

# 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 production 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 <sup>1</sup>	16 <sup>2</sup>

<sup>1</sup> minimum of 60 foot including border rows

<sup>2</sup> 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 table above 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 blocks 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 seed lots, as determined by the Association, may be contingent upon determination of percent hybridization and varietal purity using the following methods. The total purity standard for either method is 95% or greater. The organization conducting the testing must be approved by the Association.

- 1) Biochemical methods by lot and/or grade size
- 2) Field growouts by lot and/or 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

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 CORN<sup>1</sup>

## 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:

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<sup>1</sup> 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 2 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.

# 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 genetic 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 genetic 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 genetic male sterile line shall be a strain homozygous for a particular male sterile recessive allele.
- 6) The genetic 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 2 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.



# 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 <sup>2</sup> (feet)	Minimum Isolation Distance <sup>3</sup> (feet)		
		Foundation	Registered	Certified
All cross pollinated species	0	900	300	165 <sup>4</sup>
	9	600	225	100
	15	450	150	75
Strains at least 80% apomictic <sup>1</sup>	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

<sup>1</sup> Apomixis refers to a type of asexual production of seed, as in Kentucky bluegrass.  
<sup>2</sup> 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.  
<sup>3</sup> 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.  
<sup>4</sup> 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 <sup>1</sup>	.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 <sup>2</sup>	Lack of evidence of control of weed seed production.		

<sup>1</sup> Other varieties shall be considered to include plants that can be differentiated from the variety that is being grown for seed.  
<sup>2</sup> 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 <sup>1</sup>	% 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 <sup>2</sup>		Seed/lb of Restricted Noxious Weeds (max)		% Annual Brome <sup>3</sup> (max)		Total Viable <sup>4</sup>	
			F/R	C	F/R	C	F/R	C	F/R	C	F/R	C	F/R	C	F/R	C		F/R
Bluegrass, Kentucky	A	95	0.1	2.0	0.1	2.0	0.1	0.5	0.1	0.5	0.3	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.25	0.5	None	9	45	0.15	0.4	80
Thickspike <sup>5</sup>	C	90	0.2	1.0	0.1	1.0	0.2 <sup>5</sup>	1.0 <sup>5</sup>	0.2 <sup>5</sup>	1.0 <sup>5</sup>	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	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	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	0.25	0.5	None	9	45	0.15	0.4	80

<sup>1</sup> A=strains at least 80% apomictic, C=cross-pollinated species, S=highly self-fertile species.  
<sup>2</sup> 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.  
<sup>3</sup> Annual bromes include Japanese chess, hairy chess, downy brome, and cheat.  
<sup>4</sup> Includes dormant seed.  
<sup>5</sup> 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 <sup>1</sup>	Pure Live Seed Index <sup>2</sup> (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 Prohibited Noxious Weeds (max)	Seeds/lb of Restricted Noxious Weeds (max)	
<b>FOUNDATION:</b>										
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
Grama, Blue	C	24	0.2	0.1	0.1	0.1	0.1	1.0	None	9
Grama, Sideoats <sup>3</sup>	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
<b>REGISTERED:</b>										
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
Grama, Blue	C	24	1.0	1.0	0.1	0.1	0.1	1.0	None	9
Grama, Sideoats <sup>3</sup>	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
<b>CERTIFIED:</b>										
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
Grama, Blue	C	24	2.0	2.0	0.5	0.5	0.5	2.0	None	45
Grama, Sideoats <sup>3</sup>	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

<sup>1</sup> C=Cross-pollinated species.

<sup>2</sup> 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.

<sup>3</sup> In determining germination for sideoats grama, the seed unit shall be defined as a spike containing one or caryopses.

# INDUSTRIAL HEMP

## 1. Application of Genetic Certification Standards

- A. All production of industrial hemp crops are subject to license application approval(s) that may be required by regulatory authorities.
- B. Only varieties of industrial hemp approved by regulatory authorities are eligible for certification.
- C. The allowable area of an industrial hemp research area or production field may be determined by state or local agencies.
- D. Growers may be required by regulatory agencies to obtain THC test results according to applicable regulations. Growers may be required to submit these results to NCIA before certification labels are issued.

