SECTION 2

FOUNDATION, REGISTERED AND CERTIFIED PRODUCTION OF BARLEY, BUCKWHEAT, CANARYSEED, DURUM, FLAX, OAT, RYE, TRITICALE, AND WHEAT

In this Section:

- ***Barley*** includes spring and winter Barley.
- ***Oat*** includes covered and naked Oat.
- ***Rye*** includes spring and winter Rye.
- ***Triticale*** includes spring and winter Triticale.
- ***Wheat*** includes spring and winter Wheat, Einkorn, Emmer and Spelt (unless otherwise specified). ***Durum*** is not included.

Section 1, *Regulations for All Pedigreed Seed Crops*, together with the following, constitute the production regulations.
Section 2.6 describes the *Additional Minimum Requirements for Hybrid Varieties.*

2.1 SEED CLASSES AND GENERATIONS

2.1.1 The number of official pedigreed classes is determined by the Breeder of the variety and are normally Foundation, Registered and Certified.

a) Breeder: controlled by the Plant Breeder. No generation limit.
b) Select: normally 5 generations. Grown by accredited plot growers.
c) Foundation: one generation.
d) Registered: one generation.
e) Certified: one generation.

2.1.2 For Select and Probation plot production, refer to Section 12.

2.1.3 For those growers who are not accredited by the CSGA to grow Probation, Select or Foundation plots, and who plant crops with Breeder or Select seed, the CSGA reserves the right to determine the status of the crop and may issue a Registered or Certified crop certificate.

2.2 LAND REQUIREMENTS

2.2.1 Crops should not be planted on land where volunteer growth from a previous crop may cause contamination.

2.2.2 **Status granted to crops determined by the previous crop**

a) Land requirements prevent production of a higher pedigreed status crop (of the same variety) than the pedigreed status of the crop produced on that land the previous year.
b) Breeder or Select seed of the same variety may be sown in two consecutive years on the same land and the crop will be eligible for Foundation status. The third and fourth consecutive crops of the same variety on the same land, if planted with Breeder, Select or Foundation seed, will be eligible for Registered status.
c) Foundation seed of the same variety may be sown in two consecutive years on the same land and the crop will be eligible for Registered status. The third and fourth consecutive crops of the same variety on the same land, if planted with Breeder, Select, Foundation or Registered seed, will be eligible for Certified status.

d) Breeder, Select, Foundation or Registered seed of the same variety may be sown to produce a Certified seed crop on the same land for unlimited consecutive years.

2.2.3 **"Land Use" Inspection**

Non-pedigreed crops may be inspected to determine the eligibility of the land for pedigreed crop production the following year. Authorized seed crop inspectors conduct these inspections on request at the grower's expense. Refer to Section 1.17.

2.2.4 **"Land Use" Verification**

If uncertain of the eligibility of land for pedigreed crop production, growers may submit to the CSGA a request for "Land Use Verification Prior to Planting." Refer to Section 1.17 and Appendix A.9.

2.2.5 **Specific Crop Land Requirements**

The basic standards for all crops are set out in Section 1.17. In addition, the following apply to crops in this section:

Table 2.2.5: Specific Crop Land Requirements

Inspected Crop	Must NOT be grown on land which:
Barley (Spring and Winter) Certified	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Barley. • In the previous year produced a non-pedigreed crop of Canaryseed, Flax, Safflower or Sunflower which followed a non-pedigreed crop of Barley 2 years prior or a different variety of Barley 2 years prior.
Barley (Spring and Winter) Foundation and Registered	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Barley. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Barley 2 years prior or a different variety of Barley 2 years prior.
Buckwheat Certified	• In the previous year produced: - a non-pedigreed crop of Buckwheat; - a crop of a different variety of Buckwheat.
Buckwheat Foundation and Registered	• In either of the preceding 2 years produced: - a non-pedigreed crop of Buckwheat; - a crop of a different variety of Buckwheat.
Canaryseed Foundation, Registered and Certified	• In the previous year produced: - a non-pedigreed crop of Canaryseed; - a crop of a different variety of Canaryseed; - a crop of Flax. • In the previous year produced a non-pedigreed crop of Barley, Bean, Buckwheat, Chickpea, Durum, Fababean, Lentil, Lupin, Oat, Pea, Rye, Safflower, Soybean, Sunflower, Triticale or Wheat which followed a non-pedigreed crop of Canaryseed 2 years prior or a different variety of Canaryseed 2 years prior.

