# PEDIGREED SEED PLOT PRODUCTION QUALITY MANUAL


**Canadian Seed Growers' Association**



**Revision 1.3-2013** **February 1, 2013**

**The official version of this *Pedigreed Seed Plot Production Quality Manual* is maintained at the CSGA's website: www.seedgrowers.ca. This version is published for convenient reference.**

## TABLE OF CONTENTS BY SECTION

# CANADIAN SEED GROWERS' ASSOCIATION

# PEDIGREED SEED PLOT PRODUCTION MANUAL

## RECORD OF AMENDMENTS

Amendments to the *Pedigreed Seed Plot Production Manual* will be issued as required. Amendments will be numbered and dated. Contact the CSGA or download the manual from the CSGA website (www.seedgrowers.ca).

| Amendment Number & Date | Description of Amendment<br>Section / Sub-section Number(s), Page Number(s) | Entered by: |
|---|---|---|
| **01.1-20100401** | **Sections: 0-1, 0-2, 0-3, 3.93, 4 (In this Section), 5.4.1, 5.4.3, 5.5.3, 6.53** | |
| **01.2-20110401** | **Sections: 0-1, 0-3, 4.3.3, 4.5.1** | |
| **01.3-20130201** | **Sections: 0-1, 0-3, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8** | |
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## 1.0 INTRODUCTION AND SCOPE

1.1 Plot production is used for the first multiplication of Breeder seed in Canadian seed certification for most non-hybrid annual crop kinds. Federal Seeds Regulations for agricultural seed-propagated species, designate the Canadian Seed Growers' Association (CSGA) responsible for pedigreed seed crop production and varietal purity standards.

1.2 The purpose of Plot production is to assist Canadian seed growers in maintaining the highest possible standards of varietal purity within pedigreed (certified) seed.

1.3 A seed crop produced from Plots normally has Select or Foundation status, depending on the individual species.

1.4 Plot Growers must be accredited by the CSGA through a Probation process.

1.5 The area of individual Plots is restricted in area depending upon crop kind and status of plot grower.

1.6 Plot production regulations outlined in this document should be used in conjunction with the CSGA Regulations and Procedures for Pedigreed Seed Crop Production (*Circular 6*) which outlines the requirements for Select, Foundation, Registered and Certified seed crops.

1.7 As changes are made to regulations for Plot production, discrepancies may arise between this document and *Circular 6*. In all cases, *Circular 6* will be the current and accepted version of regulations and procedures governing Plot production of pedigreed seed.

## 1.8 ADDITIONAL INFORMATION

Related information on seed and crop certification is available from the following websites:

- CSGA: www.seedgrowers.ca
- Canadian Seed Institute: www.csi-ics.ca
- CFIA: www.inspection.gc.ca

The following publications are available from the Canadian Seed Growers' Association (CSGA):

- Regulations and Procedures for Pedigreed Seed Crop Production (Circular 6)
- Rogues and Roguing Manual for Pedigreed Seed Crops
- Pedigreed Forage Seed Production

The following publications are available from the Canadian Food Inspection Agency (CFIA):

- Seeds Act and Regulations
- Plant Protection Act and Regulations
- Procedures for the Registration of Crop Varieties
- Pedigreed Seed Crop Inspection Procedures
- Regulatory Directives on Plants with Novel Traits

## 2.0 GROWER ACCREDITATION AND PROBATION

2.1 Plot Growers must be accredited by the CSGA. Accreditation is obtained by an individual through a Probation process.

2.2 A seed grower wishing to produce Select and Foundation Plots can obtain accreditation through the successful production of a series of Probation Plots. The applicant must receive permission from the CSGA and meet the requirements of the CSGA before commencing Probation Plot production.

2.3 An *Application to Commence Probation Plot Production* (Form 154) is available from the CSGA and should be submitted prior to March 31 for spring seeded crops and prior to July 31 for fall seeded crops.

2.4 The grower may be required to have grown pedigreed seed crops of the crop kind in which the grower is commencing Probation, in at least three (3) of the previous five (5) crop seasons.

2.5 An individual must complete three (3) successful years of Probation Plot production in order to be granted Plot grower status.

a) This status is granted to an individual seed grower only.
b) This status cannot be acquired through an affiliation with another seed grower or transferred to or from other Plot growers.

2.6 Plots must be planted with Breeder seed that is recognized by the CSGA as eligible for certification. Breeder seed is obtained from the organization responsible for distributing the variety. (Check with the variety distributor for application or availability deadline dates). For crops that are limited to one generation of Plot multiplication, Breeder seed must be planted each year.

2.7 Probationary growers may change varieties within the crop kind which they started their probation without receiving prior permission from the CSGA.

2.8 Probation Plots are subject to all Plot production requirements for Select or Foundation seed, according to regulations for individual species.

2.9 The status granted to plots produced during the probation is as follows:

2.9.1 Crops for which more than one generation of Plot multiplication is permitted (e.g. *Circular 6*, Section 12):

a) First Year: provided all requirements are met, the First Year Plot will be granted Foundation status. Sufficient seed is selected from this plot to plant the Second Year Probation plot and the balance of this seed may be used to produce Registered seed or Certified seed.

b) Second Year: provided all requirements are met, the Second Year Plot will be granted Foundation status. Sufficient seed is selected from this Plot to plant the Third Year Probation Plot and the balance of this seed may be used to produce Registered seed or Certified seed.

c) Third Year: provided all requirements are met, the Third Year Plot will be granted Select status and the seed may be used for further Select or Foundation production. The grower is now eligible to produce Select and Foundation Plots.

2.9.2 Crops for which only one generation of Plot multiplication is permitted: (e.g. *Circular 6*, Sections 11 and 13)

a) First Year: provided all requirements are met, the First Year Plot will be granted Foundation status. Breeder seed must be obtained for the Second Year Plot.

b) Second Year: provided all requirements are met, the Second Year Plot will be granted Foundation status. Breeder seed must be obtained for the Third Year Plot.

c) Third Year: provided all requirements are met, the Third Year Plot will be granted Foundation status. The grower is now eligible to produce Select and Foundation Plots.

