5 | 75 |
| Fescue, Chewings | C | 95 | 0.1 | 1.0 | 0.1 | 1.0 | 0.1 | 0.5 | 0.1 | 0.5 | 5.0 | 0.10 | 0.3 | None | 15 | 45 | 0.15 | 0.3 | 85 |
| Red | C | 98 | 0.1 | 1.0 | 0.1 | 1.0 | 0.1 | 0.5 | 0.1 | 0.5 | 2.0 | 0.10 | 0.3 | None | 9 | 45 | 0.15 | 0.3 | 85 |
| Tall | C | 98 | 0.1 | 1.0 | 0.1 | 1.0 | 0.1 | 0.5 | 0.1 | 0.5 | 2.0 | 0.10 | 0.3 | None | 9 | 45 | 0.15 | 0.3 | 85 |
| Lovegrass, Sand | S | 97 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 3.0 | 0.50 | 1.0 | None | 45 | 90 | -- | -- | 80 |
| Needlegrass, Green | S | 75 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 25.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.5 | 80 |
| Orchardgrass | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 15 | 45 | 0.15 | 0.4 | 80 |
| Ricegrass, Indian | C | 85 | 0.5 | 1.0 | 0.1 | 2.0 | 0.1 | 0.25 | 0.1 | 0.25 | 15.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Ryegrass, Perennial Turf-type | C | 97 | 0.1 | 3.0 | 0.1 | 3.0 | 0.1 | 0.5 | 0.1 | 0.5 | 3.0 | 0.10 | 0.3 | None | 9 | 45 | 0.15 | 0.5 | 85 |
| Switchgrass | C | 95 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 5.0 | 0.50 | 1.0 | None | 15 | 45 | -- | -- | 75 |
| Wheatgrass, Bluebunch | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Crested/Fairway | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Intermediate | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Pubescent | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Slender | S | 85 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 15.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Streambank | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Tall | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Thickspike ⁵ | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 ⁵ | 1.0 ⁵ | 0.2 ⁵ | 1.0 ⁵ | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |
| Western | C | 85 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 15.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 70 |
| Wildrye, Canada | S | 85 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 15.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 70 |
| Russian | C | 90 | 0.2 | 1.0 | 0.1 | 1.0 | 0.2 | 1.0 | 0.2 | 1.0 | 10.0 | 0.25 | 0.5 | None | 9 | 45 | 0.15 | 0.4 | 80 |

¹ A=strains at least 80% apomictic, C=cross-pollinated species, S=highly self-fertile species.
² Prohibited noxious weeds in non-chaffy grasses shall include the species listed in the General Standards plus dodder, horse-nettle, perennial sowthistle, quackgrass, white top, and wild garlic.
³ Annual bromes include Japanese chess, hairy chess, downy brome, and cheat.
⁴ Includes dormant seed.
⁵ Foundation and Registered seed of thickspike wheatgrass may contain up to 1% slender wheatgrass, seed of the Certified class may contain up to 15% slender wheatgrass.