## 2. Land Requirements

- A. Fields for Foundation and Registered classes of industrial hemp seed must not be planted on land which in the previous 3 years grew a crop of industrial hemp.
- B. Crops for Certified seed must not be grown on land which:
  1. In the preceding year produced a certified crop of the same variety.
  2. In either of the preceding 2 years produced a non-certified crop of industrial hemp or a different variety of industrial hemp.
- C. Weeds
  1. The presence of Broomrape (*Orobanche* spp.) in an industrial hemp field may be cause for declining certified status.

## 3. Field Standards

- A. Crop Inspection
  1. It is the grower's responsibility to ensure that fields are inspected by an authorized inspector at least once prior to swathing or harvesting, except in the case of Foundation, Registered, and Certified monoecious types and unisexual female hybrids and Foundation dioecious types, in which 2 inspections are required.
  2. A field that is cut, swathed or harvested prior to crop inspection is not eligible for certification.
  3. Fields must be inspected at a stage of growth when varietal purity is best determined. Crops not inspected at the proper stage for best determining varietal purity may be cause for declining certified status.
    - a. First inspection for all classes of monoecious types must be made just before or at early flowering. First inspection for all classes of dioecious types must be made after flowering when male plants are beginning to senesce.
    - b. Second inspection for all classes of monoecious types, and the Foundation class of dioecious types must be made when seeds are well forming.
    - c. Isolation areas will be inspected for volunteer industrial hemp plants on each inspection.
- B. Isolation
  1. The area, density, stage of maturity and location of any contaminating pollen source is an important factor in cross pollination, and therefore must be noted on the field inspection report for consideration in determining certification status. There shall not be any *Cannabis sativa* L. plants within 330 feet of the crop and not more than 10 plants per acre beyond 330 feet within the isolation requirement.
  2. The required isolation as outlined in Table 1 must be in place prior to the time of flowering and crop inspection.

Table 1 – Minimum Isolation Distances Required Between Inspected Industrial Hemp and Other Crops

Inspected Crop	Other Crops	Isolation Distance Required (feet)
<b>Dioecious type – Foundation</b>	- Different varieties of Industrial Hemp - Non-certified crop of Industrial Hemp	15,840
	- Lower certified class seed crop of same variety	6,500
	- Same class of certified seed of same variety	10
<b>Dioecious type – Registered</b>	- Different varieties of Industrial Hemp - Non-certified crop of Industrial Hemp	15,840
	- Seed crop of same variety that meets Certified standards for varietal purity	5,280
	- Seed crop of same variety that meets Registered standards for varietal purity	3
<b>Dioecious type – Certified</b>	- Different varieties of Industrial Hemp - Non-certified crop of Industrial Hemp	2,640
	- Planted with certified seed of the same variety that meets Certified standards for varietal purity	660
	- Seed crop of same variety that meets Certified standards for varietal purity	3
<b>Monoecious type – Foundation</b>	- Dioecious variety of Industrial Hemp - Non-certified crop of Industrial Hemp	15,840
	- Other Monoecious varieties - Lower certified class seed crop of same variety	10,560
	- Same class of certified seed of same variety	20
<b>Monoecious type – Registered</b>	- Dioecious variety of Industrial Hemp - Non-certified crop of Industrial Hemp	15,840
	- Different varieties of the same type of Industrial Hemp (Monoecious or Female Hybrid)	6,500
	- Seed crop of same variety that meets Certified standards for varietal purity	3,250
	- Seed crop of same variety that meets Registered standards for varietal purity	3
<b>Monoecious type – Certified</b>	- Dioecious variety of Industrial Hemp - Non-certified crop of Industrial Hemp	3,250
	- Different varieties of the same type of Industrial Hemp (Monoecious or Female Hybrid) - Planted with certified seed of the same variety that meets Certified standards for varietal purity	660
	- Seed crop of same variety that meets Certified standards for varietal purity	3

C. Impurity Standards

1. Impurities should be removed prior to crop inspection.
2. Any combination of impurities may be reason for declining certified status.
3. Table 2 indicates the maximum number of impurities permitted by AOSCA in approximately 10,000 plants of the inspected crop. The inspector makes at least 6 counts (10,000 plants each) or the equivalent to determine the number of impurities. The resulting average of these counts must not exceed the maximum impurity standards in Table 2.