2.10 Any means of processing or conditioning of seed from a Probation Plot which may contaminate the varietal purity of the seed is prohibited.

2.11 A *Report of Plot Production* (Form 50) for each Probation Plot will be sent to the grower and must be completed and submitted to the CSGA.

2.12 A sample of clean seed from each Probation Plot must be submitted for variety verification testing. The sample must be representative of the seed harvested from the Plot.

2.13 Probation Plot growers must obtain new Breeder Seed if the Plot is declined pedigreed status.

2.14 Probation Plot growers may produce only one (1) Plot in each year of Probation.

2.15 Area of Probation Plot

a) The total area of a Probation Plot must not exceed 0.5 hectare (1.25 acres) or be less than 0.25 hectare (0.5 acre). Health Canada regulations also require that Industrial Hemp Plots must not be less than 0.4 ha (1.0 acre).

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

c) The total area of a Probation Plot includes "walkways" provided within the plot to facilitate effective roguing.

## 3.0 GENERAL PLOT PRODUCTION PROCEDURES

3.1 An individual seed grower must complete three (3) successful years of Probation Plot production in order to be accredited Plot Grower status.

a) This status is granted to an individual seed grower only.

b) This status cannot be acquired through an affiliation with another seed grower or transferred to or from other Select plot growers.

3.2 Plots must be planted with Breeder seed that is recognized by the CSGA as eligible for certification. Breeder seed is obtained from the organization responsible for distribution of the variety. (Check with variety distributor for application deadline dates). Industrial hemp varieties must be approved by Health Canada.

3.3 Any means of processing or conditioning of seed from a Plot which may contaminate the varietal purity of the seed is prohibited.

3.4 A *Report of Plot Production* (Form 50) for each Plot will be sent to the grower and must be completed and submitted to the CSGA.

3.5 A sample of clean seed from each Plot must be submitted for variety verification testing. The sample must be representative of the seed harvested from the plot.

3.6 Area of Plots:

a) Except for Probation Plots, there is no limit on total acreage of Plots, number of crop kinds, number of varieties or acreage of one variety. Each plot is limited to 1 hectare (2.5 acres) in size. Plots of Industrial Hemp must not be less than 0.4 hectare (1.0 acre).

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

c) The area of a Plot includes "walkways" provided within the plot to facilitate effective roguing.

3.7 Crop Inspection

The basic standards for all crops are set out in Section 1.7 of *Circular 6*. In addition, the following apply:

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

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

3.7.3 The plot 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.

3.7.4 All plots must be inspected by an authorized inspector at least once before harvest.

3.8 Weeds:

3.8.1 The plot must show evidence of good weed control and should be free of Prohibited and Primary noxious weeds.

3.8.2 Very weedy plots may be declined pedigreed status.

3.8.3 Check specific *Circular 6* regulations on weeds for each crop type.

3.9 Recommended Procedures for Plot Production:

3.9.1 Planting of Plots

a) Plots should be planted to facilitate inspection, roguing and harvesting.

b) Plots should be planted in areas easily accessible for frequent maintenance and to provide the maximum protection from contamination, such as different varieties of the same crop kind

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 always reduces the grower's risk to provide more isolation than required.

e) Specific requirements may influence the location and size of the plot. It is a safeguard if adjacent crops are the same variety as the plot and are inspected for pedigreed status.

3.9.2 Roguing of Plots

a) The Plot must be thoroughly and intensively rogued many times throughout the crop growing season.

b) The numbers and kinds of plants removed should be recorded and described on the *Report of Plot Production* (CSGA Form 50).

c) All rogued plants must be removed from the plot area.

3.9.3 Harvesting, Cleaning and Storing of Plot seed

a) A Plot grower should have access to the necessary equipment for harvesting and cleaning the seed from the plot in such a manner as to ensure that the varietal purity of the seed is maintained.

b) The seed should be stored in a clean, cool, dry area.

c) The seed containers should be labelled for identification

d) Specific requirements for the transfer and labelling of pedigreed seed are outlined in Section 1.12 of the CSGA Regulations and Procedures for Pedigreed Seed Crop Production (*Circular 6*) with more specific information for plot production seed in Sections 11, 12 and 13.

3.9.4 Plot growers are encouraged to attend courses on Plot production supported by the CSGA

# 4.0 REQUIREMENTS FOR PROBATION AND SELECT PLOT PRODUCTION: BARLEY, BEAN, BUCKWHEAT, CANARYSEED, DURUM, FABABEAN, FLAX, LENTIL, LUPIN, OAT, PEA, RYE, SOYBEAN, TRITICALE, AND WHEAT

In this section:

- ***Barley*** includes spring and winter Barley.
- ***Bean*** includes field, garden, white, coloured, navy or dry edible type Bean.
- ***Oat*** includes covered and naked Oat.
- ***Pea*** *includes Chickpea.*
- ***Rye*** includes spring and fall (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.

This Section also includes the requirements for Probation and Select Plot production of other crop kinds.
Section 1, *Regulations for All Pedigreed Seed Crops* in the *Regulations and Procedures for Pedigreed Seed Crop Production (CSGA Circular 6),* together with the following, constitute the production regulations.

## 4.1 SEED CLASSES AND GENERATIONS

4.1.1 Breeder Seed of crops listed in this section may be multiplied for up to five generations as a Plot, except Field Bean which is limited to one generation. The seed produced has Select status.

4.1.2 For growers not accredited by CSGA and who plant crops with Breeder or Pre-Basic seed, the CSGA reserves the right to determine the status of the inspected crop and may issue a Registered or Certified crop certificate.

## 4.2 PLOT PRODUCTION

4.2.1 All Plots for Select status must be planted with Breeder seed or Select seed.

4.2.2 Normally five (5) generations of Plot production from Breeder seed are allowed. Field Bean is limited to one generation. Information on the number of generations permitted in the Select class is available from the CSGA.

4.2.3 All bean Plots must be planted with Breeder seed unless otherwise specified by the Breeder, to reduce the risk of disease transmission.

