DOUBLE SIEVE GRADING METHOD OF SOYA BEANS FOR THE 2016/17 SEASON

The Directorate: Food Safety and Quality Assurance of the Department of Agriculture, Forestry and Fisheries has granted the soya bean industry an extension of the dispensation on the grading of soya beans for the 2016 season. This dispensation means that the grading of soya beans can be done according to the double sieve grading method introduced during the 2015 season.

The dispensation is relevant to the new regulations for grading soya bean on a clean basis, as published by DAFF in June 2014. The double sieve method allows for a more objective and scientific manner to grade soya beans. It is also faster, more accurate and less tedious for the grain grader without compromising the position of either producers or agribusiness role players in the value chain.

Amendment of inspection methods

- A 1.8 mm slotted sieve will be used in combination with the 4.75 mm round-hole sieve for the determination of foreign matter in soya beans.
- The number of sieve strokes must be increased from 20 to 30 and the prescribed 30 strokes must be completed within 30 to 35 seconds.
- All matter other than soya beans, loose seed coats and pods of soya beans as well as glass, coal, dung, sclerotinia and metal that pass through the 1.8 mm slotted sieve during the sieving process is considered foreign matter.

Amendments to the grading table

- The maximum percentage foreign matter is increased from 4% to 5%. As a result of this, the maximum percentage for the combination of foreign matter and sclerotinia is increased from 6% to 7%.

TECHNICAL ASPECTS OF GRADING SOYA BEANS FOR THE 2016/17 SEASON

1. Definitions

The 1.8 mm slotted sieve, which is also been use for the grading of wheat, sunflower seed and sorghum, will also be used in combination with the 4.75 mm round-hole sieve for the determination of foreign matter. The definition of the 1.8 mm slotted sieve is as follow:

“1.8 mm slotted sieve” is a slotted sieve –

(a) with a flat bottom of metal sheet of 1,0 mm thickness with apertures 12,7 mm long and 1,8 mm wide with rounded ends. The spacing between the slots in the same row must be 2,43 mm wide and the spacing between the rows of slots must be 2,0 mm wide. The slots must be alternately orientated with a slot always opposite the solid inter segment of the next row of slots.
(b) of which the upper surface of the sieve is smooth;
(c) with a round frame of suitable material with an inner diameter of between 300 mm and 310 mm maximum and at least 50 mm high;
(d) that fits onto a tray with a solid bottom and must be at least 20 mm above the bottom of the tray;

The definition of foreign matter must also be amended to include the material that passes through the 1.8 mm slotted sieve and the definition must read as follow:

"foreign matter"

(a) means all matter that pass through the 1.8 mm slotted sieve during the sieving process.
(b) means all matter that do not pass through the 1.8 mm slotted sieve other than soya beans, glass, coal, dung, sclerotinia or metal and loose seed coats of soya beans as well as pods;

2. Inspection methods

Amendment of inspection methods is necessary to reflect the amendments in the determination of foreign matter and soya beans and pieces of soya beans that passes through the 4.75 mm round-hole sieve. The number of strokes must be increased from 20 to 30 to be certain that all matter smaller than 1.8 mm has the opportunity to pass through the sieve.

Determination of percentage of other grain, sunflower seed, stones, sclerotinia and foreign matter

15. The percentage of other grain, sunflower seed, stones, sclerotinia and foreign matter in a consignment of soya beans shall be determined as follows:

(a) Obtain working samples of at least 200 g from a representative sample of the consignment.
(b) Place the 1.8 mm slotted sieve in the pan and the 4.75 mm round-hole sieve on top of the 1.8 mm slotted sieve. Place the sample on the 4.75 mm round-hole sieve and screen the sample by moving the sieve 30 strokes to and fro, alternately away from and towards the operator of the sieve, in the same direction as the long axes of the slots of the 1.8 mm sieve. Move the sieve, which rests on a table or other suitable smooth surface, 250 mm to 460 mm away from and towards the operator with each stroke. The prescribed 30 strokes must be completed within 30 to 35 seconds: Provided that the screening process may also be performed in some or other container or an automatic sieving apparatus.
(c) Remove the foreign matter from both sieves by hand and add it to the foreign matter below the 1.8 mm sieve in the pan and determine the mass of the foreign matter. Remove all other grain, sunflower seed, stones and sclerotinia by hand from the working samples and determine the mass of the other grain, sunflower, seed, stones and sclerotinia separately.
(d) Express the respective masses thus determined as a percentage of the mass of the working sample concerned.
(e) Such percentage represents different percentage of other grain, sunflower seed, stones, sclerotinia and foreign matter in the consignment concerned.

