ALFALFA SEED CERTIFICATION STANDARDS

I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The General Seed Certification Standards are basic and together with the following specific standards constitute the standards for certification of alfalfa seed.

II. LAND REQUIREMENTS

A. Breeder seed for production of Foundation seed shall be planted on land on which no alfalfa was grown or planted during the 4 years prior to the one in which the present stand was planted.

B. Foundation seed for the production of Registered seed shall be planted on land on which no alfalfa was grown or planted during the three (3) years prior to the one in which the present stand was planted.

C. Breeder, Foundation or Registered seed for the production of Certified seed shall be planted on land on which no alfalfa was grown or planted during the one (1) year prior to the one in which the present stand was planted. At least two (2) years must elapse between destruction of varieties of dissimilar adaptation and establishment of the stand for the production of the Certified class of seed. Alfalfa must be planted in distinct rows.

D. No manure or other contaminating material shall be applied the year previous to seeding or during the establishment and productive life of the stand.

E. For all classes of seed, the land must be free of volunteer alfalfa plants the year prior to establishment.

III. FIELD INSPECTION

A. A seedling inspection will be made during the seeding year to check for volunteer plants, isolation requirements and potential weed problems.

B. Seed fields shall be inspected at least once prior to harvest, preferably at flowering time when varietal purity can best be determined. Harvest operations, including swathing, desiccation, and combining, prior to field inspection or reinspection are cause for rejection of the field.

C. **Application for certification must be submitted by May 15 of each year in which seed is produced (Late summer or fall plantings are due within 60 days after planting).**

IV. FIELD STANDARDS

A. General

1. Unit of Certification

A portion of a field may be certified if the area to be certified is clearly defined.

2. Isolation

Minimum distance from a different variety or a field of the same variety that does not meet the varietal purity standards for certification shall be:

Seed Classes	Fields of less than 5 acres	Fields of more than 5 acres
	Isolation in Feet	
Foundation	900 feet	600 feet
Registered	450 feet	300 feet
Certified	165 feet	165 feet*

* **For Certified class only:** When the isolation zone (which is calculated by multiplying the length of the common border with other varieties of alfalfa by the average width of the certified field falling within 165 feet isolation distance requirement) is less than 10% for the entire field, no isolation is required - only a definite separation.

3. Length of Stand

Limitations on the age of stand and pedigree classes of seed through which a given variety may be multiplied for both inside and outside the region of adaptation shall be specified by the originator or his designee. Certified seed production outside the region of adaptation shall not exceed six years if not otherwise specified by the originator or his designee.

4. Volunteer Plants

The presence of volunteer alfalfa plants shall be cause for rejection or re-classification of a seed field.

B. Specific Field Requirements

Factor	Maximum Permitted in Each Class (ratio of plants) FDN	REG	CERT
Other varieties[1]	none[2]	1:400	1:200
Sweetclover plants	none[2]	10 per acre	10 per acre
Dodder and other Noxious Weeds	*	*	*

[1] Other varieties shall be considered to include plants that can be differentiated from the variety being inspected.

[2] None tolerance means none found during the normal inspection procedure. None is not a guarantee to mean the field inspected is free of the factor.

* Fields must show that a reasonable effort has been made to control dodder and other noxious weeds. Due to the modern cleaning equipment now available, a tolerance is permitted in the field, but the seed standards permit no tolerance of noxious weeds.

* Dodder must be flagged and avoided at harvest or controlled.

* At the discretion of the inspector, a level of noxious or objectionable plants present in a field may require the inspector to request additional seed testing.

The following weeds have a negative impact on seed production of this crop. The weeds marked with an asterisk can impact certification of this crop. The other weeds listed are difficult to separate, and can result in increased seed loss during cleaning. Control of these weeds is recommended.

Canada thistle*, Russian knapweed*, dodder*, whitetop*, sweetclover*, swainsonpea*, docks, red clover, wild-proso millet*, perennial pepperweed (tall whitetop)*, pigweed, lanceleaf sage, venice mallow, mustards, sunflower.

