20. Soybeans

Classes, types and varieties ........................................................................................................... 20-3

Determination of commercially clean ......................................................................................... 20-4

Determination of dockage .............................................................................................................. 20-6
  Dockage not reported ...................................................................................................................... 20-6
  Normal cleaning procedures ........................................................................................................ 20-6
  Composition of dockage ............................................................................................................. 20-7
  Optional analysis .......................................................................................................................... 20-7

Grading ........................................................................................................................................ 20-8
  Important definitions ..................................................................................................................... 20-8
  Net weight of sample ................................................................................................................. 20-8
  Hazardous substances in samples .............................................................................................. 20-8
  Rounding rules ............................................................................................................................. 20-8
  Non-registered varieties .............................................................................................................. 20-8
  Representative portions for grading ........................................................................................... 20-9

Grading factors .............................................................................................................................. 20-10
  Colour (CLR) ................................................................................................................................. 20-10
  Contaminated grain ..................................................................................................................... 20-10
  Damage (DMG) ............................................................................................................................ 20-10
  Downy mildew (DWNY MIL) ...................................................................................................... 20-10
  Earth pellets (EP) ........................................................................................................................ 20-10
  Ergot (ERG) .................................................................................................................................. 20-11
  Excreta (EXCR) ............................................................................................................................. 20-11
  Extraneous material .................................................................................................................... 20-11
  Fertilizer pellets (FERT PLTS) .................................................................................................... 20-11
  Fireburnt (FBNT) ......................................................................................................................... 20-11
  Foreign material (FM) .................................................................................................................. 20-11
  Foreign material other than grain (FMXGRN) ............................................................................. 20-12
  Frost (FR) .................................................................................................................................... 20-12
  Heated (HTD) ............................................................................................................................... 20-12
  Hulls (HULLS) ............................................................................................................................. 20-12
  Immature (IM) ............................................................................................................................... 20-12
  Insect Damage (IDMNG) ............................................................................................................. 20-12
  Mottled kernels ............................................................................................................................. 20-12
  Mouldy (MLDY) ............................................................................................................................ 20-13
  Mudball soybean ......................................................................................................................... 20-13
  Odour (ODOR) ............................................................................................................................. 20-13
  Other colours or bicoloured other than for mixed soybeans (OCLRBICLROTMXDSYB) ............ 20-13
  Other grains (OGS) ...................................................................................................................... 20-13
  Pokeweed stain ............................................................................................................................. 20-14
  Rancid .......................................................................................................................................... 20-14
  Sclerotinia sclerotiorum (SCL) .................................................................................................... 20-14
  Seed coats (SDC) ........................................................................................................................ 20-14
  Shrivelled (SHV) ........................................................................................................................... 20-14
  Soft earth pellets (SEP) ............................................................................................................... 20-15
  Splits (SPLTS) ............................................................................................................................. 20-15
  Sprouted ...................................................................................................................................... 20-15
  Stained and mottled (STND) ........................................................................................................ 20-15
Stones (STNS) ................................................................. 20-16
Test weight (TWT) .............................................................. 20-18
Treated seed and other chemical substances .................. 20-18
Variety (VAR) ..................................................................... 20-18

Special analyses ................................................................. 20-19
- Hilum colour (white hilum) .............................................. 20-19
- Sizing ........................................................................... 20-19

Primary and export grade determinants tables .............. 20-20
- Soybeans, Canada Yellow, Green, Brown, Black or Mixed (CAN) ................. 20-20
- Soybeans, Canada Yellow, Green, Brown, Black or Mixed (CAN), continued ..... 20-21

Export shipments .............................................................. 20-22
- Commercially clean ...................................................... 20-22
- Not commercially clean (NCC) .................................... 20-22
- Grading ........................................................................ 20-22
Classes, types and varieties

Soybeans may be yellow, green, brown or black. Colour is part of the grade name; for example, Soybeans, No. 1 Canada Yellow.