Table 2.2.5 (continued): Specific Crop Land Requirements

Inspected Crop	Must NOT be grown on land which:
Durum Certified	• In the previous year produced: - a non-pedigreed** crop of Barley, Durum, Oats, Rye, Triticale, Winter Wheat or Spring Wheat; - a crop of a different* variety of Durum.
Durum Foundation and Registered	• In the previous year produced: - a non-pedigreed** crop of Barley, Durum, Oats, Rye, Winter Wheat or Triticale; - a crop of a different* variety of Durum; • In either of the preceding 2 years, produced a crop of Spring Wheat; • In the previous year produced a non-pedigreed crop which followed a non-pedigreed** crop of Durum 2 years prior or a different variety of Durum 2 years prior.
Flax Foundation, Registered and Certified	• In the previous year produced: - a non-pedigreed crop of Flax; - a crop of a different variety of Flax; - a crop of Canaryseed. • In the previous year produced a non-pedigreed crop of Barley, Bean, Buckwheat, Chickpea, Durum, Fababean, Lentil, Lupin, Oat, Pea, Rye, Safflower, Soybean, Sunflower, Triticale or Wheat which followed a non-pedigreed crop of Flax 2 years prior or a different variety of Flax 2 years prior.
Oat Certified	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Oat. • In the previous year produced a non-pedigreed crop of Canaryseed, Flax, Safflower or Sunflower which followed a non-pedigreed crop of Oat 2 years prior or a different variety of Oat 2 years prior.
Oat Foundation and Registered	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Oat. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Oat 2 years prior or a different variety of Oat 2 years prior.
Rye (Spring and Winter) Certified	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Rye. • In the previous year produced a non-pedigreed crop of Canaryseed, Flax, Safflower or Sunflower which followed a non-pedigreed crop of Rye 2 years prior or a different variety of Rye 2 years prior.

Table 2.2.5 (continued): Specific Crop Land Requirements

Inspected Crop	Must NOT be grown on land which:
Rye (Spring) Registered (Winter) Foundation and Registered	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat; - a crop of a different variety of Rye. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Rye 2 years prior or a different variety of Rye 2 years prior.
Rye (Spring) Foundation	• In the previous year produced a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Triticale or Wheat. • In either of the preceding 2 years produced: - a non-pedigreed crop of Rye; - a crop of a different variety of Rye. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Rye 3 years prior, or a different variety of Rye 3 years prior.
Triticale (Spring and Winter) Certified	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale, or Wheat; - a crop of a different variety of Triticale. • In the previous year produced a non-pedigreed crop of Canaryseed, Flax, Safflower or Sunflower which followed a non-pedigreed crop of Triticale 2 years prior, or a different variety of Triticale 2 years prior.
Triticale (Spring) Registered (Winter) Foundation and Registered	• In the previous year produced: - a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale, or Wheat; - a crop of a different variety of Triticale. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Triticale 2 years prior, or a different variety of Triticale 2 years prior.
Triticale (Spring) Foundation	• In the previous year produced a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, or Wheat. • In either of the preceding 2 years produced: - a non-pedigreed crop of Triticale; - a crop of a different variety of Triticale. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower which followed a non-pedigreed crop of Triticale 3 years prior or a different variety of Triticale 3 years prior.