7. Seed Quality Standards for Chaffy Seeded Forage Grasses

| Species and Seed Class | Type of Reproduction ¹ | Pure Live Seed Index ² (min) | OTHER CROPS | | | | WEEDS | | | |
|-------------------------------|-----------------------------------|---|--------------------------------|-------------------------|------------------------------|------------------------------|-------------------------|--|--|----|
| | | | % Total Other Crop Seeds (max) | % Other Varieties (max) | % Other Forage Grasses (max) | % Other Kinds of Crops (max) | % Total Weed Seed (max) | Seeds/lb of Primary and Prohibited Noxious Weeds (max) | Seeds/lb of Restricted Noxious Weeds (max) | |
| FOUNDATION: | | | | | | | | | | |
| Bluestem, Big | C | 25 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Bluestem, Little | C | 12 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Bluestem, Sand | C | 20 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Foxtail, Creeping | C | 60 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Gramma, Blue | C | 24 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Gramma, Sideoats ³ | C | 30 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Indiangrass | C | 25 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Prairie Sandreed | C | 30 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| REGISTERED: | | | | | | | | | | |
| Bluestem, Big | C | 25 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Bluestem, Little | C | 12 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Bluestem, Sand | C | 20 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Foxtail, Creeping | C | 60 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Gramma, Blue | C | 24 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Gramma, Sideoats ³ | C | 30 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Indiangrass | C | 25 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| Prairie Sandreed | C | 30 | 1.0 | 1.0 | 0.1 | 0.1 | 0.1 | 1.0 | None | 9 |
| CERTIFIED: | | | | | | | | | | |
| Bluestem, Big | C | 25 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Bluestem, Little | C | 12 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Bluestem, Sand | C | 20 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Foxtail, Creeping | C | 60 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Gramma, Blue | C | 24 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Gramma, Sideoats ³ | C | 30 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Indiangrass | C | 25 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |
| Prairie Sandreed | C | 30 | 2.0 | 2.0 | 0.5 | 0.5 | 0.5 | 2.0 | None | 45 |

¹ C=Cross-pollinated species.
² When pure live seed index (PLS) is used as a basis for certification, the analysis labels shall bear the percent germination, dormant seed, and purity or it equivalent as permitted by the current Nebraska Seed Law.
³ In determining germination for sideoats grama, the seed unit shall be defined as a spike containing one or caryopses.

8. Seed Quality Standards for Sod Quality Class Turfgrass Seeds

The seedlots of any grass variety eligible for this special sod quality program shall meet the specific certification standards as follows. A distinct Sod Quality tag shall be attached to the container along with the official certified seed tag on eligible seed meeting the added requirements of this high quality program.

| Kind\Factor ¹ | % Pure Seed (min) | Total Germ (min) | % Other Varieties (max) | % Other Crop (max) | Objectionable Other Crops ² (max) | % Weed Seed (max) | Objectionable Weeds ³ (max) |
|---------------------------------|-------------------|------------------|-------------------------|--------------------|--|-------------------|--|
| Kentucky Bluegrass ⁴ | 97 | 85 | 2.0 | 0.1 | None | 0.02 | None |
| Chewings Fescue | 98 | 90 | 1.0 | 0.1 | None | 0.02 | None |
| Red Fescue | 99 | 90 | 1.0 | 0.1 | None | 0.02 | None |
| Tall Fescue | 99 | 90 | 1.0 | 0.1 | None | 0.02 | None |
| Perennial Ryegrass | 98 | 90 | 1.0 | 0.1 | None | 0.02 | None |

¹ Seed analysis for the Sod Quality class shall be based on a sample 2.5 times the AOSA "Rules for Testing Seeds" noxious weed exam sample size. This sample to be examined for noxious weeds, weeds, and other crop seeds.

² Includes ryegrass, orchardgrass, timothy, bentgrass, big bluegrass, rough bluegrass, smooth brome, reed canarygrass, tall fescue, clovers, and meadow foxtail.

³ Includes the Primary and Prohibited Noxious seeds listed in the General Standards plus docks, chickweed, crabgrass, plantain, short-awn foxtail, black medic, annual bluegrass, velvetgrass, and rattail fescue.

⁴ A 10 gram sample will be examined for poa annua.

MILLET

(PROSO, FOXTAIL, AND OTHER SELF POLLINATED SPECIES)

1. Field Inspection

Each field shall be inspected by a representative of the Association at least once after the seed begins to assume its mature color and when varietal mixtures and other quality factors can best be determined. Additional inspections may be required at the discretion of the certifying agency.

2. Field Standards

A. A certifiable field should be separated from other fields planted to different varieties of the same self-pollinated millet species by a distance of at least 165 feet to minimize outcrossing potential, especially when seeds of the varieties are of distinctly different colors (e.g. red vs. white).

B. Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted in Each Class (Ratio of Plants) | | |
|--------------------------------------|---|------------|-----------|
| | Foundation | Registered | Certified |
| Other varieties ¹ | 1:3,000 | 1:2,000 | 1:1,1000 |
| Inseparable other crops ² | 1:10,000 | 1:10,000 | 1:2,000 |
| Primary and Prohibited noxious weeds | None | None | None |
| Wild proso millet | None | None | None |

¹ Other varieties and off-types shall include those plants that can be differentiated from the variety being inspected as described by the originator.
² Inseparable other crops shall include crop plants, the seed of which cannot be thoroughly removed from the seed crop by usual methods of conditioning.

3. Seed Quality Standards

| Factors | Standards for Each Class | | |
|--------------------------------------|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure seed (min %) | 98.0 | 98.0 | 98.0 |
| Inert matter (max %) | 2.0 | 2.0 | 2.0 |
| Total weed seed (max %) | 0.05 | 0.10 | 0.10 |
| Primary and Prohibited noxious | None | None | None |
| Wild proso millet | None | None | None |
| Wild buckwheat (max seeds/lb) | 2 | 4 | 8 |
| Total other crop seed (max %) | 0.01 | 0.02 | 0.04 |
| Other varieties ¹ (max %) | 0.005 | 0.01 | 0.02 |
| Other kinds (max %) | 0.005 | 0.01 | 0.02 |
| Germination (min %) | 80 | 80 | 80 |

¹ Other varieties and off-types shall include those seeds that can be differentiated from the variety being analyzed, as described by the originator.

FIELD PEAS

1. Land Requirements

A field to be eligible for the production of certifiable seed must be planted on land which the preceding crop was of another kind or the same variety of a certified class.

2. Field Inspection

Each field shall be inspected by a representative of the NCIA at least once prior to harvest. Additional inspections may be required at the discretion of the certifying agency.

3. Field Standards

A pea field to be certifiable shall be separated from other pea fields by a distance adequate to prevent mechanical mixture.

A. Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted in Each Class (Ratio of Plant) | | |
|--|--|------------|-----------|
| | Foundation | Registered | Certified |
| Other varieties ¹ | 1:2000 | 1:1000 | 1:500 |
| Other crops (inseparable) ² | None | 1:5000 | 1:1000 |
| Primary and Prohibited noxious and objectionable weeds | None | None | None |

¹ Other varieties and off-types shall include plants that can be differentiated from the variety being inspected as described by the originator.
² Includes crops, the seed of which cannot be thoroughly removed from pea seed by the usual methods of conditioning.

4. Seed Quality Standards

| Factors | Standards for Each Class | | |
|--|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure seed (min %) | 98.0 | 98.0 | 98.0 |
| Inert matter (max %) | 2.0 | 2.0 | 2.0 |
| Total weed seed (max %) | None | 0.05 | 0.1 |
| Primary and Prohibited noxious and objectionable weeds (max) | None | None | None |
| Restricted noxious weeds (max/lb) | 1 | 1 | 1 |
| Total other crops (max %) | 0.05 | 0.1 | 0.2 |
| Other varieties ¹ (max %) | 0.05 | 0.1 | 0.2 |
| Other kinds (max %) | None | 0.05 | 0.1 |
| Germination + hard seed (min %) | 80 | 80 | 80 |

¹ Other varieties and off-types shall include seeds that can be differentiated from the variety being analyzed, as described by the originator.

