




12. Domestic mustard seed

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Classes

Domestic mustard seed is classed as yellow, brown or oriental, or mixed. The class forms part of the grade name; for example, *Domestic Mustard Seed, Sample Canada Yellow Account Heated*.

Identifying classes of domestic mustard seed

| Class | Colour | Approximate size | Shape | Surface |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Yellow | Light creamy-yellow to yellow Occasional seed is light or yellowish brown | 2 to 3 mm in diameter | Spherical or oval | Textured, similar to an orange peel, hilum area—small white spot on a deep yellow to light tan circular area |
| Brown | Reddish-brown to dark-brown | 2 mm or less in diameter | Spherical or oval | Predominant netting, ridges are thicker than oriental mustard, hilum area – white on a black or darker brown circular area |
| Oriental | Predominantly yellow to dark-yellow, with some seeds ranging from light brown to brown | 1.2 to 2.0 mm in width, 1.6 to 3.0 mm in length | Oval | Predominant netting, not as predominant as brown mustard, ridges are fine, hilum area – white on a darker yellow to lighter brown circular area |
| Mixed | Yellow and brown mustard seed containing less than 90.0% of one class See also <i>Domestic mustard seed, oriental: Other classes</i> | | | |

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 procedures 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 is assessed in two stages.

1. Follow *Normal cleaning procedures*, using the Carter dockage tester.
2. Follow procedures for *Cleaning for grade improvement*. This cleaning can be done at any time after the cleaning assessment has been completed.

Dockage not reported

- ▲ **Important:** Dockage is not reported for
 - Domestic Mustard Seed, Sample Canada (class) Account Fireburnt
 - Domestic Mustard Seed, Sample Salvage
 - Domestic Mustard Seed, Sample Condemned
 - Unofficial samples declared as processed

Normal cleaning procedures

- ▲ **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 | # 3 |
| Air control | # 7 |
| Riddle | No. 000 |
| Top sieve | Blank tray |
| Centre sieve | none |
| Bottom sieve | none |
| Sieve cleaner control | off |

2. You also need the following hand sieves:

| Round-hole hand sieves | Slotted hand sieves |
|------------------------|---------------------|
| No. 5.5 | No. .028 |
| No. 6 | No. .032 |
| No. 6.5 | No. .035 |
| No. 7 | No. .038 |
| No. 7.5 | No. .040 |

3. 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.

4. For hand sieving use approximately 250 g.

▲ Important:

- Ensure you start with the right sized sieves. When using a hand sieve, move the sieve from left to right 30 times, in a steady motion. One complete motion is approximately 10 cm from the center to one side, back to the center, approximately 10 cm to the other side and back to the center.
 1. Use whichever round-hole sieve will achieve maximum removal of large material with minimum loss of domestic mustard seed.
 2. Use whichever slotted sieve will achieve maximum removal of weed seeds with minimum loss of domestic mustard seed.

5. Combine the separated, cleaned 250-g portions.

6. Turn on the Carter dockage tester.

7. Pour the sample into the hopper.

8. After the sample has passed through the machine, turn off the machine.

- Reduce the air setting to #5 if there is a large loss of whole, reasonably sound seed.
- If the sample after normal cleaning with air control at #7 qualifies only for *Sample* grade, you must start all over again. Recombine the sample with whatever dockage material has been removed. Re-assess dockage with the appropriate sieves and the air control set at #5.

9. Determine dockage, using the list under *Composition of dockage*.

Composition of dockage

Dockage includes

- Material remaining on top of the round-hole hand sieve
- Material passing through the slotted hand sieve
- Material passing over the No. 000 riddle
- Material removed by aspiration
- Material removed by *Cleaning for grade improvement*

Primary elevator samples, commercially clean

Commercially clean samples exiting primary elevators can have up to 0.5% for broken and reasonably sound mustard seed deducted from the gross weight of the dockage. Samples exiting primary elevators are considered commercially clean when the net dockage does not exceed 2.5% of the sample weight. There is no deduction applicable to producer deliveries or submitted samples.