Table 2.2.5 (continued): Specific Crop Land Requirements

Inspected Crop	Must NOT be grown on land which:
Wheat (Spring and Winter) Certified	• In the previous year produced: - a non-pedigreed** crop of Barley, Buckwheat, Oat, Rye, Triticale or Wheat; - a crop of a different* variety of Wheat; - a crop of Durum. • In the previous year produced a non-pedigreed crop of Canaryseed, Flax, Safflower or Sunflower, and which followed a non-pedigreed** crop of Wheat or a different* variety of Wheat 2 years prior.
Wheat (Spring) Registered **(Winter)** Foundation and Registered	• In the previous year produced: - a non-pedigreed** crop of Barley, Buckwheat, Oat, Rye, Triticale or Wheat; - a crop of a different* variety of Wheat; - a crop of Durum. • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower, and which followed a non-pedigreed** crop of Wheat, or a different* variety of Wheat 2 years prior.
Wheat (Spring) Foundation	• In the previous year produced: -a non-pedigreed crop of Barley, Buckwheat, Oat, Rye or Triticale. -a crop of Durum • In either of the preceding 2 years produced: - a non-pedigreed** crop of Wheat; - a crop of a different* variety of Wheat; • In the previous year produced a non-pedigreed crop of Bean, Canaryseed, Chickpea, Fababean, Flax, Lentil, Lupin, Pea, Safflower, Soybean or Sunflower and which followed a non-pedigreed** crop of Spring Wheat 3 years prior, or a different* variety of Spring Wheat 3 years prior.

* In crops of pest tolerant varietal blends, "different" variety means a variety other than the varieties prescribed in the description of the pest tolerant variety.
** "non-pedigreed crop" means a crop that did not meet the requirements of Circular 6.

2.3 CROP INSPECTION

The basic standards for all crops are set out in Section 1.7. In addition, the following apply to crops in this section.

2.3.1 It is the grower's responsibility to ensure that crops are inspected by an authorized inspector prior to swathing or harvesting.

2.3.2 A crop that is cut, swathed or harvested prior to crop inspection is not eligible for pedigree.

2.3.3 The crop 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 pedigreed status.

2.3.4 **Cereal** crops must be inspected between heading and maturity.

2.3.5 **Flax** crops must be inspected at full bloom. The inspection should take place in the morning.

2.3.6 **Buckwheat** and **Canaryseed** crops must be inspected when the crops are in bloom.

2.4 CROP STANDARDS

2.4.1 **Isolation for All Crops in this Section**

a) The perimeter of the crop to be inspected must be clearly defined.
b) The required isolation must be provided prior to the time of flowering and crop inspection, and may be clean summerfallow, non-contaminating native growth, forage crop, cultivated row crop of another crop kind, the seeds of which can be easily separated, or a mowed grain crop, provided the plants in the mowed isolation do not form seed heads or in any way constitute a source of contamination.
c) Any plants considered a source of contamination found within 3 meters (10 feet) of the inspected crop may be reason for declining pedigreed status.
d) The required isolation of 2 meters (6 feet) for mechanical purity is not required if there is a definite physical barrier, defined as a natural or artificial obstacle between two adjacent crops that prevents access and accidental harvest.
e) Staking of a field is permitted in lieu of the 1 meter (3 feet) isolation strip required between inspected pedigreed crops of the same variety set out in Table 2.4.2 provided it meets the following requirements:
    (i) Stake locations must be clearly identified on map(s) provided to crop inspectors.
    (ii) Stakes must be placed no more than 100 meters apart
    (iii) Staking must be clearly visible and clearly define the border of the field at the time of inspection.

Table 2.4.2: Minimum Isolation Distances Required from an Inspected Crop to Other Crops

Inspected Crop	Other Crops	Isolation Distance Required
Barley	- Inspected pedigreed Barley of same variety	1 meter (3 feet)
	- Buckwheat, Durum, Oat, Rye, Triticale, Wheat	2 meters (6 feet)
	- Different varieties of Barley - Non-pedigreed Barley	3 meters (10 feet)
Buckwheat	- Inspected pedigreed Buckwheat of same variety	1 meter (3 feet)
	- Barley, Durum, Oat, Rye, Triticale, Wheat	2 meters (6 feet)
	- Crop planted with Certified seed of the same variety	3 meters (10 feet), provided the pedigree of the Certified seed used can be established and that the adjacent crop is free for 200 meters (660 feet) from non-pedigreed or different varieties of Buckwheat
	- Different varieties of Buckwheat - Non-pedigreed Buckwheat	200 meters (660 feet)

Table 2.4.2 (continued): Minimum Isolation Distances Required from an Inspected Crop to Other Crops

