

### **3.22 Hemp, Industrial (*Cannabis sativa* L.)**

#### ***Includes varieties of these types:***

- **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.
- Although traditionally a crop with a Dioecious plant type, many Monoecious varieties of hemp have been developed.
- All production of Industrial Hemp crops in New Zealand is subject to licensed application approval by the Ministry of Health
- All fields are to be tested for THC content during flowering. Testing to be completed by NZ MPI approved Laboratory (currently only ESR). Maximum THC limit <0.5% on a dry weight basis.
- **THC:** means delta-nine ( $\Delta 9$ ) tetrahydrocannabinol.

**Approved Varieties:** Only approved varieties can be entered for certification

**New Zealand** all Varieties of Hemp to be grown in New Zealand must be listed on the Ministry Of Health list of "Approved Cultivars of Industrial Hemp"  
This document lists the cultivars of Industrial Hemp approved pursuant to regulation 5(1) of the Misuse of Drugs (Industrial Hemp) Regulations 2006.

**Canada** any Variety designated in Health Canada's List of Approved Cultivars

**European Union** List of Approved Cultivars on the European Union list

**AOSCA/USA** all Varieties must be approved by Regulatory Authorities to be eligible for certification

#### **Closing Date for Applications**

Applications for certification must be received by the Seed Certification Bureau by the 20<sup>th</sup> December.

#### **Degrading of Areas and Generations allowed:**

##### **AOSCA/CANADA**

**Breeder seed:** to be determined by the Breeder.

**Foundation seed:** one generation/harvest season grown by accredited Foundation plot growers.

**Registered seed:** one generation/harvest season

**Certified seed:** one generation/harvest season

With the exception of Breeder seed, only varieties of Industrial Hemp approved by Health Canada are eligible for certification.

CSGA (Canadian seed Growers Association) recognized plant breeders may cultivate, and CSGA may certify, seed crops of varieties that are not approved cultivars.

### NEW ZEALAND/OECD

**Breeders/Pre Basic:** one generation/harvest season

**Basic:** one generation/harvest season.

**1<sup>ST</sup> Generation:** one generation/harvest season.

**2<sup>nd</sup> Generation:** one generation/harvest season.

#### Field Inspections:

**Dioecious type:** Areas will be inspected once at flowering when male plants are beginning to senesce.

**Monoecious type:** Areas will be inspected twice-First inspection at the start of flowering and the Second inspection at seed set prior to swathing or harvesting.

#### Previous Cropping History:

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

Crop Class to be inspected	Must NOT be grown on land which:
<b>AOSCA Registered</b>	In the previous 3 harvest seasons produced a crop of Industrial Hemp.
<b>AOSCA Certified</b>	In the previous 2 harvest seasons produced a non-certified crop of Industrial Hemp or a different variety of Industrial Hemp.
	In the previous 1 harvest season produced a certified crop of the same variety.
<b>OECD all classes</b>	In the previous 2 harvest season produced a certified crop of the same variety.

**Isolation Requirements:**

**Table 1: Dioecious Types- Minimum Isolation Distances Required Between Inspected Dioecious Type Industrial Hemp Crops and Other Crops**

TO PRODUCE CLASS	OTHER CROPS	ISOLATION DISTANCE
Breeders/Foundation	i) Different varieties of Industrial Hemp	4800m
	ii) Non-certified crops of the same kind	4800m
	iii) Lower certified class seed crop of same variety	2000m
	iv) Same variety and class of certified seed	5m
Basic/Registered	i) Different varieties of Industrial Hemp	4800m
	ii) Non-certified crops of the same kind	4800m
	iii) Lower certified class seed crop of same variety	1600m
	iv) Same variety and class of certified seed	1m
1 <sup>st</sup> Generation/Certified 2 <sup>nd</sup> Generation  NB: There is No 2 <sup>nd</sup> Generation for Canada or AOSCA	i) Different varieties of Industrial Hemp	800m
	ii) Non-certified crops of the same kind	800m
	iii) Lower certified class seed crop of same variety	200m
	iv) Same variety and class of certified seed	1m

**Table 2: Monoecious Types or Hybrid Dioecious crops- Minimum Isolation Distances Required Between Inspected Dioecious Type Industrial Hemp Crops and Other Crops**

