

23. Canary seed

Classes, types and varieties	23-2
Types 	23-2
Itchy	23-2
Hairless	23-2
Determination of dockage	23-3
Definitions	23-3
Dockage not reported	23-3
Normal cleaning procedure	23-3
Composition of dockage	23-4
Optional analysis	23-4
Grading	23-5
Important definitions	23-5
Net weight of sample	23-5
Hazardous substances in samples	23-5
Processed sample	23-5
Rounding rules	23-5
Non-registered varieties	23-5
Representative portion for grading	23-6
Grading factors	23-7
Contaminated grain	23-7
Earth pellets (EP)	23-7
Ergot (ERG)	23-8
Excreta (EXCR)	23-8
Extraneous material	23-8
Fertilizer pellets (FERT PLTS)	23-8
Fireburnt (FBNT)	23-8
Foreign material (FM)	23-8
Glabrous (GLB)	23-8
Heated kernels (HTD)	23-9
Hulled seeds (HULL) 	23-9
Inert material (INERT MTL)	23-9
Odour (ODOR)	23-9
Rotted (ROT)	23-9
Soft earth pellets (SEP)	23-10
Stones (STNS)	23-10
Treated seed and other chemical substances	23-10
Variety (VAR)	23-10
Primary and export grade determination table	23-11
Canary Seed, Canada (CAN), standard of quality	23-11
Canary Seed, Canada (CAN), foreign material included in dockage	23-11
Export shipments	23-12
Determination of dockage	23-12
Grading	23-12

Classes, types and varieties

Types

There are two main types of canary seed, itchy and hairless.

Itchy

The term refers to varieties which have tiny, sharp hairs (spicules) attached to the hull.

Hairless

The term refers to varieties which don't have tiny hairs (spicules) attached to the hull.
These varieties are commonly referred to as glabrous.

Determination of dockage

Definitions

Dockage is assessed and recorded to the nearest 0.1%.

Dockage is defined under the *Canada Grain Act* as “any material intermixed with a parcel of grain, other than kernels of grain of a standard of quality fixed by or under this Act for a grade of that grain, that must and can be separated from the parcel of grain before that grade can be assigned to the grain”. Dockage is removed by following the cleaning procedure described in this chapter.

The sample as it arrives is referred to as the uncleaned or dirty sample. Its weight is the gross weight of the sample. Dockage is assessed on the gross weight of the sample.

Dockage not reported

- ▲ **Important:** Dockage is not reported for
- Canary Seed, Sample Canada Account Fireburnt
 - Canary Seed, Sample Salvage
 - Canary Seed, Sample Condemned
 - Unofficial samples declared as processed

Normal cleaning procedure

▲ **Important:** Wear gloves and a mask to handle any samples that you suspect may contain hazardous substances.

1. Set up the Carter dockage tester as follows:

Feed control	No. 3
Air control	Minimum No. 3.5 (may be increased to remove the maximum amount of light weight material without removing whole seeds)
Riddle	No. 000 or No. 1 (for large seeds)
Top sieve	No. 4.5 round-hole
Centre sieve	Blank tray
Bottom sieve	None
Sieve cleaner control	Off

2. Using a Boerner-type divider, divide the uncleaned sample to obtain a representative portion.

Official samples shall be at least 1 kg.

Unofficial samples shall be at least 1 kg.

3. Turn on the Carter dockage tester.
4. Pour the sample into the hopper.
5. After the sample has passed through the machine, turn on the sieve cleaner control for two to three seconds to remove kernels lodged in the sieve.

6. Turn off the dockage tester.
7. Lightly snap the retainer rod of the aspiration pan to loosen material gathered on the air screen.
8. The sample portion removed through the No. 4.5 round-hole machine sieve, is passed over a No. 4.5 round-hole hand sieve. Whole and hulled seeds remaining on top of the No. 4.5 round-hole hand sieve are returned to the sample.
9. Using a Boerner-type divider, divide the sample to a representative portion of not less than 20g.
10. Analyze the representative portion to determine the percentage by weight of admixture remaining in the sample.
11. Analyze the representative portion to determine the percentage by weight of hulled seeds in the sample.
12. Determine dockage using the list under **Composition of dockage**.

Composition of dockage

Dockage includes:

- material removed by the riddle
- material removed by aspiration
- material that passes through the No. 4.5 round-hole hand sieve (see the **Normal cleaning procedure**)
- admixture handpicked from the cleaned sample
- hulled seeds (HULL) handpicked from the cleaned sample and recorded as a percentage of the gross weight of the sample

Optional analysis

Where a shipper requests special cleaning of a carlot of grain at a terminal elevator, and the elevator manager agrees, dockage material will be analyzed for the presence of grain. The percentage and grade of any grain contained in the dockage will be reported.

Procedure

1. Analyze the official sample.
2. Record the following on inspection records:
 - percentage by gross weight to the nearest 0.1% and the grade of canary seed
 - percentage by gross weight to the nearest 0.1% and the grade of grain separable from dockage.
 - percentage of dockage

Example:

95.0% Canary Seed, Canada

4. 0% Domestic Mustard Seed, No. 1 Canada Oriental

1.0% dockage

Grading

Important definitions

Net weight of sample

The sample after cleaning and removal of dockage is referred to as the cleaned sample. Its weight is the net weight of the sample. Percentages by weight for grading refer to percentages of the cleaned sample, or the net weight.