Primary elevator samples, not commercially clean

In not commercially clean samples exiting primary elevators, there is no allowance for broken and reasonably sound mustard seed. All the material removed by the slotted sieve is assessed as dockage.

Cleaning for grade improvement

If the grade of a sample can be improved by additional cleaning, perform the cleaning and add the additional material to dockage. Cleaning for grade improvement can be done at any time after the cleaning assessment has been completed, including on export.

Carter dockage tester

1. After the cleaning assessment has been completed, examine the material to be removed and select your equipment according to the material you want to remove. See the table *Cleaning for grade improvement— domestic mustard seed*.
2. Pass the sample through the Carter dockage tester.
3. Weigh the additional dockage and add it to the original dockage.

Spiral cleaner— for yellow mustard seed and only upon request**Operating procedures**

1. The sample to be cleaned by the spiral is the net sample remaining after normal cleaning procedures.
2. Pour the sample into the feed hopper at the top of the spiral. Once the sample has passed through the spiral, lightly tap it to remove any lodged seeds remaining on the flights..
3. Collect the seeds that have discharged from the bottom spout (spout closest to the core of the cleaner)
4. Determine the percentage by weight of the seeds that have discharged and determine if more than 5.0% of yellow mustard has been removed per grade improvement.

Reporting procedures

1. Where the grade is not improved or more than 5.0% of domestic mustard is removed for each grade improvement, the grade and dockage will not be revised.
2. Where the grade can be improved while removing 5.0% or less of domestic mustard for each grade improvement, the certificate will state only the grade and dockage achieved through use of the spiral cleaner or Carter dockage tester.

Cleaning for grade improvement—domestic mustard seed

| Material to be removed | Equipment | Effect on composition of dockage |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------|
| Excessive inseparable weed seeds or damaged mustard seeds for yellow, brown and oriental mustard seed Note: The material originally removed by aspiration is to be reconstituted back into the sample prior to cleaning for improvement. | Spiral cleaner—on request, for yellow mustard seed only | |
| | Carter dockage tester set as follows: | |
| | Feed control | # 3 |
| | Air control | # 7 |
| | Riddle | No. 000 |
| | Top sieve | No. 4.5 or No. 5 round-hole |
| | Centre sieve | blank tray |
| | Bottom sieve | none |
| | Sieve cleaner control | off |
| Canola or wild mustard in yellow mustard seed | Carter dockage tester set as follows: | |
| | Feed control | # 3 |
| | Air control | off |
| | Riddle | No. 000 |
| | Top sieve | none |
| | Centre sieve | No. 4.5 or No. 5 round-hole |
| | Bottom sieve | blank tray |
| | Sieve cleaner control | off |

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.

Procedures

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

Example

95.0% Domestic Mustard Seed, No. 1 Canada Yellow

4.0% Rye, No. 2 Canada Western

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. For grading, percentages by weight refer to percentages of 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 tables.

Crush

A crush is one pass of the roller under firm pressure over a seed stick on masking tape.

Non-registered varieties

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 domestic mustard seed (in grams)

| Grading factor | Sample portion size range | |
|----------------------------------------------------------|---------------------------|----------------|
| | Minimum | Maximum |
| Blotched (Oriental mustard seed) | 5 g | 25 g |
| Canola | 5 g | 25 g |
| Cockle | 5 g | 50 g |
| Colour | working sample | working sample |
| Conspicuous admixtures | 5 g | 50 g |
| Damage | 5 g | 25 g |
| Distinctly detrimental | 5 g | 50 g |
| Distinctly green | 500 seeds | 1000 seeds |
| Ergot | 500 g | working sample |
| Excreta | working sample | working sample |
| Fertilizer pellets | working sample | working sample |
| Fireburnt | working sample | working sample |
| Heated | 500 seeds | 1000 seeds |
| Inconspicuous admixture (Brown & Oriental mustard seed) | 5 g | 25 g |
| Odour | working sample | working sample |
| Other classes | 5 g | 25 g |
| Other distinctly detrimental seeds (Yellow mustard seed) | 5 g | 25 g |
| Rime | 5 g | 25 g |
| Sclerotinia sclerotiorum | 100 g | 500 g |
| Soft earth pellets | working sample | working sample |
| Stones | working sample | working sample |
| Treated Seed | working sample | working sample |
| Wild mustard seed | 5 g | 25 g |

