

**CLOVER, BIRDSFOOT TREFOIL, SAINFOIN
AND CICER MILKVETCH STANDARDS**

(As of February 2017)

The General Seed Certification Standards, as adopted by the Montana Seed Growers Association, are basic and together with the following specific standards constitute standards for certification of clover (*Trifolium spp.*), birdsfoot trefoil (*Lotus corniculatus*), sainfoin (*Onobrychis viciifolia*) and cicer milkvetch (*Astragalus cicer*) seed.

I. Land Requirements

- A. During the year immediately prior to the seeding of any class of seed, the land must be free of volunteer plants of that crop. Do not apply manure or other contaminating material to the land in preparation for planting of all certified classes or during the productive life of the stand.
- B. A crop of the same kind must not have been grown or planted on the land for the years designated prior to establishment for the production of Foundation, Registered and Certified seed classes as shown in the following table:

Crop	Fdn	Years	
		Reg	Cert
Red Clover	5	NA*	2
White Clover	Never	NA*	4
Birdsfoot Trefoil	5	NA*	2
Sainfoin	5	3	2
Cicer Milkvetch	5	3	2

*NA - Not applicable--no registered class grown.

II. Isolation

A field producing foundation, registered or certified seed must have the following minimum isolation distance from fields of any other variety or fields of the same variety that do not meet the varietal purity requirements for certification.

Kind & Classes	Isolation -- distances in feet*	
	Fields of <5 acres	Fields of >5 acres
Red clover, white clover, birdsfoot trefoil		
Foundation	1320	1320
Registered	Not produced	Not produced
Certified	330	165
Sainfoin		
Foundation	900	600
Registered	450	300
Certified	330	165
Cicer milkvetch		
Foundation	1320	1320
Registered	660	330
Certified	330	165

* The isolation distance between classes of the same crop variety that crop may be reduced to 25% of that shown except that 15 feet is the minimum.

III. Field Standards - General

- A. A portion of a field may be certified if the area to be certified is clearly defined. Portions of a field not meeting isolation requirements for certification must not be harvested as any class of certified seed.

- B. Fields rejected for certification for reasons other than genetic purity may be eligible for recertification and inspection the following year provided the cause of rejection is removed.
- C. Volunteer plants may be the cause of rejection or reclassification of any legume seed field.

IV. Field Standards - Specific

Factor for each legume crop named (except birdsfoot trefoil)	Ratio of Plants - Maximum Permitted		
	Fdn	Reg	Cert
Other varieties*	1:2000	1:1000	1:200
Sweetclover-plants	None**	5/acre	10/acre
Birdsfoot trefoil			
Other varieties	1:2000	1:1000	1:200
Sweetclover-plants	None**	None**	5/acre

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

** `None' means none found during the normal inspection procedures.
`None' is not a guarantee to mean the lot inspected is free of the factor.

V. Length of Stand

Red Clover: Eligibility for certification of any seed class is limited to two successive seed crops, following establishment year.

White Clover: Four successive seed crops of the certified class will be permitted for certification where seed is produced from plants initially established. A foundation and/or registered seeding may produce only two successive seed crops following seeding, except that each class may be classified to the next lower class after being harvested for two years.

Birdsfoot Trefoil: Certified class of seed production outside the region of adaptation shall not exceed four successive years if not otherwise specified by the originator or the originator's designee. The region of adaptation shall be determined by the breeder.

Sainfoin: Fields of all classes of certified seed may produce five successive seed crops immediately following establishment. (NOTE: Remont does not have a registered class.)

Cicer Milkvetch: Production of each respective class may continue so long as the genetic purity is maintained.

VI. Field Inspection

Fields must be clean. Remove inseparable other crops or off-type plants before inspection. Field inspection will be made on seedlings (new plantings before August 1) and each year that a seed crop is to be produced.

VII. Preparation of Seed for Final Certification

- A. Cleaning
 1. Clean all seed at an approved plant authorized by the MSGA. A list of authorized cleaning plants is available through the MSGA office or website www.mtseedgrowers.org.
 2. Seed delivered to the cleaning plant by grower must be identified by variety and certification number. A copy of the grower's Application for Certification or field inspection form will suffice.
- B. Seed Sample for Grade Determination
 1. Submit a cleaned, ½ pound seed sample for clover, birdsfoot trefoil, and cicer milkvetch or a 2 ½ pound sample of sainfoin labeled with grower name, cleaning plant name, certification number, and lot number to the Montana Seed Growers Association office for "Certified Grade Determination".