The method for determining the colour of a soybean is by seed coat colour.
Determination of commercially clean

Dockage is not assessed on soybean samples that meet the commercially clean specifications set out in the Soybean Export Shipments section. All samples must be analyzed to determine if they meet commercial cleanliness standards prior to dockage being assessed. The analysis of samples which are clearly not commercially clean may consist of a visual assessment. For example, if there is no doubt that a sample contains more than 0.2% of roughage material then dockage will be assessed using the procedures defined under Determination of Dockage. Where there is any doubt regarding whether the sample is commercially clean the sample must be analyzed using the procedures, and applying the specifications, listed below.

1. Using a Boerner-type divider, divide the sample to obtain a representative portion.
   - Official samples shall be at least 1 kg.
   - Unofficial samples shall be at least 1 kg.
2. Place approximately 250 grams of the sample at a time on the No. 8 round hole sieve.
3. Move the sieves from left to right 30 times using a sifting 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.
4. Separate broken soybean from the other material passing through the No. 8 round hole sieve.
   Note: Soybean hulls are included in the material other than broken soybeans.
5. The material other than broken soybeans is weighed and the percentage calculated to determine if it meets the commercially clean specification for material other than broken soybeans through the #8 round hole sieve. (Column 1 of the commercially clean specification table)
6. Handpick the entire sample remaining on top of the #8 round hole sieve for any roughage material and hulls.
7. The roughage and hulls remaining on the #8 round hole sieve is weighed and the percentage calculated to determine if it meets the commercial clean specification for roughage and hulls. (Column 2 of the commercially clean specification table)
8. The percentage of roughage and hulls and the percentage of material other than broken soybeans passing through the #8 round hole sieve are added together to determine if the total meets the commercially clean specification. (Column 3 of the commercially clean specification table)
9. The broken soybeans passing through the #8 round hole sieve are weighed and the percentage calculated to determine if it meets the commercially clean specification. (Column 4 or column 5 of the commercially clean specification table.

Should the percentage concentration of any factors determined in steps 1 through 9 exceed the specifications set out in columns 1 through 5 of the commercially clean specification table the sample will be considered to be not commercially clean.
Dockage will be assessed on samples determined to be not commercially clean using the procedures outlined under *Determination of Dockage*.

### Definition of commercially clean specifications for soybeans

<table>
<thead>
<tr>
<th>Grade name</th>
<th>1</th>
<th>2</th>
<th><em>(1+2)</em></th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans 1, 2, 3, 4, 5 Canada</td>
<td>Material other than broken soybeans through the #8 round hole sieve.</td>
<td>Roughage and Hulls</td>
<td>Total roughage, hulls and material other than broken soybeans through the #8 round hole sieve.</td>
<td>Broken Soybeans through the #8 round hole sieve</td>
<td>Not direct exports</td>
</tr>
<tr>
<td></td>
<td>0.1%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.75%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>
Determination of dockage

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 section of the guide.

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 samples graded as
- Soybeans, Sample Canada (colour) Account Fireburnt
- Soybeans, Sample Salvage
- Soybeans, Sample Condemned

Normal cleaning procedures

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

Samples that are commercially clean do not go through the Carter dockage tester.
1. Using a Boerner-type divider, divide the uncleaned sample to obtain a representative portion.
   - Official samples shall be at least 1kg.
   - Unofficial samples shall be at least 1kg.
2. Sieve the samples over the No. 8 round-hole hand sieve, using approximately 250 g at a time, to remove all readily removable material.
3. Set up the Carter dockage tester as follows:

<table>
<thead>
<tr>
<th>Feed control</th>
<th># 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air control</td>
<td># 7</td>
</tr>
<tr>
<td>Riddle</td>
<td>none</td>
</tr>
<tr>
<td>Top sieve</td>
<td>blank tray</td>
</tr>
<tr>
<td>Centre sieve</td>
<td>none</td>
</tr>
<tr>
<td>Bottom sieve</td>
<td>none</td>
</tr>
<tr>
<td>Sieve cleaner control</td>
<td>off</td>
</tr>
</tbody>
</table>

4. Turn on the Carter dockage tester.
5. Pour the sample into the hopper.
6. After the sample has passed through the machine, turn off the machine.
7. Lightly snap the retainer rod of the aspiration pan to loosen material gathered on the air screen.
8. Determine dockage, using the list under Composition of dockage.