4.2.4 A Plot grower must obtain new Breeder seed or Select seed if the plot is declined for any reason other than excess acreage.

## 4.3 LAND REQUIREMENTS

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

4.3.2 Plots may be grown, for example, on land which in the required previous years was effectively summer fallowed or produced perennial forage crops.

4.3.3 Previous Land Use

a) The basic standards for all crops are set out in Section 1.17 of *Circular 6*. Note that land use inspections are not used for subsequent Plot production because the land use inspections are considered non-pedigreed crops. In addition to the basic standards, the following apply to crops in this section:

### Table 4.3.3: Specific Crop Land Requirements

| Select Plot Crop | Land Requirements |
|---|---|
| **Barley** (Spring and Winter) | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Barley;<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale, or Wheat;<br>- a crop of a different variety of Barley;<br>- a Certified crop of Barley. |
| **Bean** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a non-pedigreed Bean crop;<br>- a crop of a different variety of Bean;<br>- a Foundation, Registered or Certified crop of Bean. |
| **Buckwheat** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Buckwheat;<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Buckwheat;<br>- a crop of a different variety of Buckwheat;<br>- a Certified crop of Buckwheat. |

## Table 4.3.3 (continued): Specific Crop Land Requirements

| Select Plot Crop | Land Requirements |
|---|---|
| **Canaryseed** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Canaryseed;<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Canaryseed, or Flax;<br>- a Certified crop of Canaryseed. |
| **Durum** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Durum.<br>• In either of the 2 preceding years produced:<br>- a crop of Wheat;<br>- a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, or Triticale;<br>- a crop of a different variety of Durum;<br>- a Certified crop of Durum. |
| **Fababean** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a non-pedigreed Fababean crop;<br>- a crop of a different variety of Fababean;<br>- a Foundation, Registered or Certified crop of Fababean. |
| **Flax** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Flax;<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Canaryseed, or Flax;<br>- a crop of a different variety of Flax;<br>- a Certified crop of Flax. |
| **Lentil** | **Must NOT be grown on land which:**<br>• In the previous year produced a Lentil crop. |
| **Lupin** | **Must NOT be grown on land which:**<br>• In the previous year produced a Lupin crop. |
| **Oat** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Oat;<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat;<br>- a crop of a different variety of Oat;<br>- a Certified crop of Oat. |

## Table 4.3.3 (continued): Specific Crop Land Requirements

| Select Plot Crop | Land Requirements |
|---|---|
| **Pea** | **Must NOT be grown on land which:**<br>• In the previous year produced a Pea crop. |
| **Rye**<br>(Spring and Winter) | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Rye<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Triticale, or Wheat.<br>• In any of the preceding 3 years produced:<br>- a non-pedigreed crop of Rye or a different variety of Rye;<br>- a Certified crop of Rye. |
| **Soybean** | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a non-pedigreed Soybean crop;<br>- a crop of a different variety of Soybean;<br>- a Foundation, Registered or Certified crop of Soybean. |
| **Triticale**<br><br>(Spring and Winter) | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Triticale<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed crop of Barley, Buckwheat, Durum, Oat, Rye, Wheat.<br>• In any of the preceding 3 years produced:<br>- a non-pedigreed crop of Triticale or a different variety of Triticale;<br>- a Certified crop of Triticale. |
| **Wheat**<br><br>(Winter) | **Must NOT be grown on land which:**<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed** crop of Barley, Buckwheat, Durum, Oat, Rye, Triticale or Wheat;<br>- a crop of a different* variety of Wheat;<br>- a Certified crop of Wheat. |

**Table 4.3.3 (continued): Specific Crop Land Requirements**

| Select Plot Crop | Land Requirements |
|---|---|
| **Wheat** (Spring) | **Must NOT be grown on land which:**<br>• In the previous year produced:<br>- a Foundation, Registered or Certified crop of Wheat.<br>- a crop of Durum<br>• In either of the preceding 2 years produced:<br>- a non-pedigreed** crop of Barley, Buckwheat, Oat, Rye, Durum or Triticale;<br>• In any of the preceding 3 years produced:<br>- a non-pedigreed** crop of Wheat or a different* variety of Wheat;<br>- a Certified crop of Wheat. |

* 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 requirements of Circular 6.

## 4.4 CROP INSPECTION

The basic standards for all crops are set out in Section 1.7 of *Circular 6* and in Section 3 of this document. In addition, the following apply to crops in this section:

4.4.1 **Cereal** Plots must be headed.

4.4.2 **Soybean** Plots must be inspected at maturity.

4.4.3 **Fababean** Plots must be inspected after flowering.

4.4.4 **Bean** Plots must be inspected twice before harvest by an authorized inspector. The first inspection must be made between 10 and 20 days after full bloom; the second inspection must be made at maturity.

4.4.5 All other Plots must be in bloom.

## 4.5 CROP STANDARDS

### 4.5.1 Isolation

a) Except for Bean plots for which this is not permitted, a 1 meter (3 feet) isolation strip is required between Plots of the same variety and between Plots and crops eligible for Foundation status providing that Foundation status crops were planted:
   (i) with seed of equivalent pedigreed status to that of the Plot; and
   (ii) on land that meets equivalent land use requirements of that Plot.

b) The isolation strip must not be a source of contamination.

c) Plots of Barley, Buckwheat, Canaryseed, Durum, Flax, Oat, Rye, Triticale and Wheat need not be isolated from crops of Bean, Fababean, Lentil, Lupin, Pea and Soybean.

d) Staking of the Plot perimeter is permitted, except for Bean plots, in lieu of the 1 meter (3 feet) isolation strip required in 4.5.1 a), if it meets CSGA requirements for plot staking, which include the following:

(i) Stake locations must be clearly identified on the *Application for Crop Inspection* map(s) that are submitted to CSGA by the deadline date for that crop kind.
(ii) Staking must include at least 8 stakes that are clearly visible and clearly define the perimeter of the plot at the time of inspection.
(iii) Impurities reported within a Plot's isolation distance required in Table 4.5.1 are considered within the Plot for CSGA appraisal purposes.