SMALL GRAINS

(Wheat, Oats, Barley, Rye, Triticale)

1. Land Requirements

- A. For **White Wheat** an eligible field cannot have produced a white wheat variety for a period of one year unless certified seed of the same variety was used and Red Wheat variety for two years. For **Red Wheat** an eligible field cannot have produced a wheat crop for a period of one year unless certified seed of the same variety was used. A longer interval is recommended if the following conditions persist.
- 1) In areas of lower rainfall where seeds may remain dormant under fallow conditions.
 - 2) When seed crop to be grown is to follow a crop whose seeds cannot be separated thoroughly during conditioning (e.g., wheat in barley, rye or triticale in wheat, barley in oats).
 - 3) Any other cultural practices or typical climatic conditions which enable seed dormancy or seed mixtures.
- B. As an additional precaution, no amendments or materials which could be a source of contaminating seeds shall be applied to the field during establishment or any time of the growing season.

2. Field Inspection

Each field shall be inspected by a representative of the Association at least once after the plants are fully headed, and before harvest, when varietal mixtures and other quality factors can best be determined. Additional inspections may be required at the discretion of the certifying agency.

A. Isolation Requirements

- 1) Red wheat, white wheat and triticale (additional requirements) – A certifiable field of either red wheat, white wheat or triticale shall be not less than 20 feet from any field of rye not harvested before bloom. Isolated rye plants shall be subject to the five foot boundary requirement.
- 2) Red Wheat and triticale (additional guidelines) – To minimize outcrossing, a field planted for the production of the Foundation seed class should be not less than 20 feet from any other variety of wheat or triticale in bloom at the same time with a visible break between varieties. A field for the production of the Registered or Certified class seed should be separated from other varieties of the same crop type by either an uncropped strip 10 feet wide or a 10 foot wide strip equally divided between the two varieties shall be discarded at the time of harvest.
- 3) White Wheat (additional guidelines) – To minimize out crossing and contamination, a field planted for the production of the Foundation and Registered seed should not be less than 30 feet from any Red Wheat. Certified seed fields must be located no less than 20 feet. A field planted for the production of the Foundation seed class should be not less than 20 feet from any other variety of white wheat in bloom at the same time with a visible break between varieties. A field for the production of the Registered or Certified class seed should be separated from other white wheat varieties by either an uncropped strip 10 feet wide or a 10 foot wide strip equally divided between the two varieties shall be discarded at the time of harvest.
- 4) Rye – A field planted for the production of Foundation seed shall be isolated by at least 990 feet, while fields to produce Registered and Certified seed shall be isolated by at least 660 feet from rye fields of any other variety or fields of the same variety that do not meet the varietal purity requirements.

B. Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted in Each Class (Ratio of Heads) | | |
|--|--|------------------|-----------------|
| | Foundation | Registered | Certified |
| Other Varieties ¹ | 0.02% (1:5,000) | 0.05% (1:2,000) | 0.1% (1:1,000) |
| Inseparable Other Crops ² | 0.01% (1:10,000) | 0.01% (1:10,000) | 0.05% (1:2,000) |
| Objectionable Other Crops and Weeds ³ | None | — | — |
| Primary and Prohibited Noxious Weeds | None | None | None |
| Restricted Noxious Weeds ⁴ | Lack of evidence of control of weed seed production. | | |
| Loose Smut or Bunt ⁵ | 0.1 (1:1,000) | 0.3 (3:1,000) | 0.5 (5:1,000) |
| ¹ Other varieties shall include plants that can be differentiated from the variety that is being inspected as described by the originator. ² Inseparable other crops shall include crop plants the seed of which cannot be thoroughly removed by the usual methods of conditioning. Both winter and spring types of the same crop shall be considered inseparable. ³ The seed, of any certified class, produced from fields found to contain such factors as jointed goatgrass or rye in other small grains or dock plants in oats shall be subject to special handling and conditioning procedures as directed by the Association. ⁴ Fields containing excessive (uncontrolled) amounts of Restricted Noxious Weeds (as listed in the General Standards) shall be disqualified from certification. ⁵ If loose smut or other seed-borne diseases are noted during field inspection in excess of the standard, seed treatment shall be required prior to planting. | | | |