Grading factors

 Images available on web version

Blotched seeds

Blotched seeds are oriental mustard seeds with black or brown discolourations on the seed coat.

- Seeds only partly discoloured but otherwise sound are considered sound, but the discolouration is taken into account in the evaluation of colour. See *Colour*.
- Seeds completely discoloured by blotch are considered damaged. See *Damage*.

Broken (BKN)

Any broken mustard that remains in the sample after cleaning and is otherwise sound is considered to be sound.

Canola (CNL)

Brown and oriental mustard seed

- canola is classed as *Inconspicuous admixture*.

Yellow mustard seed

- canola is classed as *Distinctly detrimental*.

▲ **Important:** Grain inspectors are authorized to withhold grades on samples with unidentifiable admixtures until results of analyses are confirmed by seed analysts.

Classes

Domestic mustard seed is classed as yellow, brown or oriental, or mixed. The class forms part of the grade name; for example, *Domestic Mustard Seed, Sample Canada (Class), Account Heated*. For a description of classes, see *Identifying classes of domestic mustard seed*.

Cockle (COC)

Cockle, or cow cockle, is a hard roundish seed with a dull surface covered with numerous small bumps giving the seed a rough spiky appearance. Colour can be deep black, bluish-black or orangish-brown.

Brown and oriental mustard seed

- cockle is part of *Conspicuous admixture*.

Yellow mustard seed

- cockle is considered *Distinctly detrimental* and included in *Total conspicuous inseparable seeds*.

Procedures

Use a microscope to examine the sample.

Colour (CLR)

In analysing colour, consider

- The general degree of maturity
- The amount and degree of discolouration, such as from weathering
- The proportion of damaged seeds, which are distinctly green or otherwise colour-damaged. See *Damage* and *Distinctly green*.
- The amount of rime—light rime is considered in the overall appearance of the sample. See *Damage*.

Conspicuous admixture (CADMX)

Conspicuous admixture is also called *Conspicuous inseparable seeds* in the grade determination tables.

Oriental and brown mustard seed

- Small seeds or broken seeds of other grains
- Weed seeds such as cow cockle, lamb's-quarters, ball mustard, pigweed, cleavers, smartweed and lady's-thumb.
- Any conspicuous foreign material except stones and soft earth pellets

Note: Canola and wild mustard are considered Inconspicuous admixture in oriental and brown mustard seed

See *Inconspicuous admixture*.

Yellow mustard seed

- Seeds and foreign material designated as distinctly detrimental. See *Distinctly detrimental*
- Small seeds and broken kernels of other grains
- Weed seeds such as pigweed, lady's-thumb, lamb's-quarters and smartweed
- Any conspicuous foreign material except stones and soft earth pellets

▲ **Important:** Grain inspectors are authorized to withhold grades on samples with unidentifiable admixtures until results of analyses are confirmed by seed analysts.

Conspicuous inseparable seeds

See *Conspicuous admixture*

Contaminated grain

▲ **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 residues 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.

Procedures

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, the sample shall be graded *Domestic Mustard 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: *Domestic Mustard Seed, Sample Condemned*.

Damage (DMG)

Damaged seeds include those that are

- Distinctly shrunken or shrivelled
- Badly discoloured from mould
- Completely and densely covered with rime
- Insect damaged, excessively weathered, sprouted, distinctly green, heated or otherwise damaged
- *Oriental mustard* – completely discoloured by blotch

Procedures

1. Handpick the representative portion to determine the content of visually damaged seeds without magnification.
2. Determine the percentage by weight.
3. Crush the appropriate number of strips from the portion remaining.
A crush is made with only one pass of the roller under firm pressure.
4. Convert the count of damaged seeds on the strip to percentage by weight. Add the percentage of visually damaged seeds and crushed seeds for *Total damage*.