### Table 4.5.1: Minimum Isolation Distances Required Between Plots and Other Crops

Note: A "Pedigreed crop of the same variety" is a crop inspected and eligible for pedigreed status. It does not mean a crop planted with pedigreed seed for commercial production.

| Select Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Barley** | - Inspected pedigreed Barley of same variety<br>- Buckwheat, Durum, Oat, Rye, Triticale, Wheat | 3 meters (10 feet) |
| | - Different varieties of Barley<br>- Non-pedigreed Barley<br>- Inspected pedigreed Barley of same variety contaminated with off-types or other varieties of Barley | 10 meters (33 feet) |
| **Bean** | - Fababean, Lentil, Lupin, Pea, Peanut, Soybean | 3 meters (10 feet) |
| | - Inspected pedigreed Bean of same variety<br>- Different varieties of Bean<br>- Non-pedigreed Bean<br>- Inspected pedigreed Bean of same variety contaminated with off-types or other varieties of Bean | 30 meters (33 feet) |
| **Buckwheat** | - Inspected pedigreed Buckwheat of same variety<br>- Barley, Durum, Oat, Rye, Triticale, Wheat | 3 meters (10 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 400 meters (1,320 feet) from non-pedigreed or different varieties of Buckwheat |
| | - An adjacent crop that has more than 0.5% plants of Buckwheat | 150 meters (492 feet) |
| | - Different varieties of Buckwheat<br>- Non-pedigreed Buckwheat<br>- Inspected pedigreed Buckwheat of same variety contaminated with off-types or other varieties of Buckwheat | 400 meters (1,320 feet) |

## Table 4.5.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops

| Select Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Canaryseed** | - Inspected pedigreed Canaryseed of same variety<br>- Flax | 3 meters (10 feet) |
| | - Different varieties of Canaryseed<br>- Non-pedigreed Canaryseed<br>- Inspected pedigreed Canaryseed of same variety contaminated with off-types or other varieties of Canaryseed | 10 meters (33 feet) |
| **Durum** | - Inspected pedigreed Durum of same variety<br>- Barley, Buckwheat, Oat, Rye, Triticale, Wheat | 3 meters (10 feet) |
| | - Different varieties of Durum<br>- Non-pedigreed Durum<br>- Inspected pedigreed Durum of same variety contaminated with off-types or other varieties of Durum | 10 meters (33 feet) |
| **Fababean** | - Inspected pedigreed Durum of same variety<br>- Barley, Buckwheat, Oat, Rye, Triticale, Wheat | 3 meters (10 feet) |
| | - Different varieties of Fababean<br>- Non-pedigreed Fababean<br>- Inspected pedigreed Fababean of same variety contaminated with off-types or other varieties of Fababean | 10 meters (33 feet) |
| **Flax** | - Inspected pedigreed Flax of same variety<br>- Canaryseed | 3 meters (10 feet) |
| | - Different varieties of Fababean<br>- Non-pedigreed Fababean<br>- Inspected pedigreed Fababean of same variety contaminated with off-types or other varieties of Fababean | 10 meters (33 feet) |
| **Lentil** | - Inspected pedigreed Lentil of same variety<br>- Bean, Fababean, Lupin, Peanut, Soybean | 3 meters (10 feet) |
| | - Different varieties of Lentil<br>- Non-pedigreed Lentil<br>- Inspected pedigreed Lentil of same variety contaminated with off-types or other varieties of Lentil | 10 meters (33 feet) |
| **Lupin** | - Inspected pedigreed Lupin of same variety<br>- Bean, Fababean, Lentil, Pea, Peanut, Soybean | 3 meters (10 feet) |
| | - Different varieties of Lupin<br>- Non-pedigreed Lupin<br>- Inspected pedigreed Lupin of same variety contaminated with off-types or other varieties of Lupin | 10 meters (33 feet) |

**Table 4.5.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Select Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Oat** (All types) | - Inspected pedigreed Oat of same variety<br>- Barley, Buckwheat, Durum, Rye, Triticale, Wheat | 3 meters (10 feet) |
| | - Different varieties of Oat<br>- Non-pedigreed Oat<br>- Inspected pedigreed Oat of same variety contaminated with off-types or other varieties of Oat | 10 meters (33 feet) |
| **Oat** (Hullness only) | - Any crop contaminated with Wild Oat | 20 meters (66 feet) |
| **Pea**** | - Inspected pedigreed Pea of same variety<br>- Bean, Fababean, Lupin, Peanut, Soybean | 3 meters (10 feet) |
| | - Different varieties of Pea<br>- Non-pedigreed Pea<br>- Inspected pedigreed Pea of same variety contaminated with off-types or other varieties of Pea | 10 meters (33 feet) |
| **Rye** | - Inspected pedigreed Rye of same variety<br>- Barley, Buckwheat, Durum, Oat, Triticale, Wheat | 3 meters (10 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 400 meters (1,320 feet) from non-pedigreed or different varieties of Rye |
| | - An adjacent crop that has more than 0.5% plants of Rye | 150 meters (492 feet) |
| | - Different varieties of Rye<br>- Non-pedigreed Rye<br>- Inspected pedigreed Rye of same variety contaminated with off-types or other varieties of Rye | 400 meters (1,320 feet) |
| **Soybean** | - Inspected pedigreed Soybean of same variety<br>- Bean, Fababean, Lentil, Lupin, Pea, Peanut | 3 meters (10 feet) |
| | - Different varieties of Soybean<br>- Non-pedigreed Soybean<br>- Inspected pedigreed Soybean of same variety contaminated with off-types or other varieties of Soybean | 10 meters (33 feet) |
| **Triticale** | - Inspected pedigreed Triticale of same variety<br>- Barley, Buckwheat, Durum, Oat, Rye, Wheat | 3 meters (10 feet) |
| | - Different varieties of Triticale<br>- Non-pedigreed Triticale<br>- Inspected pedigreed Triticale of same variety contaminated with off-types or other varieties of Triticale | 30 meters (100 feet) |

**Table 4.5.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Select Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Wheat** | - Inspected pedigreed Wheat of same variety<br>- Barley, Buckwheat, Durum, Oat, Rye, Triticale | 3 meters (10 feet) |
| | - Different* varieties of Wheat<br>- Non-pedigreed Wheat<br>- Inspected pedigreed Wheat of same variety contaminated with off-types or other varieties of Wheat | 10 meters (33 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.