Hazardous substances in samples

Wear gloves and a mask to handle any samples that you suspect may contain hazardous substances. Hazardous substances are defined in section 1 of the *Canada Grain Regulations* as “any pesticide, desiccant or inoculant”.

Processed sample

An unofficial sample of grain declared to be conditioned or cleaned to meet end user specifications, and whereas, the determination of dockage and/or determination of commercially clean are not performed or reported.

Rounding rules

Rounding rules are outlined in [schedule 3 of the Canada Grain Regulations](#). When official inspection results are expressed numerically, they should be expressed to the same decimal precision as the applicable tolerance in the primary and export grade determination table.

Non-registered varieties

A registered variety refers to varieties of crops that have been granted variety registration in Canada. Species, kinds or types of crops subject to variety registration in Canada are listed in Schedule III of the *Seeds Regulations*. Not all crops are subject to registration. The Canadian Food Inspection Agency (CFIA) is responsible for the registration of varieties in Canada. Consult the CFIA’s [database of varieties registered in Canada](#) online to determine if a given variety is registered in Canada.

Where grain of any kind is not a registered variety under the *Seeds Act*, no person shall, except with the permission of the Canadian Grain Commission, assign a statutory grade to that grain which is higher than the lowest grade established by regulation for that kind of grain.

Representative portion for grading

All grading is done on representative portions divided down from the clean sample, using a Boerner-type divider.

The optimum representative portion is the representative sample size within the minimum and maximum range used to obtain the most accurate result when assessing an objective factor. It is determined by taking into consideration the tolerance and concentration of the objective factor being assessed.

Representative portion of canary seed for grading (in grams)

Grading factor	Sample portion size range	
	Minimum	Maximum
Ergot	500 g	working sample
Excreta	working sample	working sample
Fertilizer pellets	working sample	working sample
Fireburnt	working sample	working sample
Foreign material	50 g	250 g
Glabrous	1 g	5 g
Heated	50 g	250 g
Inert material	working sample	working sample
Odour	working sample	working sample
Soft earth pellets	working sample	working sample
Stones	250 g	working sample
Treated seeds	working sample	working sample

Grading factors

 Images available on web version

Contaminated grain (CONTAM GRN)

▲ **Important:** Wear gloves and a mask to handle any sample that is suspected of containing contaminated grain.

Grain is contaminated for the purposes of the *Canada Grain Act* if the grain contains any substance in sufficient quantity that the grain is either

- (a) adulterated for the purposes of the *Food and Drugs Act*; or
- (b) contaminated within the meaning of the regulations made under section 51 of the *Safe Foods for Canadians Act*.

Treated seed

Treated seed is grain that has been adulterated with an agricultural chemical for agronomic purposes. The types of agricultural chemicals used to treat seed include pesticides, fungicides and inoculants. These seed dressings contain a dye to render the treated seed visually conspicuous. The colour of the dye varies depending upon the type of treatment and the type of grain. The current Canadian colour standard for pesticide and fungicide seed treatments for cereal (including corn) is red or pink. The colour standard for pesticide and fungicide seed treatments for canola is blue; however, green has also been used. Pulse crop (including soybeans) pesticide and fungicide seed treatments are typically blue or green. The coatings or stains may appear greasy or powdery and the surface area covered may range from tiny flecks to complete coverage.

Other chemical substances

Other chemical substances refers to any chemical residue either adhering to the kernel or remaining in the sample and to samples having a chemical odour of any kind.

Extraneous material

Can be defined as glass, metal, wood (including wood pellets), plastic or any other material not already defined in the Official Grain Grading Guide.

Procedure

If a sample is suspected of being coated with a pesticide, desiccant, inoculant or if the sample contains evidence of extraneous material, including any foreign chemical substance other than fertilizer pellets (FERT PLTS), the sample shall be graded 'Canary Seed, Held IP Suspect Contaminated Grain' and submitted to the Canadian Grain Commission. Determination as to whether grain is contaminated will be made by the Grain Research Laboratory in consultation with the Chief Grain Inspector for Canada. Samples deemed to be contaminated are graded 'Canary Seed, Sample Condemned'.

Earth pellets (EP)

Hard earth pellets are pellets that do not crumble under light pressure.

See **Stones (STNS)**

Soft earth pellets are pellets that crumble under light pressure.

See **Soft earth pellets (SEP)**

Ergot (ERG)

Ergot is a plant disease producing elongated fungal bodies that have a purplish-black exterior, a purplish-white to off white interior, and a relatively smooth surface texture.

Excreta (EXCR)

Excrement from any animal including mammals, birds and insects.

▲ **Important:** Wear gloves and a mask to handle any samples that you suspect may contain excreta.