Note: A 10-power magnifying lens may be used to confirm damage.

Distinctly detrimental (DDET)**Brown and oriental mustard seed**

- Cow cockle
- Sclerotinia

Yellow mustard seed

- Cow cockle
- Sclerotinia
- Wild mustard, canola/rapeseed
- Other distinctly detrimental seeds (see *Other distinctly detrimental seeds*)

| | |
|--------------------|-------------------------|
| Ball mustard | Stinkweed or pennycress |
| Cleavers | Tansy mustard |
| Cockle | Tumbling mustard |
| Dog mustard | Wild buckwheat |
| Hare's ear mustard | Wormseed mustard |

There are separate distinctly detrimental tolerances for cow cockle, sclerotinia and wild mustard in combination with canola or rapeseed and other distinctly detrimental seeds. All listed are included in the total of distinctly detrimental and total of conspicuous inseparable seeds.

Distinctly green (DGR)

Distinctly green tolerances are applied to crushed seeds which are a distinct green throughout. Pale green or immature seeds are taken into account in the evaluation of colour. See *Colour*.

Procedures

See *Damage*.

Earth pellets (EP)

- Hard earth pellets are pellets that do not crumble under light pressure.
See *Stones*.
- Soft earth pellets are pellets that crumble under light pressure.
See *Soft earth pellets*.

Ergot (ERG)

Ergot is a plant disease producing elongated fungus bodies with 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*

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.

Procedures

- Handpick any fertilizer pellets and determine the concentration in the net working sample.
- Fertilizer pellets are considered as a separate grading factor in all grades of domestic mustard seed.
 - Grades of domestic mustard seed may contain one fertilizer pellet in 1000 g, including samples of commercially clean mustard seed.
 - Samples containing one fertilizer pellet per 500 g up to 1.0% are graded *Domestic Mustard Seed, Sample Canada (Class) Account Fertilizer Pellets*.
 - Samples containing fertilizer pellets in excess of 1.0% of the net sample weight are graded *Domestic Mustard 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: *Domestic Mustard Seed, Sample Condemned*.

Important: For samples between 500 and 1000 g – if the sample contains one fertilizer pellet, the sample grades *Domestic Mustard Seed, Sample Canada (Class) Account Fertilizer Pellets*. If the sample contains no fertilizer pellets, it is considered to be within the grade tolerance.

Fireburnt kernels (FBNT)

Samples that show any evidence of being charred or scorched by fire are considered fireburnt. Evidence includes odour, pieces of charred wood, and so on. Fireburnt seeds pop when crushed.

Procedures

Samples considered fireburnt are graded *Domestic Mustard Seed, Sample Canada (Class) Account Fireburnt*.

Frost (FR)

See *Damage*.

Green (GR)

See *Distinctly green*.

Heated kernels (HTD)

Heated refers only to seeds that are distinctly heated or badly binburnt. Heated seeds have a heated odour.

Crushed seeds may be

- Black—badly binburnt
- Dark chocolate brown—distinctly heated
- Light tan—slightly damaged from oxidation. If they have an odour or are present with brown or black crushed seeds, they are considered heated. Otherwise, they are included in *Total damage*, not heated.

Procedures

1. Examine 500 seeds for evidence of heating.
 2. If no heated seeds detected, assess crushes for other damage. See *Damage*.
 3. If at least 1 heated seed is detected, crush and assess an additional 500 seeds for heated seeds.
 4. Heated seeds of other grains are included in the tolerance for *Heated*.
-

Inconspicuous admixture (INC ADMX)

In brown and oriental mustard seed, inconspicuous admixture includes

- Canola
- Common wild mustard seed
- Any other seeds that blend and are not readily identified

Procedures

To determine the percentage by weight of inconspicuous admixture, analyse the sample with the aid of a microscope.