** 3 meters of isolation is required between pea and chickpea

### 4.5.2 Weeds

a) The plot must show evidence of good weed control and should be free of Prohibited and Primay noxious weeds.
b) Very weedy plots may be declined pedigreed status.

### 4.5.3 Maximum Impurity Standards

The inspector makes 6 counts (20,000 plants each) in the plot to determine the number of impurities. The resulting average must not exceed the maximum impurity standards.

a) The Plot must not contain more than one (1) plant in approximately 20,000 plants of another variety or off-type unless variants are specified by the responsible Breeder.

b) In a **Soybean** Plot, the plot must not contain more than two (2) plants in approximately 20,000 plants of another variety or off-type unless otherwise specified by the Breeder of the variety.

c) The Plot must not contain more than one (1) plant in approximately 20,000 plants of other crop kinds difficult to separate from the seed produced in the Plot.

## 4.6 Other Recommended Procedures

4.6.1 **Bean**, **Fababean**, **Lentil**, **Pea** and **Soybean** should be planted in rows over 18 cm (7 inches) apart.

4.6.2 Plots of species susceptible to ergot should not be located adjacent to grassland.

# 5.0 SPECIFIC REQUIREMENTS FOR PROBATION AND FOUNDATION PLOT PRODUCTION OF CANOLA, MUSTARD, OILSEED RADISH, RAPESEED, SAFFLOWER AND SUNFLOWER

In this Section:

- ***Canola*** and ***Rapeseed*** includes spring and winter varieties of *Brassica napus, Brassica rapa*, and canola-quality *Brassica juncea,* except when otherwise indicated.
- ***Mustard*** includes varieties of Brown or Oriental types (*Brassica juncea*), White/Yellow types (*Sinapis alba*) and Ethiopian types (*Brassica carinata).*
- ***Oilseed Radish*** includes varieties of *Raphanus sativus.*

Section 1, *Regulations for All Pedigreed Seed Crops* in the *Regulations and Procedures for Pedigreed Seed Crop Production (CSGA Circular 6),* together with the following, constitute the production regulations.

## 5.1 SEED CLASSES, GENERATIONS AND DEFINITIONS

5 .1.1 Breeder Seed of crops listed in this section may be multiplied for one generation as a Plot. The seed produced has Foundation status.

5.1.2 For growers not accredited by CSGA to grow Plots and who plant crops with Breeder or Pre-Basic seed, the CSGA reserves the right to determine the status of the inspected crop and may issue a Certified crop certificate.

5.1.3 Definitions

a) Parent line or population: a relatively true breeding strain or selection used for seed crop production.
b) Inbred line: a relatively true breeding homozygous strain.
c) A line: line or population which is male sterile.
d) B 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.
f) Self-incompatible (S.I.) line: male fertile line or population incapable of self-pollination due to self incompatibility.
g) Self-compatible (S.C.) line: male fertile line or population which is capable of self pollination.

## 5.2 LAND REQUIREMENTS

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

5.2.2 Plots of Canola, Mustard, Oilseed Radish and Rapeseed must not be planted on land which in the previous five (5) years grew a crop of Canola, Mustard or Oilseed Radish, or Rapeseed.

5.2.2 Plots of Safflower and Sunflower must not be planted on land which produced a crop of the same kind in the previous year.

## 5.3 CROP INSPECTION

The basic standards for all Plots are set out in Section 3 of this document and Section 1.7 of *Circular 6*. In addition, the following apply to crops in this section.

5.3.1 For **Canola, Mustard, Oilseed Radish** and **Rapeseed**, inspection must be made when the crop is in the early flowering stage in order to best determine varietal purity. A crop not inspected at this stage may be cause for not granting pedigreed status.

5.3.2 For **Safflower**, field inspection should be made during the bloom stage but not before at least 50 percent of the plants are showing one or more blossoms.

5.3.3 For **Sunflower**, field inspection should be made after the crop is at least 50 percent in bloom and before it is fully matured.

## 5.4 CROP STANDARDS

### 5.4.1 Minimum Isolation Distances Required Between Plots and Other Crops

a) Under optimum conditions, not more than three (3) plants per square meter of harmful contaminants (such as species in Section 5.5.3 that can cross-pollinate with the inspected crop) are permitted within the required isolation distance(s) adjacent to the inspected crops. The conditions of each crop are assessed by the CSGA which may alter this standard, usually by reducing the number of contaminant plants permitted per square meter, according to the contamination risks involved.

b) Harmful contamination within the required isolation distance, depending on density, location and distance from the inspected crop may be cause for declining pedigreed status. Harmful contaminants for crop certification include the species in Section 5.5.3 (from *Circular 6*, Section 13.8.3). More information on other potential harmful contaminants, that are not crop certification requirements, is available from the CFIA's Biology reference documents at: www.inspection.gc.ca.

c) The required isolation must be provided prior to the time of flowering and crop inspection.