**Composition of dockage**

- Material passing through the No. 8 round-hole sieve
- Up to 10% by weight of soft earth pellets handpicked from the sample
- Stems, pods, hulls, loose soybean seed coats, and coarse vegetable matter removed through aspiration with the Carter dockage tester, or handpicked from the sample.

▲ **Important:** Return all pieces of soybeans or whole soybeans, sclerotinia, ergot, weed seeds or other grains removed by aspiration to the sample where they are assessed as grading factors.

Aspiration is used only as an aid to help speed up the removal of lightweight dockage material from 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.

**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 soybeans.
   - 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% Soybeans, No. 1 CAN, Yellow
4.0% Domestic Mustard Seed, No. 1 CAN 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 net weight.

Hazardous substances in samples
Wear gloves 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.”

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 determinants table.

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 portions 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.

<table>
<thead>
<tr>
<th>Grading factor</th>
<th>Sample portion size range</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>working sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage</td>
<td>50</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Downy mildew</td>
<td>100</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Ergot</td>
<td>500</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Excreta</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Fertilizer pellets</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Fireburnt</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Foreign material</td>
<td>100</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Heated, mouldy, rancid</td>
<td>50</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Immature</td>
<td>50</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Other colours or bicoloured other than for mixed soybeans</td>
<td>100</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Sclerotinia sclerotiorum</td>
<td>500</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Soft earth pellets</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Splits, seed coats</td>
<td>250</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Stained, mottled</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Stones</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
<tr>
<td>Treated seed</td>
<td>working sample</td>
<td>working sample</td>
<td>working sample</td>
</tr>
</tbody>
</table>
Grading factors

Images available on web version

Colour (CLR)

Colour is evaluated on the cleaned sample after the removal of damaged seeds. Colour is assessed against the standard of quality by using the applicable standard prints published for the grade.

Note: Yellow soybeans with green coloured hulls, but are not immature, shall be graded no lower than Soybeans, No.2 Canada Yellow.

Contaminated grain

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

Contaminated is defined in the “Canada Grain Act” as; “Contaminated means, in respect of grain, containing any substance in sufficient quantity that the grain is unfit for consumption by persons or animals or is adulterated within the meaning of the regulations made pursuant to sections B.01.046(1), B.15.001 and B.15.002(1) of the Food and Drugs Act.”

Samples deemed to be contaminated by the Grain Research Laboratory in consultation with the Chief Grain Inspector for Canada are graded Soybeans, Sample Condemned.

Damage (DMG)

Damaged soybeans include those which are sprouted, frost-damaged, shriveled, ground-damaged, insect damaged, immature, or otherwise unsound.

Procedures
Soybeans showing some indication of possible internal damage are to be cut for confirmation of damage.

Downy mildew (DWNY MIL)

Downy mildew is a superficial coating of downy or powdery fungal growth. Caused by Peronospora manshurica, it can sometimes form a white coating on soybeans. These are spores of the fungus. They do not affect the processing or safety of the seed, but can affect the appearance.

An individual soybean is considered affected only if all of the fungal growth could be pulled together and the growth covers 50% or more of the surface area of the soybean.

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.

Ergot attacks cereal crops and is not usually present in soybeans, which are a broadleaf crop.

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

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

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 basis the net working sample.
- Fertilizer pellets are assessed as stones 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 Soybeans, Held IP Suspect Contaminated Grain.

Fireburnt (FBNT)

Fireburnt soybeans are seeds charred or scorched by fire. A cross-section of a fireburnt seed resembles charcoal with numerous air holes. The air holes result in a low weight seed which crumbles easily under pressure.