Table 2 - Maximum Impurity Standards

Inspected Crop	Maximum Impurity Standards per 10,000 plants Industrial Hemp Seed Crops	
	Maximum Number of Dioecious Male Plants Shedding Pollen	Maximum Number of Other Impurities
Dioecious type - Foundation	–	3
Dioecious type - Registered	–	10
Dioecious type - Certified	–	20
Monoecious type - Foundation	1	3
Monoecious type - Registered	2	10
Monecious type - Certified	100	20

#### 4. Seed Standards

Industrial Hemp Seed Standards Standards for Each Class			
Factor	Foundation	Registered	Certified
Pure seed (minimum)	98.00%	98.00%	98.00%
Inert matter (maximum)*	2.00%	2.00%	2.00%
Weed seeds (maximum)	0.10%	0.10%	0.10%
Total other crop seeds (maximum)	0.01%	0.03%	0.08%
Other varieties (maximum)	0.005%	0.01%	0.05%
Other kinds (maximum)**	0.01%	0.03%	0.07%
Germination (minimum)	80.00%	80.00%	80.00%
* Inert matter shall not include more than 0.5 percent of material other than seed fragments of the variety under consideration.			
** Other kinds shall not exceed 2 per lb. for Foundation, 6 for Registered; 10 for Certified.			

#### Guidelines for the Production of Certified Industrial Hemp Seed

##### 1. Definitions

- Industrial Hemp (*Cannabis sativa L. supsp. sativa.*) includes varieties of these kinds:
  - Dioecious type: with male and female flowers on separate plants
  - Monoecious type: with male and female flowers on the same plant.
  - (Unisexual Female) Hybrids: with sterile male and fertile female flowers on the same plant.
- “Approved Cultivar” means any variety designated as eligible for production by federal or local regulatory authorities.

- “THC” means delta-nine ( $\Delta 9$ ) tetrahydrocannabinol, which is the component of Industrial Hemp regulated by federal or local regulatory authorities.
- Although traditionally a crop with a Dioecious plant type, many Monoecious varieties of industrial hemp (*Cannabis sativa L. subsp. sativa*) have been developed. Industrial hemp is sexually polymorphic and often produces many different ratios of intersexual plant types that can increase roguing requirements. Variety descriptions normally define these ratios.

## 2. Foundation Seed Production

Any means of processing or conditioning of seed from a Foundation production area which may contaminate the varietal purity of the seed is prohibited.

### Areas of Foundation Fields

When unforeseen circumstances do not permit proper maintenance of the entire field, it is recommended that the entire area be reduced by destroying part of the field or by isolating a part to meet the requirements of a lower status of certified seed. The remainder of the field must meet the requirements for Foundation field production.

## 3. Recommended Production Procedures

### Field Planting

- a) Fields should be planted to facilitate inspection, roguing, and harvesting.
- b) Fields should be planted in areas easily accessible for frequent maintenance and to provide the maximum protection from outside sources of contamination, such as roadways and building sites.
- c) Regulations for land requirements are minimum standards and caution is necessary in choosing land, as volunteer growth from previous crops may vary according to local conditions.
- d) The regulations for isolation are minimum standards. It is always to the grower's advantage to provide more isolation than required. When planting Foundation fields, specific requirements may influence the location and size of the field. It is a safeguard if adjacent crops are the same variety as the field and are inspected for certified status.

### Roguing

- a) The field must be thoroughly and intensively rogued many times throughout the crop season.
- b) Off-type male flowers must be removed before the receptive stage of female flowers in the inspected crop.
- c) The numbers and kinds of plants removed should be recorded and described on the appropriate report.
- d) All male flowers rogued from the crop must be removed from the production area and burial is recommended.
- e) Regrowth of rogued flowers or plants must be prevented.