V. Seed Standards

Seed Factors	Standards for Each Class		
	FDN	REG	CERT
Pure Seed (Min.)	99.50%	99.50%	99.50%
Inert Matter (Max.)	0.50%	0.50%	0.50%
Total Other Crop Seeds (Max.)	0.20%	0.20%	2.00%
Other Varieties (Max.)	0.10%	0.10%	2.00%
Other Crops (Max.)	0.10%	0.10%	0.10%
Prohibited Noxious Weeds[2]	none[1]	none[1]	none[1]
Restricted Noxious Weeds[3]	none[1]	none[1]	18/lb
Weed Seed (Max.)	0.10%	0.20%	0.25%
Total Germination & Hard Seed (Min.)	85.00%	85.00%	85.00%

[1] None tolerance means none found in the sample submitted. None is not a guarantee to mean the lot inspected is free of the factor.

[2] None of the Prohibited Noxious Weeds listed in the General Standards, nor any dodder, dogbane, or johnsongrass allowed in any class of seed.

[3] See Restricted Weed list in the General Standards. Docks (Rumex spp.) shall also be included.

HYBRID ALFALFA SEED CERTIFICATION STANDARDS

I. APPLICATION AND AMPLIFICATION OF GENERAL CERTIFICATION STANDARDS

The General Seed Certification Standards are basic and together with the following specific standards constitute the standards for certification of alfalfa seed.

A. The General standards are modified as follows:

a. Standards applicable to specific crop varieties shall apply to the production of pollen parent (C) strains only.

B. Designation of Classes of seed

a. A commercial hybrid is one to be planted for any use except seed production.

b. Only the Certified class is recognized in commercial hybrid seed.

c. A commercial hybrid to be certified must be produced from certified Foundation seed that has been field inspected. Fields producing Foundation seed for parent stock may be produced bordering a production field of the same hybrid while maintaining the required isolation distance from other alfalfa production. Cytoplasmic male sterile female lines produced from clones or cuttings are exempted from the requirement of being the product of a certified Foundation seed field that has been field inspected.

d. Definition of parental types: (A) Male sterile; (B) A strain which, when crossed with an (A) strain, maintains male sterility in the production of Foundation seed; (C) Any male fertile strains used as the male parent in the production of a commercial hybrid

II. LAND REQUIREMENTS

A. Foundation seed for the production of Certified seed shall be planted on land on which no alfalfa was grown or planted during the one (1) year prior to the one in which the present stand was planted. At least two (2) years must elapse between destruction of varieties of dissimilar adaptation and establishment of the stand for the production of the Certified class of seed. (See Section VI-D, General Standards, pg. 6, for further details). Alfalfa must be planted in distinct rows.

B. No manure or other contaminating material shall be applied the year previous to seeding or during the establishment and productive life of the stand.

C. For all classes of seed, the land must be free of volunteer alfalfa plants the year prior to establishment.

III. FIELD INSPECTION

A. A seedling inspection will be made during the seeding year to check for volunteer plants, isolation requirements and potential weed problems.

B. The fields shall be assessed for pollen production of the male sterile parent each year during full bloom (at least 75% of the plants in bloom), but before appreciable seed set.

C. Two hundred plants shall be sampled to determine the pollen production index (PPI). If the index is near the 95% or 75% limits, another 100 plants shall be sampled and included in the calculation. Sequential sampling shall be taken in such a manner that they are representative of the entire field. See IV A 3.

D. Seed fields shall be inspected at least once prior to harvest, preferably at flowering time when varietal purity can best be determined. Harvest operations, including swathing, desiccation, and combining, prior to field inspection or reinspection are cause for rejection of the field.

E. Application for certification must be submitted by May 15 of each year in which seed is produced (Late summer or fall plantings are due within 60 days after planting).

IV. FIELD STANDARDS

A. General

1. Unit of Certification

   A portion of a field may be certified if the area to be certified is clearly defined.