### Table 5.4.1: Minimum Isolation Distances Required Between Plots and Other Crops

| Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **To produce the parent seed of Hybrid Canola, Hybrid Rapeseed and synthetic/ composite varieties: Canola** and **Rapeseed** (*Brassica napus, Brassica rapa* and canola-quality *Brassica juncea*), planted with Breeder seed (A, B, R, S.C. and S.I. lines) | - Different varieties of Canola, Rapeseed crops<br>- Non-pedigreed crops of the same kind | 800 meters (2624 feet) or more, as specified by the Breeder |
| | - Planted with Certified seed crops of the same variety (except S.I. lines) | 3 meters (10 feet) to a crop planted with Foundation seed of the same pollen bearing (male) parent, provided the pedigree of the Foundation seed used can be established and the prescribed isolation distance is free from harmful contaminants, i.e. other species which will cross pollinate with the inspected crop and includes A line pollen shedders. |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |
| | - Brown or Oriental or Ethiopian Mustard | 100 meters (328 feet), provided the adjacent crop is free from harmful contamination (e.g. other species that can cross pollinate with the inspected crop) for a distance of 800 meters (2624 feet) |
| | - White/Yellow Mustard, Oilseed Radish or Camelina | 3 meters (10 feet), provided the adjacent crop is free from harmful contamination for a distance of 800 meters (2624 feet) |

**Table 5.4.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **To produce the parent seed of Open-pollinated varieties: Canola** and **Rapeseed** (*Brassica napus*, canola-quality *Brassica juncea*) | - Different varieties of Canola, Rapeseed<br>- Non-pedigreed crops of the same crop kind | 200 meters (656 feet) |
| | - Planted with Certified seed of the same variety | 100 meters (328 feet), provided the pedigree of the Certified seed used can be established and the adjacent crop is free from harmful contamination (e.g. other species that can cross-pollinate with the inspected crop) for a distance of 200 meters (656 feet) |
| | - Brown or Oriental or Ethiopian Mustard | 100 meters (328 feet), provided the adjacent crop is free from harmful contamination (e.g. other species that can cross-pollinate with the inspected crop) for a distance of 200 meters (656 feet) |
| | - White/Yellow Mustard, Oilseed Radish or Camelina | 3 meters (10 feet), provided the adjacent crop is free of Canola or Rapeseed plants for a distance of 200 meters (656 feet) |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |

**Table 5.4.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **To produce the parent seed of Open-pollinated varieties: Canola** and **Rapeseed** (*Brassica rapa)* | - Different varieties of Canola, Rapeseed (*Brassica rapa*)<br>- Non-pedigreed crops of the same kind | 400 meters (1312 feet) |
| | - Planted with Certified seed of the same variety | 100 meters (328 feet), provided the pedigree of the Certified seed used can be established and the adjacent crop is free from harmful contamination (e.g., other species that can cross-pollinate with the inspected crop) for a distance of 400 meters (1312 feet) |
| | - Brown or Oriental or Ethiopian Mustard<br>- *Brassica napus, Brassica juncea* | 100 meters (328 feet), provided the adjacent crop is free from plants of *Brassica rapa* species for 400 meters (1312 feet) |
| | - White/Yellow Mustard, Oilseed Radish or Camelina | 3 meters (10 feet), provided the adjacent crop is free of Canola or Rapeseed plants for a distance of 400 meters (1312 feet) |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |

**Table 5.4.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Brown or Oriental Mustard and canola-quality *Brassica juncea*** | - Different varieties of Brown or Oriental Mustard<br>- Non-pedigreed crops of the same kind | 200 meters (656 feet) |
| | - Planted with Certified seed of the same variety | 100 meters (328 feet), provided the pedigree of the Certified seed used can be established and the adjacent crop is free from harmful contamination (e.g. other species that can cross-pollinate with the inspected crop) for a distance of 200 meters (656 feet) |
| | - Canola, Rapeseed, Ethiopian Mustard | 100 meters (328 feet), provided the adjacent crop is free of plants of Brown or Oriental Mustard for 200 meters (656 feet) |
| | - White/Yellow Mustard, Oilseed Radish or Camelina | 3 meters (10 feet), provided the adjacent crop is free of Canola, Oriental, Brown or Ethiopian Mustard or Rapeseed for a distance of 200 meters (656 feet) |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |
| **White/Yellow Mustard or Oilseed Radish** | - Different varieties of White/Yellow Mustard or Oilseed Radish<br>- Non-pedigreed crops of the same kind | 400 meters (1312 feet) |
| | - Planted with Certified seed of the same variety | 100 meters (328 feet), provided the pedigree of the Certified seed used can be established. |
| | - Canola, Rapeseed, Oriental, Brown or Ethiopian Mustard or Camelina | 3 meters (10 feet), provided the adjacent crop is free of plants of White/Yellow Mustard or Oilseed Radish for 400 meters (1312 feet) |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |

**Table 5.4.1 (continued): Minimum Isolation Distances Required Between Plots and Other Crops**

| Plot Crop | Other Crops | Isolation Distance Required |
|---|---|---|
| **Ethiopian Mustard** | - Different varieties of Ethiopian Mustard<br>- Non-pedigreed crops of the same kind | 200 meters (656 feet) |
| | - Planted with Certified seed of the same variety | 100 meters (328 feet), provided the pedigree of the Certified seed used can be established and the adjacent crop is free from harmful contamination (e.g. other species that can cross-pollinate with the inspected crop) for a distance of 200 meters (656 feet) |
| | - Canola, Rapeseed, Brown or Oriental Mustard | 100 meters (328 feet), provided the adjacent crop is free from harmful contamination (e.g. other species that can cross pollinate with the inspected crop) for a distance of 200 meters (656 feet) |
| | - White/Yellow Mustard, Oilseed Radish or Camelina | 3 meters (10 feet), provided the adjacent crop is free of Ethiopian Mustard for a distance of 200 meters (656 feet) |
| | - Planted with Breeder or Foundation seed of the same variety | 3 meters (10 feet) |
| **Safflower** | - Different varieties of Safflower<br>- Non-pedigreed crops of Safflower | 400 meters (1312 feet) |
| | - Foundation or Certified crop of the same variety | 3 meters (10 feet) |
| **Sunflower** | - Different varieties of Sunflower<br>- Non-pedigreed crops of Sunflower<br>- Wild annual Sunflower<br>- Volunteer Sunflower plants | 805 meters (2640 feet) |
| | - Foundation or Certified crop of the same variety | 3 meters (10 feet) |

### 5.4.2 Weeds

a) The presence of either Cleavers Bedstraw or Wild Mustard in the Canola, Mustard, Oilseed Radish or Rapeseed plot is cause for declining pedigreed status.