- ▲ **Important:** Grain inspectors are authorized to withhold grades on samples with unidentifiable admixtures until results of analyses are confirmed by seed analysts.

Insect Damage (I DMG) 

Insect damaged seeds are characterized by a perforation of the seed coat.

See Damage.

Mixed classes (MXD CL)

Samples are designated mixed classes when they contain sufficient quantities of other classes of mustard seed. *See Other classes.*

Odour (ODOR)

There is no numeric tolerance for odour. Consider

- The basic quality of the sample
- The type and degree of the odour
- The 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 | <i>Domestic Mustard Seed, Sample Canada (Class), Account Odour</i> |
| A distinct heated odour | <i>Domestic Mustard Seed, Sample Canada (Class), Account Heated</i> |
| A distinct fireburnt odour | <i>Domestic Mustard Seed, Sample Canada (Class), Account Fireburnt</i> |

Other classes (OCL)

If a sample contains more than 10% other classes, it is designated *Mixed*. Mixed mustard seed is graded according to all specifications except other classes, as in *Mustard Seed, No. 1 Canada Mixed*.

Brown mustard seed

- other classes are yellow and oriental mustard seed and Brassica Carinata.

Oriental mustard seed

- other classes are yellow and brown mustard or Brassica Carinata.

| Other class | Tolerance |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brown mustard or Brown Brassica Carinata | Working tolerance for seeds with brown hulls <ul style="list-style-type: none"> • For Canada No. 1 Oriental, 2.0% • For Canada No. 2, 3, 4 Oriental, 5.0% |
| Yellow mustard or Yellow Brassica Carinata | Considered <i>Mixed</i> if sample contains more than 10% of yellow mustard seed |

Note: Working tolerances are applied in addition to the established grading tolerances.

Yellow mustard seed

- other classes are brown and oriental mustard seed or Brassica Carinata.

Other distinctly detrimental seeds (ODET)

In yellow domestic mustard seed, the seeds listed below are considered *Other distinctly detrimental seeds*.

| | |
|--------------------|-------------------------|
| Ball mustard | Stinkweed or pennycress |
| Cleavers | Tansy mustard |
| Cockle | Tumbling mustard |
| Dog mustard | Wild buckwheat |
| Hare's ear mustard | Wormseed mustard |

- ▲ **Important:** Grain inspectors are authorized to withhold grades on samples with unidentifiable admixtures until results of analysis are confirmed by seed analysts.

See *Distinctly detrimental*.

Rime

Rime is the lining of the pod adhered to the seed. Seeds that are completely and densely covered with white rime, with the exception of the hilum, are classed as damaged in any grade. Seeds with light rime sparsely covering the seed coat are

- Considered as sound if not otherwise damaged
- Considered in the evaluation of colour. See *Colour*.

Sclerotinia sclerotiorum (SCL)

Sclerotinia sclerotiorum is a fungus producing hard masses of fungal tissue, called *sclerotia*. The sclerotia vary in size and shape, have a coarse surface texture, vary in exterior color from dark black to gray to white and have a pure white interior.

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*.
- Any non-toxic material of similar consistency

- ▲ **Important:** In domestic mustard seed, fertilizer pellets are not considered soft earth pellets. See *Fertilizer pellets*.

Sprouted (SPTD)

Sprouted mustard is defined as those seeds having a ruptured seed coat in combination with either a sprout that protrudes beyond the normal contour of the seed or distinct swelling of the seed. Seeds having a ruptured seed coat that are otherwise sound are only considered sprouted when found in combination with seeds meeting the definition of sprouted.

Procedures

1. Divide the sample to the appropriate representative portion.
2. Handpick the representative portion for sprouted seeds.
3. Determine the percentage by weight.

Note: Sprouted mustard is included in “Total Damage” for grade assessment.