**Determination of the soya beans and pieces of beans which pass through the 4,75 mm round-hole sieve**

16. The percentage of soya beans and pieces of soya beans which pass through the 4,75 mm round-hole sieve shall be determined as follows:

(a) Determine the mass of the soya beans and pieces of soya beans that pass through the 4.75 mm round-hole sieve and remain on top of the 1.8 mm slotted sieve of which the of other grain, sunflower seed, stones, sclerotinia and foreign matter have been removed express as percentage of the mass of the working sample.

(b) Such percentage represents the percentage soya beans and pieces of soya beans in the consignment which passes through the 4,75 mm round-hole sieve and not through a 1.8 mm slotted sieve.

**Determination of the percentage defective soya beans**

17. The percentage of defective soya beans shall be determined as follows:

(a) Obtain a working sample of at least 100 g soya beans that remained on top of the 4.75 mm round-hole sieve after the sieving action, which is free of other grain, sunflower seed, stones, sclerotinia and foreign matter, from the representative sample of the consignment.

(b) Sort the soya beans on the 4.75 mm round-hole sieve so that the defective soya beans retained.

(c) Determine the mass of the defective soya beans on the 4.75 mm round-hole sieve and express it as a percentage of the mass of the working sample concerned.

(d) Such percentage represents the percentage of defective soya beans in the consignment.

**Determination of percentage of soiled beans**

18. The percentage of soiled soya beans in a consignment of soya beans shall be determined as follows:

(a) Remove all soiled soya beans from the working sample obtained in regulation 17(a) by hand and determine the mass thereof.

(b) Express the mass thus determined, as a percentage of the mass of the working sample in regulation 17(a) obtained.

(c) Such percentage represents the percentage of soiled soya beans in the consignment concerned.
3. Grading table

Amendments to the grading table must also be done in the light of the additional material that passes through the 1.8 mm slotted sieve that has become part of the foreign matter. The maximum percentage foreign matter is increased from 4% to 5%. As a result of the combination of foreign matter and sclerotinia is increased from 6% to 7%.

**TABLE: STANDARDS FOR GRADES OF SOYA BEANS**

<table>
<thead>
<tr>
<th>Nature of deviation</th>
<th>Maximum percentage permissible deviation (m/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade SB1</td>
</tr>
<tr>
<td>(a) Wet pods</td>
<td>0.2%</td>
</tr>
<tr>
<td>(b) Foreign matter, including stones, other grain, sunflower seed and stones:</td>
<td>5%</td>
</tr>
<tr>
<td>Provided that such deviations are individually within the limits specified in items (c), (d) and (e)</td>
<td></td>
</tr>
<tr>
<td>(c) Other grain</td>
<td>0.5%</td>
</tr>
<tr>
<td>(d) Sunflower seed</td>
<td>0.1%</td>
</tr>
<tr>
<td>(e) Stones</td>
<td>1%</td>
</tr>
<tr>
<td>(f) Sclerotinia</td>
<td>4%</td>
</tr>
<tr>
<td>(g) Soya beans and parts of soya beans above the 1.8 mm slotted screen which pass through the 4.75 mm round hole screen</td>
<td>10%</td>
</tr>
<tr>
<td>(h) Defective soya beans on the 4.75 mm round hole screen</td>
<td>10%</td>
</tr>
<tr>
<td>(i) Soiled soya beans</td>
<td>10%</td>
</tr>
<tr>
<td>(j) Deviations in (b) and (f) collectively: Provided that such deviations are individually within the limits of said items</td>
<td>7%</td>
</tr>
</tbody>
</table>