2. Use official MSGA seed sample bags obtained by calling the MSGA office.
 3. If multiple lots from the same fields are harvested and cleaned separately, a sample for purity and germination must be submitted for each clean lot.
- C. Tag orders should be noted on the "Conditioner's Report". Tags will be issued upon receipt of production fees or at the discretion of MSGA.

VIII. Seed Standards

A. Red Clover

Factor		Fdn %	Cert %
Pure Seed	min.	99.50	99.00
Total other crop seeds	max.	9/lb*	0.25
Other varieties	max.	0.1	1.00
Sweetclover		9/lb	90/lb
Inert Matter	max.	0.50	0.50
Total Weed Seed	max.	0.15 ^{1/}	0.25
Noxious weed seeds ^{1/}			
Prohibited weed seeds		None**	None**
Restricted weed seeds	max.	9/lb ^{2/}	18/lb ^{2/}
Germination (including hard/dormant seeds)	min.	85.00	85.00

* Singly or collectively.

** "None" means none found during the normal inspection procedures.
 "None" is not a guarantee to mean the lot inspected is free of the factor.

^{1/} Foundation seed must be free of Brassica species (mustard, rape, etc.)

^{2/} Buckhorn plantain, curly dock, green foxtail, wild carrot and sorrel are weed seeds permitted at specified tolerances.

B. Birdsfoot Trefoil and White Clover

Factor		Fdn %	Reg %	Cert %
Pure Seed	min	99.00	98.00	99.00
Total other crop seeds	max	0.10	0.10	0.50
Other varieties	max.	0.10	0.25	1.00
Sweetclover		0/lb	25/lb	90/lb*
Inert Matter		1.00	2.00	1.00
Total Weed Seed	max	0.10	0.50	0.30
Noxious weed seeds ^{1/}	max			
Prohibited Weed Seeds		None**	None**	None**
Restricted Weed Seeds	max	None**	9/lb***	9/lb***
Germination (including hard/dormant seeds)	min	80.00	80.00	85.00

^{1/} For noxious weed seed list, refer to General Seed Certification Standards.

* Singly or collectively.

** "None" means none found during the normal inspection procedures.
 "None" is not a guarantee to mean the lot inspected is free of the factor.

*** Curly dock and buckhorn plantain only.

C. **Sainfoin**

Factor		Fdn %	Reg %	Cert %
Pure Seed	min.	99.00	99.00	98.00
Inert Matter	max.	1.00	1.00	2.00
Other Crop Seed	max.	0.10	0.25	1.10
Other varieties	max	0.10	0.25	1.00
Total Weed Seeds	max.	0.10	0.10	0.20
Noxious Weed Seeds ^{1/}	max.			
Prohibited weed Seed		None*	None*	None*
Restricted weed Seeds	max.	None*	None*	5/lb**
Germination (including hard seed)	min.	--	85.00	80.00

^{1/} For noxious weed seed list, refer to General Seed Certification Standards.

* “None” means none found during the normal inspection procedures.

“None” is not a guarantee to mean the lot inspected is free of the factor.

** No restricted weed seeds allowed, except Buckhorn Plantain, Curly Dock, Dodder, and Persian Darnel (9/lb maximum) and Wild Oats (5/lb maximum).

D. **Cicer Milkvetch**

Factor		Fdn %	Reg %	Cert %
Pure Seed	min.	99.00	99.00	98.00
Inert Matter	max.	1.00	1.00	2.00
Other Crop Seed	max.	0.01	0.10	0.20
Alfalfa and sweet clover	max.	9/lb	18/lb	45/lb
Other varieties	max.	0.05	0.10	0.50
Total Weed Seeds	max.	0.01	0.10	0.20
Noxious Weed Seeds ^{1/}	max.			
Prohibited weed Seed		None****	None****	None****
Restricted weed Seeds	max.	None****	None****	9/lb*
Root, crown or stem rot, sclerotia**	max.	0.10	0.10	0.10
Total Germination (including hard seed)	min.	--	75.00	70.00
Quick-swell test***	range	40-60	40-60	40-60

^{1/} For noxious weed seed list, refer to General Seed Certification Standards.

* None, except for curly dock and buckhorn plantain.

** Whole or broken.

*** Within six months of date of sale.

**** “None” means none found during the normal inspection procedures.

“None” is not a guarantee to mean the lot inspected is free of the factor.