### 5.4.3 Maximum Impurity Standards

The inspector makes 6 counts (20,000 plants each) in the plot to determine the number of impurities. The resulting average must not exceed the maximum impurity standards.

a) Plots of Canola, Mustard, Oilseed Radish or Rapeseed, unless variants are specified by the responsible Breeder, must not contain more than 1 plant in approximately 20,000 plants of harmful contaminants (species in Section 5.5.3, from *Circular 6*, Section 13.8.3, that may cross pollinate successfully with the inspected crop), other varieties or distinct off-types foreign to the variety being grown.

b) Plots of Canola, Mustard, Oilseed Radish or Rapeseed, unless exceptions are specified by the responsible Breeder, must not contain more than 1 plant in approximately 20,000 plants of other crop kinds, the seeds of which are difficult to separate from the crop presented for pedigreed status, e.g., Mustard in Canola or Rapeseed.

c) For Safflower, the maximum standard permitted is 1 per 10,000 plants.

d) For Sunflower, the maximum standard allowed is one-half of 1 percent (0.5%), that is 1 plant per 200 plants of inspected crop, of other varieties or clearly distinguishable off-types.

## 5.5 SPECIFIC REQUIREMENTS

5.5.1 Plot growers may be required to submit to the CSGA the results from a recognized laboratory indicating the erucic acid and/or glucosinolate content of Canola varieties. A crop certificate may be issued if the seed meets the officially recognized variety description standards.

5.5.2 In the case of canola-quality *Brassica juncea*, Plot growers must submit to the CSGA the results from a recognized laboratory indicating the allyl glucosinolate level of a crop. A crop certificate may be issued if the seed meets the maximum standard of 1 micro mole of allyl glucosinolate per gram of seed.

5.5.3 Species considered harmful contaminants for crop certification that may cross pollinate successfully with inspected crops of species in this Section, include the following:

- *B. juncea*: Brown or Oriental Mustard;
- *B. napus*: Argentine Canola;
- *B. rapa*: Polish Canola;
- *S. alba*: White or Yellow Mustard;
- *R. raphanistrum*: Wild Radish;
- *R. sativus*: Oilseed Radish.

# 6.0 SPECIFIC REQUIREMENTS FOR PROBATION AND FOUNDATION PLOT PRODUCTION OF INDUSTRIAL HEMP

In this Section:

- **Industrial Hemp** (*Cannabis sativa* L.) 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 Cultivars" means any variety designated in Health Canada's *List of Approved Cultivars*.
- "THC" means delta-nine (Δ9) tetrahydrocannabinol, which is the component of industrial hemp regulated by Health Canada.
- Although traditionally a crop with a Dioecious plant type similar to open pollinated corn, many Monoecious varieties of hemp (*Cannabis sativa* L.) have been developed. 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.
- All production of Industrial Hemp crops in Canada is subject to license application approval by Health Canada.

Section 1, *Regulations for All Pedigreed Seed Crops* in the *Regulations and Procedures for Pedigreed Seed Crop Production (CSGA Circular 6)*, together with the following, constitute the production regulations.

## 6.1 GENERATIONS AND SEED CLASS

6.1.1 Breeder Seed of Industrial Hemp may be multiplied as a Plot for one generation. The seed produced has Foundation status.

6.1.2 Only varieties of Industrial Hemp approved by Health Canada are eligible for Plot production.

6.1.3 For growers not accredited by CSGA to grow Foundation plots and who plant crops with Breeder or Pre-Basic seed, the CSGA reserves the right to determine the status of the inspected crop and may issue a Registered or Certified crop certificate.

## 6.2 PLOT PRODUCTION

6.2.1 Plots must be planted with Breeder or Pre-Basic seed of varieties approved by Health Canada.

6.2.2 The Plot area of one variety must not be less than 0.4 hectare (1.0 acre) nor exceed 1 hectare (2.5 acres).

## 6.3 LAND REQUIREMENTS

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

6.3.2 Industrial Hemp Plots must not be planted on land which in the previous five (5) years grew a crop of Industrial Hemp or Tobacco.

## 6.4 CROP INSPECTION

The basic standards for all Plots are set out in Section 3 of this document and Section 1.7 of *Circular 6*. In addition, the following apply to Industrial Hemp:

6.4.1 First inspection must be made before female (pistillate) flowers of the inspected crop are receptive and after the formation of male (staminate) flowers, preferably before pollen is shed.

6.4.2 Second inspection must be made during the receptive stage of the female plants in the inspected plot, normally within three (3) weeks of first inspection.

6.4.3 Third inspections must be made when off-type female flowers can be identified.

6.4.4 Isolation areas will be inspected for volunteer Industrial Hemp plants and harmful contaminants on each inspection visit

## 6.5 CROP STANDARDS

### 6.5.1 Isolation

a) Isolation areas must be kept free of Industrial Hemp plants. Under optimum conditions, not more than 3 plants per square meter of harmful contaminants (species that can cross pollinate with the inspected crop) are permitted within the required isolation distance(s) adjacent to the inspected crop. The conditions of each crop are assessed by the CSGA which may alter this standard, usually by reducing the number of contaminant plants permitted per square meter, according to the contamination risks involved.

b) The required isolation must be provided prior to the time of flowering and crop inspection.

**Table 6.5.1: Minimum Isolation Distances Required Between Industrial Hemp Plots and Other Crops**

| Select Plot Crop | Other crops | Isolation Distance Required |
|---|---|---|
| **Dioecious type** | - Different varieties of Industrial Hemp<br>- Non-pedigreed crop of same kind | 5000 meters (16,150 feet) |
| | - Lower pedigreed class seed crop of same variety | 2000 meters (6460 feet) |
| | - Breeder or Pre-Basic plot of same variety | 5 meters (16 feet) |
| **Monoecious type or Hybrid** | - Dioecious variety of Industrial Hemp<br>- Non-pedigreed crop of same kind | 5000 meters (16,150 feet) |
| | - Other Monoecious varieties<br>- Lower pedigreed class seed crop of same variety | 3000 meters (9690 feet) |
| | - Breeder or Pre-Basic plot of same variety | 5 meters (16 feet) |

### 6.5.2 Weeds

a) The presence of Broomrape *(Orobanche spp.*) in an Industrial Hemp Plot may be cause for declining pedigreed status.