Stones (STNS)

Stones are hard shale, coal, hard earth pellets, and any other nontoxic materials of similar consistency.

Note: Fertilizer pellets are **not** assessed as stones in samples of Domestic Mustard Seed. See *Fertilizer pellets*.

Procedures

1. Handpick stones from a representative portion of the cleaned sample.
2. Determine stone concentration in the net sample.
 - Samples of grain grown in western Canada containing stones in excess of “basic grade” tolerances, up to 2.5% are graded *Domestic Mustard Seed, Rejected “basic grade” Account Stones*. The “basic grade” refers to a grade established in the Canada Grain Regulations (grades listed in the first column in grade determination tables) that would have been assigned to the sample if it contained no stones.
 - Samples of grain grown in eastern Canada containing stones in excess of grade tolerances are degraded to lower grades. Samples containing stones in excess of the tolerance of the lowest grade established by regulation up to 2.5% are graded *Domestic Mustard Seed, Sample Canada (Class) Account Stones*.
 - Samples of western and eastern Canadian grain containing more than 2.5% stones are graded *Domestic Mustard Seed, Sample Salvage*.

Examples: Western Canada

Excerpt from grade determination tables for
Domestic Mustard Seed

| Grade name | Stones % |
|--------------|-------------|
| No. 1 Canada | 0.05 |
| No. 2 Canada | 0.05 |
| No. 3 Canada | 0.05 |
| No. 4 Canada | 0.10 |

Basic grade:..... *Domestic Mustard Seed,
No. 2 Canada (Class)*

Reason for basic grade:..... 2.0% Distinctly green

| If the above sample contained | Grade in western Canada |
|-------------------------------|--------------------------------------------------------------------------------|
| 0.08% stones | <i>Domestic Mustard Seed, Rejected No. 2 Canada (Class) Account Stones</i> |
| 1.0% stones | <i>Domestic Mustard Seed, Rejected No. 2 Canada (Class) Account Stones</i> |
| 3.0% stones | <i>Domestic Mustard Seed, Sample Salvage</i> |

Examples: Eastern Canada

Excerpt from grade determination tables for
Domestic Mustard Seed

| Grade name | Stones % |
|--------------|-------------|
| No. 1 Canada | 0.05 |
| No. 2 Canada | 0.05 |
| No. 3 Canada | 0.05 |
| No. 4 Canada | 0.10 |

Basic grade:..... *Domestic Mustard Seed,
No. 2 Canada (Class)*

Reason for basic grade:..... 2.0% Distinctly green

| If the above sample contained | Grade in eastern Canada |
|-------------------------------|------------------------------------------------------------------------|
| 0.08% stones | <i>Domestic Mustard Seed, No. 4 Canada (Class)</i> |
| 1.0% stones | <i>Domestic Mustard Seed, Sample Canada (Class) Account Stones</i> |
| 3.0% stones | <i>Domestic Mustard Seed, Sample Salvage</i> |

Treated seed and other chemical substances

See *Contaminated Grain*.

Variety (VAR)

Domestic mustard seed is graded without reference to variety.

Wild mustard (WM)

Brown and oriental mustard seed

- wild mustard seeds are classed as *Inconspicuous admixture*.

Yellow mustard seed

- wild mustard seeds are classed as *Distinctly detrimental*.

- ▲ **Important:** Grain inspectors are authorized to withhold grades on samples with unidentifiable admixtures until results of analyses are confirmed by seed analysts.