4. Seed Quality Standards

| FACTORS | | | | | | | | | | | | |
|-------------------|--------------|-------------------|----------------------|--------------------------------------|------------------------------|---------------------|---------------------------------------|--|--|---|--|-----------------------------------|
| Class/Crop | % Germ (min) | % Pure Seed (min) | % Inert Matter (max) | Other Crops | | | | Weed Seed | | | | |
| | | | | % Other varieties ¹ (max) | % Other kinds of crops (max) | Rye/Triticale (max) | Other small grains ² (max) | Seeds/lb of primary & prohibited noxious weeds (max) | Seeds/lb of restricted noxious weeds (max) | Seeds/lb of wild buckwheat ³ (max) | Seeds/lb of jointed goatgrass ³ (max) | Seeds/lb of total weed seed (max) |
| FOUNDATION | | | | | | | | | | | | |
| Wheat | 85 | 98 | 2 | 0.05 | 0.01 | None | None | None | 1 | 2 | None | 5 |
| Oats | 90 | 98 | 2 | 0.20 | 0.01 | — | None | None | 1 | 2 | None | 5 |
| Barley | 85 | 98 | 2 | 0.05 | 0.01 | — | None | None | 1 | 2 | None | 5 |
| Rye | 80 | 98 | 2 | 0.05 | 0.01 | — | None | None | 1 | 2 | None | 5 |
| Triticale | 80 | 98 | 2 | 0.05 | 0.01 | None | None | None | 1 | 2 | None | 5 |
| REGISTERED | | | | | | | | | | | | |
| Wheat | 85 | 98 | 2 | 0.1 | 0.02 | None | 2/lb. | None | 1 | 4 | 0 | 5 |
| Oats | 90 | 98 | 2 | 0.3 | 0.02 | — | 2/lb. | None | 1 | 4 | 0 | 5 |
| Barley | 85 | 98 | 2 | 0.1 | 0.02 | — | 2/lb. | None | 1 | 4 | 0 | 5 |
| Rye | 80 | 98 | 2 | 0.1 | 0.02 | — | 2/lb. | None | 1 | 4 | 0 | 5 |
| Triticale | 80 | 98 | 2 | 0.1 | 0.02 | None | 2/lb. | None | 1 | 4 | 0 | 5 |
| CERTIFIED | | | | | | | | | | | | |
| Wheat | 85 | 98 | 2 | 0.2 | 0.05 | None | 5/lb. | None | 1 | 8 | 0 | 10 |
| Oats | 90 | 98 | 2 | 0.5 | 0.05 | — | 5/lb. | None | 1 | 8 | 0 | 10 |
| Barley | 85 | 98 | 2 | 0.2 | 0.05 | — | 5/lb. | None | 1 | 8 | 0 | 10 |
| Rye | 80 | 98 | 2 | 0.2 | 0.05 | — | 5/lb. | None | 1 | 8 | 0 | 10 |
| Triticale | 80 | 98 | 2 | 0.2 | 0.05 | None | 5/lb. | None | 1 | 8 | 0 | 10 |

¹ Other varieties shall include seeds that can be differentiated from the variety that is being analyzed, as described by the originator.

² This standard does not apply in the case of seeds of winter grains in spring grains or vice versa because of the effect of climate conditions.

³ The seedlots produced from fields found to contain such factors as jointed goatgrass, wild buckwheat, or hairy vetch in any small grain or dock in oats shall be subject to special handling, sampling, conditioning, and testing procedures as directed by the Association.

SOD

1. Purpose

The purpose of turfgrass certification is to provide a system by which participants may supply premium landscape quality vegetatively propagated turfgrass to the public consisting of kinds and varieties that are well adapted to Nebraska growing conditions.

2. Procedures and Regulations

The Association shall certify turfgrass for varietal identity, mechanical purity, and other measurable quality factors affecting performance. The general certification standards are basic and together with the following specific standards shall constitute the standards for certification of turfgrass in Nebraska. These standards shall apply to all turfgrass kinds which can be propagated vegetatively and are adapted to Nebraska.