TO PRODUCE CLASS	OTHER CROPS	ISOLATION DISTANCE
Breeders/Foundation	i) Dioecious industrial hemp variety of any kind	4800m
	ii) Non-certified crops of the same kind	4800m
	iii) Other monoecious/hybrid varieties	3000m
	iv) Lower certified class seed crop of same variety	3000m
	v) Same variety and class of certified seed	5m
Basic/Registered	i) Dioecious industrial hemp variety of any kind	4800m
	ii) Non-certified crops of the same kind	4800m
	iii) Other monoecious/hybrid varieties	2000m
	iv) Lower certified class seed crop of same variety	1000m
	v) Same variety and class of certified seed	1m
1 <sup>st</sup> & 2 <sup>nd</sup> Generation/ Certified  NB: There is NO 2 <sup>nd</sup> Generation for Canada or AOSCA	i) Dioecious industrial hemp variety of any kind	4800m
	ii) Non-certified crops of the same kind	1000m
	iii) Other monoecious/hybrid varieties	200m
	iv) Lower certified class seed crop of same variety	200m
	v) Same variety and class of certified seed	1m

## Crop Standards:

### Isolation

- a) The area, density, stage of maturity and location of any contaminating pollen source is an important factor in cross pollination, and therefore must be noted on the *Seed Crop Inspection Report* for consideration in determining certified status. There shall not be any industrial hemp plants within 100 m of the crop and not more than 10 plants/ha beyond 100 m.
- b) The required isolation must be provided prior to flowering and crop inspection.
- c) All Hemp crops are to be entered into the SCID Programme (Seed Crop Isolation Distance). Enquire with the Seed Certification Bureau for a User login.

### Weeds

- a) All crops for certified must be free of Prohibited noxious weeds. Any area or seed lot found to contain nodding thistle or yellow gromwell will be rejected from certification
- b) Very weedy crops will be declined pedigreed status.
- c) The presence of Broomrape (*Orobanche* spp.) in Industrial Hemp crops is cause for declining certified status.

### Maximum Impurity Standards

- a) Impurities should be removed prior to crop inspection.
- b) Any combination of impurities may be reason for declining certified status.
- c) Table 3 and Table 4 indicate the maximum number of impurities permitted 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 3 and Table 4.

**Table 3: Maximum Impurity Standards for Dioecious Types**

Inspected Crop	Maximum Number of Off-types or Other Varieties (#10,000 Plants)
Foundation	3 (0.03%)
Registered	10 (0.1%)
Certified	20 (0.2%)
Basic	20 (0.2%)
1 <sup>st</sup> Gen	50 (0.5%)
2 <sup>nd</sup> Gen	50 (0.5%)

**Table 4: Maximum Impurity Standards for Monoecious Types**

Inspected Crop	Maximum Number of Dioecious Male Plants** Shedding Pollen During Inspection (#10,000 Plants)	Maximum Number of Off-types or Other Varieties (#10,000 Plants)
Foundation	1 (0.01%)	3 (0.03%)
Registered	2 (0.02%)	10 (0.1%)
Certified	100 (1.0%)	20 (0.2%)
Basic	1 per ha	20 (0.2%)
1 <sup>st</sup> Gen	3 per ha	50 (0.5%)
2 <sup>nd</sup> Gen	100 (1%)	50 (0.5%)

- a) All male flowers rogued from the crop should be removed from the field and buried if possible.
- b) Regrowth of rogued male flowers or plants must be prevented.

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

**Laboratory Purity Standards NZ/OECD**

	Basic	1 <sup>st</sup> Gen	2 <sup>nd</sup> Gen
Minimum pure seed	98.0%	98.0%	98.0%
Inert matter	2.0%	2.0%	2.0%
Other seed	0.3%	0.5%	0.5%
Soil EU	0.1	0.1%	0.1%
Germination EU	75%	75%	75%

**Laboratory Purity Standards AOSCA**

	Foundation	Registered	Certified
Minimum pure seed	98.0%	98.0%	98.0%
Inert matter	2.0%	2.0%	2.0%
Other seed	0.1%	0.1%	0.1%
Other crop seeds	0.01%	0.03%	0.08%
Soil	0.1%	0.1%	0.1%
Germination AOSCA	80%	80%	80%

Hemp seed must be free from *Orabanche* spp. However the presence of one *Orabanche* spp. seed in a 100 grams is not regarded as an impurity if a second sample of 200 grams is found free from *Orabanche* spp. Seeds.

**Crop Inspectors Guidance:**

The sowing rate may be different for each variety of Hemp. The crop inspector will need to first examine the crop and find a representative part to measure the density. Count the number of plants in a square metre and then use this as a guide to estimate the area for completing the required 10000 plant counts. A minimum of 6 counts are required during the inspection and the average obtained is used as described in Table 3 and Table 4 above.

1 in 10000 = (0.01%)
2 in 10000 = (0.02%)
3 in 10000 = (0.03%)
10 in 10000 = (0.1%)
20 in 10000 = (0.2%) or 1 per 500 plants
50 in 10000 = (0.5%) or 1 per 200 plants
100 in 10000 = (0.1%) or 1 per 100 plants