Primary and export grade determination tables

Domestic Mustard Seed, Brown, Canada (CAN), standard of quality

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|---------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Degree of soundness | Reasonably well matured, sweet, good natural colour | Fairly well matured, sweet, reasonably good colour | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | |
| Variety | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard | |
| Other Classes % | 1 | 2 | 5 | 10 | Over 10% -use all other grading criteria and grade as <i>Domestic Mustard Seed (grade) Mixed</i> |

Note: The class, whether yellow, oriental, brown or mixed is added to the grade name

Domestic Mustard Seed, Brown, Canada (CAN), damage

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|--------------------|--------------|--------------|--------------|--------------|-------------------------------------------------------------------|
| Distinctly Green % | 1.5 | 2.0 | 3.5 | 3.5 | <i>Domestic Mustard Seed, Sample Canada Brown Account Damaged</i> |
| Heated % | 0.1 | 0.2 | 0.5 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Heated</i> |
| Total % Damage | 1.5 | 3.0 | 5.0 | 10.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Damaged</i> |

Domestic Mustard Seed, Brown, Canada (CAN), foreign material

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cow cockle % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Sclerotinia % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Total % Distinctly detrimental | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Total % Conspicuous inseparable seeds | 0.3 | 0.5 | 0.7 | 3.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Inconspicuous admixture % | 1.0 | 1.0 | 1.0 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Ergot % | 0.05 | 0.05 | 0.05 | 0.05 | <i>Domestic Mustard Seed, Sample Canada Brown Account Ergot</i> |
| Excreta % | 0.01 | 0.01 | 0.01 | 0.01 | <i>Domestic Mustard Seed, Sample Canada Brown Account Excreta</i> |
| Soft earth pellets % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Brown Account Admixture</i> |
| Stones % | 0.05 | 0.05 | 0.05 | 0.10 | 2.5% or less - <i>Domestic Mustard Seed, Rejected (grade) Brown Account Stones, or Domestic Mustard Seed, Sample Canada Brown Account Stones</i> Over 2.5% - <i>Domestic Mustard Seed, Sample Salvage</i> |

Domestic Mustard Seed, Oriental, Canada (CAN), standard of quality

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|-----------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Degree of soundness | Reasonably well matured, sweet, good natural colour | Fairly well matured, sweet, reasonably good colour | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | |
| Variety | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | | |
| Other Classes % (*) | 1 | 2 | 5 | 10 | Over 10% - use all other grading criteria and grade as <i>Domestic Mustard Seed (grade) Mixed</i> |

(*) See working tolerance for "Other Classes"

Note: The class, whether yellow, oriental, brown or mixed is added to the grade name

Domestic Mustard Seed, Oriental, Canada (CAN), damage

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|--------------------|--------------|--------------|--------------|--------------|----------------------------------------------------------------------|
| Distinctly Green % | 1.5 | 1.5 | 3.5 | 3.5 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Damaged</i> |
| Heated % | 0.1 | 0.2 | 0.5 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Heated</i> |
| Total % Damage | 1.5 | 3.0 | 5.0 | 10.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Damaged</i> |

Domestic Mustard Seed, Oriental, Canada (CAN), foreign material

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|---------------------------------------|--------------|--------------|--------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cow cockle % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Sclerotinia % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Total % Distinctly detrimental | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Total % Conspicuous inseparable seeds | 0.3 | 0.5 | 0.7 | 3.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Inconspicuous admixture % | 0.5 | 1.0 | 1.0 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Ergot % | 0.05 | 0.05 | 0.05 | 0.05 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Ergot</i> |
| Excreta % | 0.01 | 0.01 | 0.01 | 0.01 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Excreta</i> |
| Soft earth pellets % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Oriental Account Admixture</i> |
| Stones % | 0.05 | 0.05 | 0.05 | 0.10 | 2.5% or less - <i>Domestic Mustard Seed, Rejected (grade) Oriental Account Stones</i> , or <i>Domestic Mustard Seed, Sample Canada Oriental Account Stones</i> Over 2.5% - <i>Domestic Mustard Seed, Sample Salvage</i> |

Domestic Mustard Seed, Yellow, Canada (CAN), standard of quality

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|---------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Degree of soundness | Reasonably well matured, sweet, good natural colour | Fairly well matured, sweet, reasonably good colour | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | May have the natural odour associated with low-quality seed not any odour that would indicate serious deterioration | |
| Variety | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard registered under the <i>Seeds Act</i> | Any variety of mustard | |
| Other Classes % | 1 | 2 | 5 | 10 | Over 10% - use all other grading criteria and grade as <i>Domestic Mustard Seed (grade) Mixed</i> |