3. Classes of Seed Recognized

- A. Foundation sod shall be the vegetative increase of breeder sod or seed.
- B. Registered sod shall be the vegetative increase of Foundation sod or seed.
- C. Certified sod shall be the vegetative increase of Foundation, Registered, or Certified sod or seed. Additional planting stock requirements for varieties of Kentucky bluegrass, Red fescue, Chewings fescue, and Tall fescue are included in IV B.

4. Application to Participate in Program

- A. To enroll any new field and establish its eligibility to be used for the production of certified quality turfgrass, a sod producer must submit to the Association at least **20 days in advance of seeding** the proposed field the following:
 - 1) An application form that has been completed and documents each proposed sod field to be established.
 - 2) An ASCS photo or map clearly establishing the identification and location of the proposed field.
 - 3) Only Sod Quality or higher labeled seedstocks are eligible for certification. Tags and invoices must be sent with the application.
- B. To participate in the certification program, a sod producer must submit to the Association no later than 4 weeks before lifting the following.
 - 1) An application form and a field record form on each field. A field history must accompany each application for field(s) previously established.
 - 2) An ASCS photo or map clearly establishing the identification and location of each field to be certified.
 - 3) Appropriate fees.

5. Land Requirements and Eligibility

- A. Unit of Certification - A field or portion of field to be inspected for certification of sod quality shall be planted, maintained, and harvested as prescribed in these standards and clearly defined by a boundary suitable to prevent mechanical mixtures.
- B. Isolation and Field Borders - A field to be eligible for inspection and production of certifiable sod shall be separated from any other perennial grass or objectionable plant species by a distinct boundary, at least five feet wide. The field boundaries shall be clearly marked at time of establishment and properly maintained throughout the life of the stand.
- C. A field to be eligible for the production of Foundation or Registered sod must have been inspected two (2) times and found free of all other perennial grass species and varieties for one year preceding the time of planting.
- D. A field to be eligible for the production of Certified sod must have been inspected prior to planting and found free of all other perennial grasses.

- E. Cropping History - Appropriate and effective management methods (e.g. crop rotation, fallow period, glyphosate herbicide, etc.) shall be used by the producer, prior to inspection, to control all noxious weeds and persistent objectionable grasses, including volunteer.
- F. No materials which could be a source of contaminating seeds, such as certain animal wastes, shall be applied during the establishment and productive life of the stand.

5. Cultivar (Variety) Requirements and Eligibility

- A. A field to be eligible for certification must be established (as applicable for the turfgrass kind) with a variety or blend of varieties or mixture of varieties/kinds that are well adapted to Nebraska growing conditions.
- B. The percentage of each variety (by weight) in the seeding blend or mixture shall be stated on the Seedling Application and verified by documentation at the time of establishment.
- C. Overseeding
 - 1) If overseeding is necessary to thicken original stand, the sod producer must use the same varieties in the same percentage of blend or mixture as originally seeded.
 - 2) An established field which is overseeded with a different variety or blend from that originally planted shall be ineligible to produce Certified sod for the life of the stand.

6. Source of Seed or Vegetative Stock

- A. Only a field planted with an acceptable source of seed or vegetative stock, as described in these standards, is eligible for certification.
- B. Sod Quality Certified seedstocks (Gold Label) or Foundation vegetative stocks, as applicable for the turfgrass kind, shall be required for all varieties. Only when Sod Quality seed is not available in normal seed trade channels for a variety or kind, as determined by the Association, may Certified seed be substituted.
- C. Establishing Source - The eligibility of the source, class, and quantity of seed or vegetative stock used in establishing a field must be verified. This shall be done by providing to the Association, on the Seedling Application, prior to seeding:
 - 1) A Sod Quality (Gold label) tag for each variety, blend, or mixture removed from the containers of seed that was planted, or
 - 2) A bill of lading, sales invoice, or letter of documentation listing complete information for source, certification class, lot number, and pounds of each seedlot or number of plugs/sprigs of vegetative stock planted.
- D. Blending or Mixing - The sod producer may use either a Nebraska Interagency Certified blend or mixture, or have the seed supplier mix the individual components, or mix the seed together themselves. Every effort should be made to ensure the seedlots are blended/mixed uniformly before seeding.
- E. Record keeping - The sod producer shall maintain a permanent record for each field (including seed tags/labels, sales invoice, or other evidence) establishing the variety, lot number, and source of seed or vegetative stock used to plant each field. Another useful and suggested reference is to keep a representative seed sample (at least two pounds) of the seedlot(s) used to establish each field for the life of the stand.