Procedure

Samples of soybeans containing fireburnt seeds are graded as Soybeans, Sample Canada Account Fireburnt.

Foreign material (FM)

Foreign material includes any material other than whole soybeans or split soybeans left in the sample after the removal of dockage.
Foreign material other than grain (FMXGRN)

Foreign material other than grain does not include ergot or stones, but does include
- Large weed seeds that did not pass through the No. 8 round-hole sieve
- Soft earth pellets which crumble under light pressure
- Soft fertilizer pellets
- Any other non-toxic material of a similar consistency
- Sclerotinia

Frost (FR)

Frost-damaged soybeans, when cut in cross-section, are
- Soybeans whose cotyledons are green or greenish-brown with a glassy wax-like appearance are considered frost-damaged.
- Seeds whose cotyledon are yellow or have just a halo of green around the outside of the cotyledon are considered sound, even if they are superficially affected by weathering.

See Damage

Heated (HTD)

- Soybeans with a light to dark brown cotyledon when cut in cross section are considered heated.
- Soybeans with a very light tan cotyledon when cut in cross section are considered damaged. See Damage.
- Heated seeds of other grains are included in the tolerance for Heated.

Hulls (HULLS)

See Seed coats.

Immature (IM)

Immature damaged soybeans are characterized by a green exterior appearance in conjunction with green discolouration penetrating the cotyledon. Soybeans that are green in appearance and have no discolouration of the cotyledon or just a halo of green around the outside of the cotyledon are to be assessed against the overall colour of the sample and are not to be graded lower than Soybeans, No. 2 Canada Yellow.

Note: Examination of the cotyledons is determined by cutting the soybeans in cross section. For grading purposes, immature damaged soybeans are considered as part of the “Total Damage” grade specification.

Insect Damage (I DMG)

Insect damaged kernels are characterized by a perforation of the seed coat in conjunction with a discoloration penetrating into the cotyledon.

See Damage

Mottled kernels

See Stained and mottled.
**Mouldy (MLDY)**

Mouldy soybeans are wrinkled and misshapen, and range in colour from medium to dark brown. Large areas of the affected bean are superficially covered with a grey mould. Mouldy beans often have a spongy texture and usually give off an unpleasant odour. They are included in the tolerance for *Heated*.

**Mudball soybean**

A soybean completely covered with caked-on mud is considered damaged.

**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

Grains grading No. 1 through 3 must have a natural odour. A sample would have to grade No. 4 for Damage before it could have a slight odour associated with low quality soybeans.

<table>
<thead>
<tr>
<th>If odour is the grade determinant and there is . . .</th>
<th>Then the grade is . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>If there is a distinct unnatural or objectionable odour not associated with the quality of the grain, but not heated or fireburnt</td>
<td>Soybean, Sample Canada (colour) Account Odour</td>
</tr>
<tr>
<td>A heated odour</td>
<td>Soybean, Sample Canada (colour), Heated</td>
</tr>
<tr>
<td>A fireburnt odour</td>
<td>Soybean, Sample Canada (colour), Fireburnt</td>
</tr>
</tbody>
</table>

**Other colours or bicoloured other than for mixed soybeans (OCLRRBICLROTMXDSYB)**

- Mixed soybeans are samples containing bicoloured soybeans or soybeans of another colour.
- Bicoloured soybeans are yellow or green soybeans with black or brown pigmented streaks or blotches in the seed coats.

**Other grains (OGS)**

All grains other than soybeans that remain in the sample after cleaning are considered other grains.
**Pokeweed stain**

Pokeweed stain is a bright red staining of the soybean seed coat caused by the sap of the pokeweed berry. In some cases, the staining may appear similar to pesticide treated seeds of soybeans.

▲ **Important:** Do not confuse pokeweed stain with pesticide treated seed or contaminated grain.

**Rancid**

Soybeans in various stages of rancidity are characterized by a deep pink discolouration on the seed coat and varying degrees of discolouration of the cotyledon.