### 6.5.3 Maximum Impurity Standards

a) Impurities should be removed prior to crop inspection.

b) Any combination of impurities may be reason for declining pedigreed status.

c) An Industrial Hemp Plot, unless otherwise specified by the Breeder, must be practically free from harmful contaminants (species that can cross pollinate with the inspected crop), plants of other varieties or distinct types foreign to the variety being inspected, weeds or other crops with seeds that are difficult to separate from Industrial Hemp seed (e.g. Hemp Nettle).

d) Table 6.5.3 indicates the maximum number of impurities permitted by the CSGA 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 6.5.3.

**Table 6.5.3: Maximum Impurity Standards in Industrial Hemp Plots**

| Plot Crop | Maximum Impurity Standards per 10,000 plants in Industrial Hemp Plots | | |
|---|---|---|---|
| | Maximum Number of "Too Male" Monoecious Plants | Maximum Number of Dioecious Male Plants Shedding Pollen | Maximum Number of Other Impurities |
| **Dioecious type** | – | – | 3 |
| **Monoecious type** | 500 | 1 | 3 |

## 6.6 Roguing of Industrial Hemp Plots

6.6.1 Off-type male flowers must be removed before the receptive stage of female flowers in the inspected crop.

6.6.2 All male flowers rogued from the crop must be removed from the plot area and burial is recommended.

6.6.3 Regrowth of rogued flowers or plants must be prevented

## 6.7 Specific requirements

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

6.7.2 Growers are required by Health Canada to obtain THC test results, from a recognized laboratory, verifying that the THC content of their Industrial Hemp crop complies with Health Canada regulations. Growers may be required to submit these results to the CSGA before a crop certificate is issued.

**Table 6.8: Summary of Seed Crop Inspection Standards for Industrial Hemp (*Cannabis sativa L.*) Plots**

| | **Foundation** |
|---|---|
| Minimum Plot Size (acres) (Health Canada requirement) | 1.0 |
| Maximum Plot Size (acres) | 2.5 |
| Previous Land Use: minimum number of years without hemp or tobacco production | 5 |
| Maximum Impurity Standards: | |
| • Maximum number of Monoecious "too male" off-type plants shedding pollen during inspection (#/10,000 plants) | 500 (5.0 %) |
| • Maximum number of Dioecious male plants** shedding pollen during inspection (#/10,000 plants) | 1 (0.01 %) |
| • Maximum other impurity tolerances (#/10,000 plants) | 3 (0.03 %) |
| Number of Inspections | At least 3 |
| Minimum Isolation Distance (meters): | |
| • from Other Varieties and non-pedigreed hemp crops | 5000 |
| • from other pedigreed classes, same variety | 2000 |
| • from same pedigreed class, same variety | 25 |
| Number of Inspections | At least 3 |
| Minimum Isolation Distance (meters): | |
| • from Dioecious varieties and non-pedigreed Hemp crops | 5000 |
| • from other Monoecious varieties | 3000 |
| • from lower pedigreed classes, same variety | 3000 |
| • from same pedigreed class, same variety | 25 |

** If Dioecious male plants start flowering before removal from field, all plants around them should be destroyed for a radius of 3 meters for Foundation and 2 meters for Registered seed crops.

## 7.0 Quality Management Checklist for Plot Production

This checklist is provided as a tool to assist pedigreed seed growers address the various quality aspects related to Plot Production. Details of regulations and recommendations are provided in the CSGA *Regulations and Procedures for Pedigreed Seed Crop Production (Circular 6)* and the CSGA *Pedigreed Seed Plot Production Manual*.

| | |
|---|---|
| **Name of Plot Grower:** | |
| **Year:** | |
| **Variety and Crop Kind:** | |
| **Plot Id. # and Location:** | |

| **Quality Element** | **Records** |
|---|---|
| **Seed Source and Label Id**. | |
| **Previous Land Use:** Year (crop kind, variety, cc #) | |
| | |
| | |
| | |
| | |
| **Crop Isolation** | **East**: |
| | **South**: |
| | **West**: |
| | **North**: |
| **Planting** (date, seeding rate) | |
| **Roguing** (dates, off-types) | |
| **Crop Inspection** (date, inspector Id.) | |
| **Harvest** (date, yield estimate) | |
| **Seed Transfer, Storage, Labelling** (Id., location) | |
| **Seed Testing** (sample Id., date, lab, test results) | |
| **System Documentation** (type, storage location) | |
| **Other** | |
| THC testing (Hemp) (sample Id., date, lab, test results) | |

APPENDIX A

# DOCUMENTS

**In this Appendix:**
Documents that are used only in Plot production are described in Appendix A of the CSGA *Pedigreed Seed Plot Production Manual.*

These documents are available from the CSGA's website: www.seedgrowers.ca or by phone (613-236-0497) or fax (613-563-7855) or post from the CSGA office at the address below.

**A.1** Probation Plot Production Application (Form 154)
**A.2** Report of Plot Production (Form 50)

## A.1 PROBATION PLOT PRODUCTION APPLICATION (Form 154)

To produce Foundation and Select status plots, seed growers must be accredited by the CSGA as Plot Growers and complete a period of Probation plot production. The *Probation Plot Production Application* is the grower's initial request to CSGA to start Probation plot production.

The *Probation Plot Production Application* (Form 154) should be submitted to CSGA before March 31 for spring seeded crops and before July 31 for fall seeded crops.

Breeder seed is obtained directly from the organization responsible for the variety.

## A.2 REPORT OF PLOT PRODUCTION (Form 50)

After crop inspections of Plots are completed, a *Report of Plot Production* is sent by CSGA to growers of Probation, Foundation and Select plots. This report supports growers in maintaining complete records of plot production and provides Breeders and distributors with information on the stability and uniformity of varietal performance and characteristics under many different production environments.

A seed sample submission instruction letter accompanies the Report of Plot Production (Form 50) because a representative sample from each Plot is required for official variety verification audit testing.