7. Labeling and Marketing Certified Turfgrass Sod

- A. Only designated areas of sod meeting or exceeding ALL requirements, as described in these standards, shall qualify to be labeled as Certified Quality.
- B. Official serially-numbered Certified Quality Sod Certificates are available on request from the Association office.
- C. The sod producer shall attach a Certified Quality Sod Certificate to the invoice or delivery ticket or bill of lading accompanying each sale. The sod producer may not provide a certificate after the turfgrass has been delivered.
- D. IMPORTANT - Any sod that is delivered without a Certified label, as appropriate, may not be claimed as being Certified even if all other requirements have been met.

8. Varietal Purity and Other Quality Factors

Maximum field allowance for other crops and weeds, other varieties or off-type plants of the same species, and other turfgrass species, when recognizable, are indicated in the following table.

| Factors | Maximum Permitted per Acre | | |
|---|----------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Other turfgrasses ¹ | 1 | 2 | 5 |
| Other Crops ² | None | None | None |
| Noxious/Objectionable weeds ³ | None | None | None |
| Objectionable plants ⁴ | 10 | 20 | 40 |
| <p>¹ Other turfgrasses shall include: (a) Other varieties or off-type plants of the species being inspected (b) species of turfgrasses other than the one being inspected, when recognizable.</p> <p>² Other Crops shall consist of all other kinds and varieties of perennial grasses.</p> <p>³ Unacceptable plants shall include primarily Primary, Prohibited, and Restricted noxious weeds of the Nebraska State Seed Law (seed General Standards) and other plants difficult to control selectively through cultural or chemical methods in turfgrass sod including nutsedge, nimblewill, goosegrass, smooth brome, orchardgrass, timothy, and bull thistle.</p> <p>⁴ Objectionable plants shall include crabgrass, dandelion, plantain, sheep sorrel, wood sorrel, ground ivy, yarrow, chickweed, speedwell, spurge, knotweed, purslane, healall, black medic, white clover, and any other broadleaf or grassy weed which may distract from sod quality or performance.</p> | | | |

SORGHUM AND SUDANGRASS

(Open-Pollinated Varieties)

1. Field Inspection

Each field shall be inspected by a representative of the Association at least twice during the growing season when variety purity and other quality factors can best be determined; first when the field is fully in bloom and again after the seed begins to assume a mature color. Additional inspections may be required at the discretion of the Association.

2. Field Standards

A. Isolation Requirements

Fields to be acceptable for the production of Foundation, Registered, or Certified seed shall have a minimum isolation distance of at least **1320 feet** from fields of any other variety or fields of the same variety of sorghum or sudangrass that do not meet the varietal purity requirements for certification. This includes off-type plants or weedy sorghums that may occur within the minimum distance.

B. Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted (Ratio of Heads) | | |
|---|------------------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Other Varieties (definite) ¹ | 1:50,000 | 1:35,000 | 1:20,000 |
| Other Varieties (doubtful) | 1:20,000 | 1:10,000 | 1:1,000 |
| Objectionable Other Crops ² | None | None | None |
| Primary and Prohibited Noxious Weeds ³ | None | None | None |
| Head Smut | None | None | 1:10,000 |

¹ Other varieties shall include off-type plants that can be differentiated from the variety that is being inspected, as described by the originator.
² Objectionable other crops shall include crop plants, the seed of which cannot be thoroughly removed by usual methods of conditioning and/or may be a source of contaminating pollen.
³ As listed in the General Standards. Includes Johnsongrass.