### Harvesting, Cleaning, and Storing

- a) A seed grower should have access to the necessary equipment for harvesting and cleaning the seed from the field in such a manner as to ensure that the varietal purity of seed is maintained.
- b) The seed should be stored, in compliance with federal or local regulations, in a clean, cool, dry area.
- c) The seed containers should be labeled for identification.

It is recommended that not more than one variety of Industrial Hemp be grown under the management of one grower.



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

B. Varietal Purity and Other Quality Factors

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

<sup>1</sup> Other varieties and off-types shall include those plants that can be differentiated from the variety being inspected as described by the originator.

<sup>2</sup> 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 <sup>1</sup> (max %)	0.005	0.01	0.02
Other kinds (max %)	0.005	0.01	0.02
Germination (min %)	80	80	80

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

# LENTIL AND CHICKLING VETCH

## 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 certifiable field shall be isolated from any other variety or uncertified seed of the same variety 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 <sup>1</sup> (max)	1:10,000	1:2000	1:1000
Other crops and objectionable weeds (inseparable) <sup>2</sup>	None	1:2000	1:1000
Primary and Prohibited noxious weeds	None	None	None
Restricted noxious weeds <sup>3</sup>	Lack of evidence of control of weed seed production.		
<sup>1</sup> Other varieties and off-types shall include plants that can be differentiated from the variety being inspected as described by the originator. <sup>2</sup> Includes any other crops or objectionable weeds of which the seed cannot be thoroughly removed by the usual methods of conditioning. <sup>3</sup> A field containing an excessive (uncontrolled) population of Restricted noxious weeds (as listed in the General Standards) shall be disqualified from certification.			

## 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 %) <sup>2</sup>	None	0.1	0.25
Primary and Prohibited noxious and objectionable weeds (max)	None	None	None
Total other crops (max %)	None	0.05	0.2
Other varieties <sup>1</sup> (max %)	0.1	0.2	0.2
Germination (min %)	80	80	80
Ascochyta Blight <sup>3</sup>	N.S.	N.S.	N.S.
<sup>1</sup> Other varieties and off-types shall include seeds that can be differentiated from the variety being analyzed, as described by the originator. <sup>2</sup> Total weed seed shall not exceed 10 per lb. <sup>3</sup> N.S. - No Standard, testing and treating of all seed is recommended.			

# 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 certifiable field shall be isolated from any other variety or uncertified seed of the same variety 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 <sup>1</sup>	1:2000	1:1000	1:500
Other crops and objectionable weeds (inseparable) <sup>2</sup>	None	None	None
Primary and Prohibited noxious weeds	None	None	None
Diseases			
Mosaic (common)	None	1:200	1:100
Anthrachnose	None	1:10,000	1:5000
Bacterial Blights	None	None	1:10,000
Wilt	None	1:10,000	1:5,000
Restricted noxious weeds <sup>3</sup>	Lack of evidence of control of weed seed production.		
<sup>1</sup> Other varieties and off-types shall include plants that can be differentiated from the variety being inspected as described by the originator. <sup>2</sup> Includes any other crops or objectionable weeds, including black nightshade and cocklebur, of which the seed cannot be thoroughly removed by the usual methods of conditioning. <sup>3</sup> A field containing an excessive (uncontrolled) population of Restricted noxious weeds (as listed in the General Standards) shall be disqualified from certification.			

## 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 <sup>1</sup> (max %)	0.05	0.1	0.2
Other kinds (max %)	None	0.05	0.1
Germination + hard seed (min %)	80	80	80
<sup>1</sup> 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 <sup>1</sup>	0.02% (1:5,000)	0.05% (1:2,000)	0.1% (1:1,000)
Inseparable Other Crops <sup>2</sup>	0.01% (1:10,000)	0.01% (1:10,000)	0.05% (1:2,000)
Objectionable Other Crops and Weeds <sup>3</sup>	None	—	—
Primary and Prohibited Noxious Weeds	None	None	None
Restricted Noxious Weeds <sup>4</sup>	Lack of evidence of control of weed seed production.		
Loose Smut or Bunt <sup>5</sup>	0.1 (1:1,000)	0.3 (3:1,000)	0.5 (5:1,000)