Seeds having a deep pink discolouration on the seed coat are cut and, based upon the extent of discolouration of the cotyledon, assessed as follows:

<table>
<thead>
<tr>
<th>Discolouration of cotyledon</th>
<th>Assess as</th>
</tr>
</thead>
<tbody>
<tr>
<td>No discolouration of cotyledon to slight discolouration just below seed coat.</td>
<td>Considered in the evaluation of colour.</td>
</tr>
<tr>
<td>Pink discolouration of cotyledon greater than just below the seed coat level but not throughout the entire seed.</td>
<td>Considered as <strong>Damage.</strong></td>
</tr>
<tr>
<td>Pink discolouration extends throughout cotyledon.</td>
<td>Considered rancid and included in tolerance for <strong>Heated.</strong></td>
</tr>
</tbody>
</table>

**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 course surface texture, vary in exterior color from dark black to gray to white and have a pure white interior. Sclerotinia is included in *Foreign material other than grain* for grade determination.

**Seed coats (SDC)**

- In unprocessed samples, loose seed coats are assessed as dockage.
- In commercially clean samples, loose seed coats are assessed as **Splits.**

**Shrivelled (SHV)**

If the soybean is shrivelled, small and flat, it has no oil value and is considered **Damaged.**
**Soft earth pellets (SEP)**

Soft earth pellets are pellets that crumble under light pressure—if they do not crumble, they are considered stones. These pellets can be
- Earth and fertilizer pellets
- Any non-toxic material of similar consistency

**Procedure**
- Earth pellets may be removed as dockage. See *Normal cleaning procedures*.
- If soft earth pellets are over 10% of the gross weight of the sample, they become a grading factor, included in the tolerance for *Foreign material other than grain*.

1. Return the pellets to the sample.
2. Handpick soft earth pellets from a representative portion of the cleaned sample.
3. If soft earth pellets are the grade determinant, grade the sample *Soybeans, Sample Canada* (colour, Account Admixture).

**Splits (SPLTS)**

Splits include split soybeans, broken seeds that are less than three-quarters of the whole seed, and cotyledons that are loosely held together by the seed coat.

**Procedure**
1. Any slotted hand sieve may be used to help separate splits from the sample.
2. Handpick any small whole soybeans that pass through the sieve and return them to the sample.
3. Handpick the remaining splits in the sample and add them to those removed by sieving.
4. Determine the total percentage by weight of splits.

**Sprouted**

If a soybean shows evidence of sprouting, it is *Damaged*.

**Stained and mottled (STND)**

Staining or mottling on the surface is caused by weather, dirt, weed stain, or disease. If the soybeans are not damaged or discoloured internally, they are considered sound. See *Pokeweed stain*.

Limits are visible in the Canada standard prints, and are defined under standard of quality as
- Good natural colour ...........................................Canada No. 1
- Slightly stained ...........................................Canada No. 2
- Stained ............................................................Canada No. 3
- Badly stained ...................................................Canada No. 4 or 5

**Procedure**
Evaluate the stain or mottling according to its effect on the general appearance of the sample.
Stones (STNS)

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

Procedures

1. Handpick stones from a representative portion of the cleaned sample.
2. Determine stone concentration in the net sample.
   - In western Canada samples of grain containing stones in excess of “basic grade” tolerances, up to 2.5% are graded Soybeans, 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 determinant tables) that would have been assigned to the sample if it contained no stones.
   - In eastern Canada samples of grain 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 Soybeans, Sample Canada (colour) Account Stones.
   - In western and eastern Canada grain containing more than 2.5% stones is graded Soybeans, Sample Salvage.
Examples: Western Canada

Excerpt from grade determinant tables for Soybeans, Canada

<table>
<thead>
<tr>
<th>Grade name</th>
<th>Stones %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1 Canada</td>
<td>0.0</td>
</tr>
<tr>
<td>No. 2 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 3 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 4 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 5 Canada</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Basic grade: ..................... Soybeans, No. 1 Canada Yellow