Extraneous material

See **Contaminated grain (CONTAM GRN)**

Fertilizer pellets (FERT PLTS)

Fertilizer pellets are a manufactured plant nutrient product used by producers in the production of grain. They are typically small, round or irregular shaped and usually white, grey, brown, pink or reddish in colour.

Procedure

- Handpick any fertilizer pellets and determine the concentration in the net working sample.
 - Fertilizer pellets are assessed as stones (STNS) when the concentration does not exceed 1.0% of the net sample weight.
 - Samples containing fertilizer pellets in excess of 1.0% of the net sample weight are graded 'Canary Seed, Held IP Suspect Contaminated Grain'. The sample should be submitted to the Canadian Grain Commission. Determination as to whether grain is contaminated will be made by the Grain Research Laboratory in consultation with the Chief Grain Inspector for Canada. Samples deemed to be contaminated are graded 'Canary Seed, Sample Condemned'.
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Fireburnt (FBNT)

Samples that show any evidence of being charred or scorched by fire are considered fireburnt. Evidence includes odour or pieces of charred wood.

Foreign material (FM)

Foreign material is assessed in processed samples only. It includes all material other than whole, broken or hulled canary seed.

See **Hulled seeds (HULL)**

Glabrous (GLB)

Refers to canary seed varieties which do not have tiny sharp hairs or spicules attached to the hull. Also known as hairless.

Note: On written request, the percentage of glabrous can be reported in the remarks section of grading certificate

Heated kernels (HTD)

Heated kernels are red or orange, and have the odour typical of grain that has deteriorated in storage or has been damaged by artificial drying. Rotted (ROT) kernels are included in the tolerance for heated.

Heated seeds of other grains are included in the tolerance for heated.

**Hulled seeds (HULL) **

Hulled seeds are canary seeds that have their hulls removed.

They are considered dockage and reported as a percentage of the gross weight of the sample.

Note: In processed samples, hulled seeds are not considered foreign material (FM). They are reported as a percentage of the gross weight of the sample.

Inert material (INERT MTL)

Inert material refers to mineral matter such as stones (STNS), coal shale and hard and soft earth pellets (EP).

Odour (ODOR)

There is no numeric tolerance for odour. Consider:

- basic quality of the sample
- type and degree of the odour
- presence of visible residue causing the odour

If odour is the grade determinant and there is ...	Then the grade is...
A distinct objectionable odour not associated with the quality of the grain, but not heated or fireburnt	Canary Seed, Sample Canada Account Odour
A distinct heated odour	Canary Seed, Sample Canada Account Heated
A distinct fireburnt odour	Canary Seed, Sample Canada Account Fireburnt

Rotted (ROT)

See **Heated kernels (HTD)**

Soft earth pellets (SEP)

Soft earth pellets are:

- earth pellets that crumble into fine dust under light pressure, using a finger only—if they do not crumble, they are considered stones (STNS)
- any non-toxic material of similar consistency

Procedure

1. Handpick soft earth pellets from a representative portion of the cleaned sample.
 2. Soft earth pellets constituting 10% or less of the sample are assessed as dockage.
 3. Where soft earth pellets represent more than 10% of the net weight, the sample is graded ‘Canary Seed, Sample Canada Account Admixture’.
-

Stones (STNS)

Stones are hard shale, coal, hard earth pellets, and any other nontoxic materials of similar consistency. Fertilizer pellets are assessed as stones when constituting 1.0% or less of the net sample weight. See **Fertilizer pellets (FERT PLTS)** for the specific procedure to be followed when samples contain fertilizer pellets.

Procedure

1. Handpick stones from a representative portion of the cleaned sample.
 2. Determine stone concentration in the net sample.
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Treated seed and other chemical substances

See **Contaminated Grain (CONTAM GRN)**.

Variety (VAR)

Only varieties registered in Canada under the *Seeds Act* are eligible for the top grades of canary seed.

The Canadian Food Inspection Agency (CFIA) is responsible for the registration of varieties in Canada. Consult the CFIA’s [database of varieties registered in Canada](#) online to determine if a given variety is registered in Canada.

Primary and export grade determination table

Canary Seed, Canada (CAN), standard of quality

Grading factor	Canada Canary Seed	Grade, if Canary Seed specs not met
Degree of soundness	Reasonably well mature, cool and sweet	
Fireburnt %	0.0	Canary Seed, Sample Canada Account Fireburnt
Heated and binburnt %	1.0	Canary Seed, Sample Canada Account Heated

Canary Seed, Canada (CAN), foreign material included in dockage

Grading factor	Canada Canary Seed	Grade, if Canary Seed specs not met
Ergot %	0.04	Canary Seed, Sample Canada Account Ergot
Excreta %	0.01	Canary Seed, Sample Canada Account Excreta
Inert material %	0.2	Canary Seed, Sample Canada Account Inert Material
Total % Foreign material	1.0	Canary Seed, Sample Canada Account Admixture

Export shipments

Cargoes containing dockage may not be shipped except with permission from the Canadian Grain Commission.

Determination of dockage

Refer to the **Determination of dockage** procedure described in this chapter. Dockage is reported to the nearest 0.1%.

Grading

Canary seed on export is graded in accordance with the primary and export grade determination table.