<sup>1</sup> Other varieties shall include plants that can be differentiated from the variety that is being inspected as described by the originator.  
<sup>2</sup> 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.  
<sup>3</sup> 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.  
<sup>4</sup> Fields containing excessive (uncontrolled) amounts of Restricted Noxious Weeds (as listed in the General Standards) shall be disqualified from certification.  
<sup>5</sup> 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 <sup>1</sup> (max)	% Other kinds of crops (max)	Rye/Triticale (max)	Other small grains <sup>2</sup> (max)	Seeds/lb of primary & prohibited noxious weeds (max)	Seeds/lb of restricted noxious weeds (max)	Seeds/lb of wild buckwheat <sup>3</sup> (max)	Seeds/lb of jointed goatgrass <sup>3</sup> (max)	Seeds/lb of total weed seed (max)
FOUNDATION	Wheat	98	2	0.05	0.01	None	None	None	1	2	None	5
	Oats	98	2	0.20	0.01	—	None	None	1	2	None	5
	Barley	98	2	0.05	0.01	—	None	None	1	2	None	5
	Rye	98	2	0.05	0.01	—	None	None	1	2	None	5
	Triticale	98	2	0.05	0.01	None	None	None	1	2	None	5
REGISTERED	Wheat	98	2	0.1	0.02	None	2/lb.	None	1	4	0	5
	Oats	98	2	0.3	0.02	—	2/lb.	None	1	4	0	5
	Barley	98	2	0.1	0.02	—	2/lb.	None	1	4	0	5
	Rye	98	2	0.1	0.02	—	2/lb.	None	1	4	0	5
	Triticale	98	2	0.1	0.02	None	2/lb.	None	1	4	0	5
CERTIFIED	Wheat	98	2	0.2	0.05	None	5/lb.	None	1	8	0	10
	Oats	98	2	0.5	0.05	—	5/lb.	None	1	8	0	10
	Barley	98	2	0.2	0.05	—	5/lb.	None	1	8	0	10
	Rye	98	2	0.2	0.05	—	5/lb.	None	1	8	0	10
	Triticale	98	2	0.2	0.05	None	5/lb.	None	1	8	0	10

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

<sup>2</sup> 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.

<sup>3</sup> 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.

# SOYBEANS

## 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 certifiable field shall be isolated from any other soybean variety or uncertified seed of the same variety by a distance adequate to prevent mechanical mixture.

### A. Varietal Purity and Other Quality Factors

Factors	Maximum Permitted in Each Class (Ratio of Plants)		
	Foundation	Registered	Certified
Other varieties <sup>1</sup>	0.1%(1:1,000)	0.2%(2:1000)	0.5%(5:1000)
Corn plants with developed seed and objectionable weeds <sup>2</sup>	None	None	None
Primary and Prohibited noxious weeds	None	None	None
Restricted noxious weeds <sup>3</sup>	Lack of evidence of control of weed seed production.		

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

## 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 other crop seeds (max %)	0.20	0.30	0.60
Other varieties <sup>1</sup> (max %)	0.10	0.20	0.50
Other kinds (max/lb )	None	3	3
Corn kernels (max)	None	None	None
Total weed seed <sup>2</sup> (max/lb)	5	5	5
Restricted noxious (max/lb)	1	1	1
Primary and Prohibited noxious (max)	None	None	None
Cocklebur or black nightshade <sup>3</sup> (max)	None	None	None
Germination <sup>4</sup> (min %)	80	80	80

- <sup>1</sup> 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.
- <sup>2</sup> The percent of total weed seed present shall not exceed 0.05% for any certified seed class.
- <sup>3</sup> The seedlots produced from fields found to contain corn plants with developed seed, black nightshade, cocklebur, or other objectionable weeds shall be subject to special handling, sampling, conditioning, and testing procedures as directed by the certifying agency.
- <sup>4</sup> Minimum germination for an edible or large-seeded variety may be considered to be 70% at the discretion of the certifying agency.