Note: The class, whether yellow, oriental, brown or mixed is added to the grade name

Domestic Mustard Seed, Yellow, Canada (CAN), damage

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|--------------------|--------------|--------------|--------------|--------------|--------------------------------------------------------------------|
| Distinctly Green % | 1.5 | 1.5 | 3.5 | 3.5 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Damaged</i> |
| Heated % | 0.1 | 0.2 | 0.5 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Heated</i> |
| Total % Damage | 1.5 | 3.0 | 5.0 | 10.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Damaged</i> |

Domestic Mustard Seed, Yellow, Canada (CAN), foreign material

| Grading factor | No. 1 Canada | No. 2 Canada | No. 3 Canada | No. 4 Canada | Grade, if No. 4 specs not met |
|---------------------------------------|--------------|--------------|--------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cow cockle % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Sclerotinia % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Wild mustard, canola/rapeseed % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Other distinctly detrimental % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Total % Distinctly detrimental | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Total % Conspicuous inseparable seeds | 0.3 | 0.5 | 0.7 | 3.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Ergot % | 0.05 | 0.05 | 0.05 | 0.05 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Ergot</i> |
| Excreta % | 0.01 | 0.01 | 0.01 | 0.01 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Excreta</i> |
| Soft earth pellets % | 0.1 | 0.2 | 0.3 | 1.0 | <i>Domestic Mustard Seed, Sample Canada Yellow Account Admixture</i> |
| Stones % | 0.05 | 0.05 | 0.05 | 0.10 | 2.5% or less - <i>Domestic Mustard Seed, Rejected (grade) Yellow Account Stones, or Domestic Mustard Seed, Sample Canada Yellow Account Stones</i> Over 2.5% - <i>Domestic Mustard Seed, Sample Salvage</i> |

Export shipments

Export shipments can be commercially clean or not commercially clean.

Commercially clean (CCLN)

Export shipments are defined as commercially clean when the net dockage does not exceed 2.5% of the sample weight.

Dockage is reported to the nearest 0.1%.

A deduction for broken and reasonably sound mustard seed removed as dockage is allowed

- On shipments from a terminal elevator, not for direct export, of up to 0.5%
- On shipments for direct export, of up to 0.8%
- On shipments for direct export, exiting primary elevators, of up to 0.5%

Not commercially clean (NCC)

Export shipments that do not meet the standards for commercial cleanliness are referred to as not commercially clean. Such shipments are allowed only with the permission of the CGC.

For samples representing not commercially clean shipments approved by the CGC for shipment from terminal elevators, dockage is reported to the nearest 0.1%.

Instead of the allowances for broken seed in commercially clean shipments, a deduction of up to 0.2% is applied to establish net dockage for direct exports only.

Determination of dockage

Follow procedures for normal cleaning, with the Carter dockage tester set up as follows.

| Setting | Export |
|-----------------------|------------|
| Feed control | #3 |
| Air control | #5 |
| Riddle | No. 000 |
| Top sieve | Blank tray |
| Centre sieve | None |
| Bottom sieve | None |
| Sieve cleaner control | Off |

You will also need the following hand sieves.

| Round-hole hand sieves | Slotted hand sieves |
|------------------------|---------------------|
| No. 5.5 | No. .028 |
| No. 6 | No. .032 |
| No. 6.5 | |
| No. 7 | |
| No. 7.5 | |

Composition of dockage

In export domestic mustard seed shipments, dockage consists of

- Material other than mustard which passes over the No. 000 riddle or remains on top of the round-hole sieve
- Material that passes through the No. .028 or No. .032 slotted hand sieve, less the applicable allowance for broken or reasonably sound small whole mustard seed
- Material removed by aspiration
- Material removed by *Cleaning for grade improvement*

Grading

Domestic mustard seed on export is graded in accordance with the primary and export grade determination tables