<table>
<thead>
<tr>
<th>If the above sample contained</th>
<th>Grade in Western Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1% stones</td>
<td>Soybeans, Rejected No. 1 Canada Yellow</td>
</tr>
<tr>
<td>0.3% stones</td>
<td>Soybeans, Rejected No. 1 Canada Yellow</td>
</tr>
<tr>
<td>3.0% stones</td>
<td>Soybeans, Sample Salvage</td>
</tr>
</tbody>
</table>

Examples: Eastern Canada

Excerpt from grade determinant tables for Soybeans, Canada

<table>
<thead>
<tr>
<th>Grade name</th>
<th>Stones %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1 Canada</td>
<td>0.0</td>
</tr>
<tr>
<td>No. 2 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 3 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 4 Canada</td>
<td>0.1</td>
</tr>
<tr>
<td>No. 5 Canada</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Basic grade: ..................... Soybeans, No. 1 Canada Yellow

<table>
<thead>
<tr>
<th>If the above sample contained</th>
<th>Grade in Eastern Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1% stones</td>
<td>Soybeans, No. 2 Canada Yellow</td>
</tr>
<tr>
<td>1.0% stones</td>
<td>Soybeans, Sample Canada Yellow Account Stones</td>
</tr>
<tr>
<td>3.0% stones</td>
<td>Soybeans, Sample Salvage</td>
</tr>
</tbody>
</table>
Test weight (TWT)

Test weight is the weight of a measured volume of grain expressed in kilograms per hectolitre. For procedures, see Chapter 1 of this guide, *Determining test weight*.

Treated seed and other chemical substances

**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.

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

If a sample is suspected of being coated with a pesticide, desiccant, inoculant or if the sample contains evidence of any foreign chemical substance other than fertilizer pellets, the sample shall be graded *Soybeans, Held IP Suspect Contaminated Grain*.

▲ **Important:** Do not confuse pesticide treated seed with pokeweed stain, which is similar.

**Variety (VAR)**

Soybeans are graded without reference to variety.
**Special analyses**

Upon request, samples may be analyzed for other factors. The shipper of the soybeans indicates which factors are to be analyzed and which sieves to use.

**Hilum colour (white hilum)**

Hilum colour is not a grading factor.

Handpick a representative portion of not less than 100 g of the cleaned sample to determine the percentage by weight of Hilum colour.

**Sizing**

Analyse a representative portion of not less than 500 g of the cleaned sample. The shipper specifies the sieve size.
## Primary and export grade determinants tables

### Soybeans, Canada Yellow, Green, Brown, Black or Mixed (CAN)

<table>
<thead>
<tr>
<th>Grade name</th>
<th>Minimum test weight</th>
<th>Standard of quality</th>
<th>Degree of soundness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kg/hL (g/0.5 L)</td>
<td>Variety</td>
<td></td>
</tr>
<tr>
<td>No. 1 Canada</td>
<td>70 (356)</td>
<td>Any variety of soybeans registered under the Seeds Act</td>
<td>Cool, natural odour, good natural colour</td>
</tr>
<tr>
<td>No. 2 Canada</td>
<td>68 (346)</td>
<td>Any variety of soybeans registered under the Seeds Act</td>
<td>Cool, natural odour, may be slightly stained</td>
</tr>
<tr>
<td>No. 3 Canada</td>
<td>66 (335)</td>
<td>Any variety of soybeans registered under the Seeds Act</td>
<td>Cool, natural odour; may be stained</td>
</tr>
<tr>
<td>No. 4 Canada</td>
<td>63 (320)</td>
<td>Any variety of soybeans registered under the Seeds Act</td>
<td>Cool, may be badly stained</td>
</tr>
<tr>
<td>No. 5 Canada</td>
<td>59 (298)</td>
<td>Any variety of soybeans</td>
<td>Cool, may be badly stained</td>
</tr>
<tr>
<td>Grade, if No. 5 specs not met</td>
<td>Soybeans, Sample Canada (colour) Account Light Weight</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The colour is added to the grade name.
Soybeans, Canada Yellow, Green, Brown, Black or Mixed (CAN), continued