Inspected Crop	Other Crops	Isolation Distance Required
Canaryseed	- Inspected pedigreed Canaryseed of same variety	1 meter (3 feet)
	- Flax	2 meters (6 feet)
	- Different varieties of Canaryseed - Non-pedigreed Canaryseed or Flax	3 meters (10 feet)
Durum	- Inspected pedigreed Durum of the same* variety	1 meter (3 feet)
	- Barley, Buckwheat, Oat, Rye, Triticale, Wheat	2 meters (6 feet)
	- Different* varieties of Durum - Non-pedigreed** Durum	3 meters (10 feet)
Flax	- Inspected pedigreed Flax of same variety	1 meter (3 feet)
	- Canaryseed	2 meters (6 feet)
	- Different varieties of Flax - Non-pedigreed Flax or Canaryseed	3 meters (10 feet)
Oat	- Inspected pedigreed Oat of same variety	1 meter (3 feet)
	- Barley, Buckwheat, Durum, Rye, Triticale, Wheat	2 meters (6 feet)
	- Different varieties of Oat - Non-pedigreed Oat	3 meters (10 feet)
Rye	- Inspected pedigreed Rye of same variety	1 meter (3 feet)
	- Barley, Buckwheat, Durum, Oat, Triticale, Wheat	2 meters (6 feet)
	- Crop planted with Certified seed of the same variety	3 meters (10 feet), provided the pedigree of the Certified seed used can be established and that the adjacent crop is free for 300 meters (984 feet) from non-pedigreed or different varieties of Rye
	- Different varieties of Rye - Non-pedigreed Rye	300 meters (984 feet)
Triticale	- Inspected pedigreed Triticale of same variety	1 meter (3 feet)
	- Barley, Buckwheat, Durum, Oat, Rye, Wheat	2 meters (6 feet)
	- Different varieties of Triticale - Non-pedigreed Triticale	3 meters (10 feet)
Wheat	- Inspected pedigreed Wheat of same* variety	1 meter (3 feet)
	- Barley, Buckwheat, Durum, Oat, Rye, Triticale	2 meters (6 feet)
	- Different* varieties of Wheat - Non-pedigreed Wheat	3 meters (10 feet)

* In crops of pest tolerant varietal blends, "different" variety means a variety other than the varieties prescribed in the description of the pest tolerant variety.
** "non-pedigreed crop" means a crop that did not meet the requirements of Circular 6.

2.4.3 **Weeds**

a) All crops for pedigree must be free of Prohibited noxious weeds.
b) Very weedy crops will be declined pedigreed status.

2.4.4 **Maximum Impurity Standards**

a) Crops contaminated with limited amounts of other crop kinds which are readily removable in processing and do not hinder crop inspection may be allowed pedigreed status.
b) Impurities in pedigreed crops should be removed prior to crop inspection.
c) The impurities outlined in Table 2.4.4 are the maximum levels for impurities. Variants may be specified by the responsible Breeder and are not considered impurities unless reported in excess of the acceptable level specified.
d) Any combination of impurities may be reason for declining pedigreed status.
e) Table 2.4.4 indicates the maximum number of plants of other varieties or other crop kinds permitted in approximately 10,000 plants of the inspected crop. The inspector makes 6 counts (10,000 plants each) in the field to determine the number of impurities. The resulting average must not exceed the maximum impurity standards in Table 2.4.4.

Table 2.4.4: Maximum Impurity Standards

Inspected Crop	IMPURITIES IN CROP																
	Off-types or Other Varieties of the same crop kind			Barley		Buckwheat		Durum		Oats		Rye		Triticale		Wheat	
	F	R	C	F & R	C	F & R	C	F & R	C	F & R	C	F & R	C	F & R	C	F & R	C
Barley	1	3	8	n/a	n/a	1	3	1	2	2	4	1	3	2	4	2	8
Buckwheat	1	3	8	2	4	n/a	n/a	2	4	2	4	2	4	2	4	2	4
Canaryseed	1	3	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Durum	1	3	8	1	2	1	3	n/a	n/a	4	8	1	3	1	5	1	5
Flax	1	3	8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Oat*	1	3	8	1	2	1	3	2	4	n/a	n/a	1	3	4	8	4	8
Rye	1	3	8	2	4	1	3	2	4	2	4	n/a	n/a	2	4	2	4
Triticale	1	3	8	2	4	1	3	1	5	4	8	1	3	n/a	n/a	1	5
Wheat	1	3	8	2	4	1	3	1	5	4	8	1	3	1	5	n/a	n/a

F = Foundation R = Registered C = Certified n/a = Not Applicable

* In Oat crops, counts of Wild Oats are subject to the maximum impurity standards for Off-types or Other Varieties of the same crop kind.