2. Isolation

   a. Seed stocks

      i. Minimum isolation distance for the production of Foundation seed stocks ((A) x (B)) shall be 1,320 feet. A (B) parent border is desirable.

   b. Commercial hybrids and (C) strains

      i. Minimum isolation distance for fields of 5 acres or less shall be 165 feet.

      ii. Minimum isolation distance for fields of more than 5 acres shall be 165 feet with the following exception. When the isolation zone (which is calculated by multiplying the length of the common border with other varieties of alfalfa by the average width of the certified

field falling within 165 feet isolation distance requirement) is less than 10% for the entire field, no isolation is required - only a definite separation.

c. Inter-planted blocks between the seed and male fertile strains

i. There shall be at least 6 feet between the (A) and (B) strains in a crossing block or between the seed and pollen strains in a hybrid production field, and they shall be managed and harvested to prevent mixing.

d. The ratio of male sterile to pollen strains shall not be more than 2:1.

3. Pollen production

a. Maximum pollen production index (PPI) permitted*

i. Foundation (A) - 14

ii. Certified ((A)x(B))x(C)

1. 95% hybrid - 6

2. 75% hybrid - 42

iii. Certified production fields (composite of male and female)

1. 75% hybrid – 25**

* Flowers shall be examined by tripping them on an instrument such as a red pot label or black metal strip. Flowers are rated as producing pollen or no pollen production. The PPI is equal to the number of pollen producing flowers out of 100 flowers tripped.

** Crops producing certified seed that use a production method whereby the male and female lines are planted as a composite shall be rejected if the pollen production index exceeds 30. Crops with a pollen production index in excess of 25 but less than 30 must be blended with an appropriate amount of seed to reach a pollen production index of 25 in order to be eligible for certification.

4. Length of Stand

Limitations on the age of stand and pedigree classes of seed through which a given variety may be multiplied for both inside and outside the region of adaptation shall be specified by the originator or his designee. Certified seed production outside the region of adaptation shall not exceed six (6) years if not otherwise specified by the originator or his designee.

5. Volunteer Plants

The presence of volunteer alfalfa plants shall be cause for rejection or re-classification of a seed field.

B. Specific Field Requirements

	Maximum Permitted in Each Class (ratio of plants)		
Factor	FDN	REG	CERT
Other varieties[1]	none[2]	1:400	1:100
Sweetclover plants	none[2]	10 per acre	10 per acre
Dodder and other Noxious Weeds	*	*	*

[1] Other varieties shall be considered to include plants that can be differentiated from the variety being inspected.

[2] None tolerance means none found during the normal inspection procedure. None is not a guarantee to mean the field inspected is free of the factor.

* Fields must show that a reasonable effort has been made to control dodder and other noxious weeds. Due to the modern cleaning equipment now available, a tolerance is permitted in the field, but the seed standards permit no tolerance of noxious weeds.

* Dodder must be flagged and avoided at harvest or controlled.

* At the discretion of the inspector, a level of noxious or objectionable plants present in a field may require the inspector to request additional seed testing.

The following weeds have a negative impact on seed production of this crop. The weeds marked with an asterisk can impact certification of this crop. The other weeds listed are difficult to separate, and can result in increased seed loss during cleaning. Control of these weeds is recommended.

Canada thistle*, Russian knapweed*, dodder*, whitetop*, sweetclover*, swainsonpea*, docks, red clover, wild-proso millet*, perennial pepperweed (tall whitetop)*, pigweed, lanceleaf sage, venice mallow, mustards, sunflower.

V. Seed Standards

Seed Factors	Standards for Each Class		
	FDN	REG	CERT
Pure Seed (Min.)	99.50%	99.50%	99.50%
Inert Matter (Max.)	0.50%	0.50%	0.50%
Other Crops (Max.)	0.10%	0.10%	0.10%
Prohibited Noxious Weeds[2]	none[1]	none[1]	none[1]
Restricted Noxious Weeds[3]	none[1]	none[1]	18/lb
Weed Seed (Max.)	0.10%	0.20%	0.25%
Total Germination & Hard Seed (Min.)	85.00%	85.00%	85.00%

(1) None tolerance means none found in the sample submitted. None is not a guarantee to mean the lot inspected is free of the factor.

(2) None of the Prohibited Noxious Weeds listed in the General Standards, nor any dodder, dogbane, or johnsongrass allowed in any class of seed.

(3) See Restricted Weed list in the General Standards. Docks (Rumex spp.) shall also be included.