<table>
<thead>
<tr>
<th>Grade name</th>
<th>Heat-damaged or moldy</th>
<th>Total</th>
<th>Downy mildew</th>
<th>Other colours or bicoloured other than for mixed soybeans</th>
<th>Ergot</th>
<th>Excreta</th>
<th>Stones</th>
<th>Foreign material other than grain</th>
<th>Total</th>
<th>Splits</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1 Canada</td>
<td>0.0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0.01</td>
<td>0.01</td>
<td>0.0</td>
<td>0.1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>No. 2 Canada</td>
<td>0.2</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>0.03</td>
<td>0.01</td>
<td>0.1</td>
<td>0.3</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>No. 3 Canada</td>
<td>1.0</td>
<td>5</td>
<td>No limit</td>
<td>5</td>
<td>0.10</td>
<td>0.01</td>
<td>0.1</td>
<td>0.5</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>No. 4 Canada</td>
<td>3.0</td>
<td>8</td>
<td>No limit</td>
<td>10</td>
<td>0.25</td>
<td>0.01</td>
<td>0.1</td>
<td>2.0</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>No. 5 Canada</td>
<td>5.0</td>
<td>15</td>
<td>No limit</td>
<td>15</td>
<td>0.25</td>
<td>0.01</td>
<td>0.1</td>
<td>3.0</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Grade, if No. 5 specs not met</td>
<td>Soybeans, Sample Canada (colour) Account Heated or Mouldy</td>
<td>Soybeans, Sample Canada (colour) Account Damaged</td>
<td>Soybeans, Sample Canada (colour) Account Ergot</td>
<td>Soybeans, Sample Canada (colour) Account Excreta</td>
<td>Soybeans, Sample Canada (colour) Account Stones, or Soybeans, Sample Canada (colour) Account Stones Over 2.5%—Soybeans, Sample Salvage</td>
<td>Soybeans, Sample Canada (colour) Account Admixture</td>
<td>Soybeans, Sample Canada (colour) Account Admixture</td>
<td>Soybeans, Sample Canada (colour) Account Splits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The colour is added to the grade name.
Export shipments

Shipments can be commercially clean or not commercially clean.

Commercially clean

No dockage is assessed on commercially clean shipments.

Samples are considered commercially clean when the sample contains 0.2% or less by weight of pods, stems, or coarse vegetable matter, including 0.1% or less of material other than whole or broken soybeans that passes through the No. 8 round-hole sieve.

In addition, in samples of commercially clean shipments, the amount of finely broken soybeans that passes through a No. 8 round-hole sieve
- On shipments not for direct export, can be up to 0.75% by weight
- On shipments for direct export, can be up to 1.0% by weight

**Definition of commercially clean specifications for soybeans**

<table>
<thead>
<tr>
<th>Grade name</th>
<th>1</th>
<th>2</th>
<th>*3 (1+2)</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material other than broken soybeans through the #8 round hole sieve.</td>
<td></td>
<td>Roughage and Hulls</td>
<td>Total roughage, hulls and material other than broken soybeans through the #8 round hole sieve.</td>
<td>Broken Soybeans through the #8 round hole sieve.</td>
<td>Not direct exports</td>
</tr>
<tr>
<td>Soybeans 1,2,3,4,5 Canada</td>
<td>0.1%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.75%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Not commercially clean (NCC)

Shipments which do not meet the definition of commercially clean, are considered not commercially clean and are allowed only with the permission of the CGC. Dockage is reported to the nearest 0.1%.

A deduction of up to 0.2% is applied to take into account the buildup of attritional material and hulls for direct shipments only.

Grading

Soybeans on export are graded in accordance with primary grade standards and specifications.