2.5 SPECIFIC REQUIREMENTS

2.5.1 CSGA may require submission of a seed sample for varietal identity verification testing.

2.6 ADDITIONAL MINIMUM REQUIREMENTS for HYBRID VARIETIES

Definitions of *Parent Lines*

a) Parent line or population: a relatively true breeding strain or selection used for seed crop production.
b) Inbred parent line: a relatively true breeding homozygous strain.
c) A line: line or population which is male sterile.
d) B line or Maintainer line: male fertile line or population capable of maintaining male sterility.
e) Restorer line: line or population used as male parent which has the capability of restoring fertility to male sterile lines/populations when crossed onto them.

2.6 ADDITIONAL MINIMUM REQUIREMENTS for HYBRID VARIETIES

Table 2.6.1: Minimum Isolation Distances Required from an Inspected Hybrid Crop to Other Crops

Inspected Hybrid Crop	Other Crops	Isolation Distance Required
Rye (Spring and Winter) Certified	- Inspected pedigreed Rye of same variety	3 meters (10 feet) to a crop planted with Breeder or Foundation seed of the same pollen bearing (male) parent line, provided the pedigree of the seed planted can be verified and that the adjacent crop is free for 500 meters (1640 feet) from non-pedigreed or different varieties of Rye
	- Buckwheat, Durum, Oat, Triticale, Wheat	2 meters (6 feet)
	- Crop planted with Certified seed of the same variety	3 meters (10 feet) provided the pedigree of the Certified seed planted can be verified and that the adjacent crop is free for 500 meters (1640 feet) from non-pedigreed or different varieties of Rye
	- Different varieties of Rye - Non-pedigreed Rye	500 meters (1640 feet)
Rye Parent lines (Spring and Winter) Foundation	- Inspected pedigreed Rye of same variety	3 meters (10 feet) to a crop planted with Breeder or Foundation seed of the same pollen bearing (male) parent line, provided the pedigree of the seed planted can be verified and that the adjacent crop is free for 1000 meters (3280 feet) from non-pedigreed or different varieties of Rye

Table 2.6.1 (continued): Minimum Isolation Distances Required from an Inspected Hybrid Crop to Other Crops

	- Buckwheat, Durum, Oat, Triticale, Wheat	2 meters (6 feet)
	- Crop planted with Certified seed of the same variety	3 meters (10 feet), provided the pedigree of the Certified seed used can be established and that the adjacent crop is free for 1000 meters (3280 feet) from non-pedigreed or different varieties of Rye
	- Different varieties of Rye - Non-pedigreed Rye	1000 meters (3280 feet)

2.6 ADDITIONAL MINIMUM REQUIREMENTS for HYBRID VARIETIES

2.6.2 Maximum Impurity Standards

a) The impurities outlined in Table 2.6.2 are the maximum levels for impurities.
b) Any combination of impurities may be reason for declining pedigreed status.
c) Table 2.6.2 indicates the maximum number of plants of other varieties or off-types permitted in approximately 10,000 plants of the inspected crop. The inspector makes 6 counts (10,000 plants each) in the field to determine the number of impurities. The resulting average must not exceed the maximum impurity standards in Table 2.6.2.

Table 2.6.2: Maximum Impurity Standards

Impurity	Maximum Permitted in each Class	
	Foundation	Certified
Other varieties or off-types of Rye	1	8

2.7 SPECIFIC REQUIREMENTS

2.7.1 a) The CSGA, at its discretion, may require a declaration stating the actual percent seed of a representative sample of the hybrid seed crop and the method of determining the percent hybrid seed. Unless otherwise specified in the variety description, the declaration of percent hybrid seed shall also provide the following information: CSGA Crop Sequence Number, the test method name or number, the number of seeds tested and the confidence level of the test.

b) If required, the percent hybrid seed shall be determined by a method approved by the CFIA.

c) If required, the percent hybrid seed shall not be less than 95%. The balance of the seed should be parent line derivatives resulting from incompletely controlled pollination in the seed field