3. Seed Quality Standards

| Factors | Standards for Each Class | | |
|---------------------------------------|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure Seed (min %) | 98.5 | 98.5 | 98.0 |
| Inert matter ¹ (max %) | 1.5 | 1.5 | 2.0 |
| Total weed seeds ² (max %) | 0.1 | 0.1 | 0.1 |
| Primary and Prohibited noxious weeds | None | None | None |
| Total other crop seeds (max %) | 0.01 | 0.03 | 0.08 |
| Other crops ³ (max %) | 0.01 | 0.03 | 0.07 |
| Other varieties (max %) | 0.005 | 0.01 | 0.05 |
| Germination (min %) | 80 | 80 | 80 |

¹ The total inert shall not exceed 1.0% other than cracked seeds or shall not to exceed one smut ball (kernel smut) per pound.
² Weed seeds in sudan shall not exceed 25 per pound, except sunflower seed shall not exceed ten per pound.
³ Other crops shall not exceed 2 per pound for Foundation, 6 per pound for Registered, and 10 per pound for the Certified seed class.

SOYBEANS

1. Varietal Purity and Other Quality Factors

| Factors | Maximum Permitted in Each Class (Ratio of Plants) | | |
|--|--|--------------|--------------|
| | Foundation | Registered | Certified |
| Other Varieties ¹ | 0.1%(1:1,000) | 0.2%(2:1000) | 0.5%(5:1000) |
| Corn Plants with Developed Seed and Objectionable Weeds ² | None | None | None |
| Primary and Prohibited Noxious Weeds | None | None | None |
| Restricted Noxious Weeds ³ | Lack of evidence of control of weed seed production. | | |

¹ Other varieties shall include plants that can be differentiated from the variety that is being inspected, as described by the originator.
² The seed produced from fields found to contain corn plants with developed seeds, black nightshade, or other objectionable weeds shall be subject to special handling and conditioning procedures as directed by the Association.
³ A field containing an excessive (uncontrolled) population of Restricted Noxious weeds (as listed in the General Standards) shall be disqualified from certification.

2. Seed Quality Standards

| Factors | Standards for Each Class | | |
|--|--------------------------|------------|-----------|
| | Foundation | Registered | Certified |
| Pure Seed (min %) | 98.0 | 98.0 | 98.0 |
| Inert matter (max %) | 2.0 | 2.0 | 2.0 |
| Total other crop seeds (max %) | 0.20 | 0.30 | 0.60 |
| Other varieties ¹ (max %) | 0.10 | 0.20 | 0.50 |
| Other kinds (max/lb) | None | 3 | 3 |
| Corn kernels (max) | None | None | None |
| Total weed seed ² (max/lb) | 5 | 5 | 5 |
| Restricted noxious (max/lb) | 1 | 1 | 1 |
| Primary and Prohibited noxious (max) | None | None | None |
| Cocklebur or black nightshade ³ (max) | None | None | None |
| Germination ⁴ (min %) | 80 | 80 | 80 |

¹ Other varieties shall include seeds that can be differentiated from the variety that is being analyzed, as described by the originator. Seeds with off-colored coats or hila due to environmental conditions during production shall not be considered other varieties.
² The percent of total weed seed present shall not exceed 0.05% for any certified seed class.
³ The seedlots produced from fields found to contain corn plants with developed seed, black nightshade, cockleburs, or other objectionable weeds shall be subject to special handling, sampling, conditioning, and testing procedures as directed by the Association.
⁴ Minimum germination for an edible or large-seeded variety may be considered to be 70% at the discretion of the certifying agency.