

Soya bean crop quality overview:

2015/16 season

The extreme drought conditions experienced this past season has led to an approximately 27% (184 500ha) decline in the local soya bean production area. Yield was also negatively impacted, with the average national yield decreasing from 1,56t/ha in 2014/15 to 1,47t/ha. The result was an almost 31% (328 000 tons) decline in the commercial soya bean crop compared to the previous season.

Sunflower production surpassed soya bean production for the first time since the 2010/11 season. The major soya bean producing provinces, contributing 75% of the total crop, were Mpumalanga and the Free State. Numbers reflected in *Figure 1*, were obtained from the National Crop Estimates Committee (NCEC).

Figure 1: Tonnage and area utilised for soya bean production since the 2005/06 season.



According to the Bureau for Food and Agricultural Policy's *BFAP Baseline Agricultural Outlook 2016–2025*, a high demand for soya beans arising from expanded crushing capacity is expected to cause a sharp increase in area utilised for soya bean production in 2017.



Assuming normal rainfall patterns, production is expected to recover to more than 900 000 tons this year.

Global production

An estimated 312,81 million tons of soya beans were produced during the 2015/16 season, according to the *World Agricultural Supply and Demand Estimates (WASDE)* report (WASDE-563). The United States contributed 34%, Brazil 31% and Argentina 18% to this total. Global soya bean production during the 2016/17 season is projected to be 340,79 million tons. Soya beans account for more than half of the world's oilseed production.

During the 2016 harvesting season, a representative sample of each delivery of soya beans at the various silos was taken according to the prescribed grading regulations. A total of 143 composite soya bean samples, representing the different production regions, were analysed for quality and the results published in the

fifth annual *South African Soya Bean Crop Quality Report 2015/16 Season*.

Quality results summary

Of the 143 samples analysed for the purpose of this survey, 89% (127) were graded as Grade SB1 and 16 of the samples were downgraded to class other soya beans (COSB). During the previous two seasons, 87% (2014/15) and 88% (2013/14) of the samples were graded SB1.

The majority of the samples were downgraded as a result of either the presence of poisonous seeds exceeding the maximum permissible number of either one per 1 000g or seven per 1 000g, or as a result of the percentage other grain and/or foreign matter exceeding the maximum permissible deviations of 0,5% and 5% respectively.

According to the South African soya bean grading regulations, the determination of the percentage wet pods in a consignment must be performed based on a working sample of at least 10kg of soya beans from a representative sample of the consignment. Due to practical considerations, the samples received at the Southern African Grain Laboratory (SAGL) NPC from the grain storage companies, are typically ± 5 kg.

Pods were found in twelve of the 143

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samples graded. All of these pods were green upon receipt at the SAGL, but not wet according to the definition. The percentage of these pods in the samples ranged from 0,05 to 0,50% based on a working sample size of at least 200g.

The national average percentage of foreign matter has increased over the last five seasons, reaching its highest level this season, increasing from 0,34% in 2011/12 to 0,82% during the last season and to 0,85% now. The samples from North West had the highest weighted average percentage, namely 1,62%. The percentage in the rest of the samples ranged from 0,26 in the Northern Cape to 0,91 in Mpumalanga.

Presence of sclerotia

The number of samples containing sclerotia increased from 20 in the previous season to 36 this season. The highest percentages of sclerotia observed (0,76 and 0,64%) were on samples from Mpumalanga, followed by a sample from North West with 0,60%. These percentages are, however, still well below the maximum permissible level of 4%. The national weighted average percentage this season was 0,04% compared to the 0,01% of the previous season.

North West (eight samples) reported the highest weighted average percentage soya beans and parts of soya beans above the 1,8mm slotted sieve which pass through the 4,75mm round-hole sieve, namely 1,56%, and the sample from the Northern Cape the lowest at 0,40%. Mpumalanga, with the highest number of samples (91), reported an average of 0,90%. The Free State averaged 1,03% (23 samples). The national weighted average percentage decreased from 1,81% the previous season to 0,92% this season.

The lowest weighted average percentage of defective soya beans on the 4,75mm sieve, were observed on the samples from Mpumalanga, namely 1,46%. The Northern Cape reported the highest percentage of 4,94, followed by North West and KwaZulu-Natal with

3,99 and 3,34 respectively. The national weighted average increased slightly from 1,95% last season to 2,02% this season.

An estimated 95% of the area planted to soya beans in South Africa consists of genetically modified crops.

The national weighted average percentage soiled soya beans of 2,06% is the highest since this survey started in the 2011/12 season, when the average was 1,60%. The average was 0,77% last season. Average weighted percentages per province ranged from 1,28 in the Northern Cape to 4,46 in Limpopo.

Soiled soya beans

Although the number of samples containing soiled soya beans as well as the average percentage soiled soya beans per sample increased significantly, none of the percentages were above the maximum permissible deviation of 10% according to the grading regulations. Last season one sample

from Mpumalanga exceeded this limit.

Test weight, providing a measure of the bulk density of grain and oilseeds, does not form part of the grading regulations for soya beans in South Africa. An approximation of the test weight of these crop

samples was done by determining the g/1ℓ filling weight of each sample using the Kern 222 apparatus.

The test weight was then extrapolated by means of formulas obtained from the 'Test Weight Conversion Chart for Soya Bean' of the Canadian Grain Commission (CGC). The weighted average this season was 70,9kg/hℓ. Individual values ranged from 64,9 to 73kg/hℓ. Last season's values ranged from 63,3 to 78,2kg/hℓ and also averaged 70,9kg/hℓ.

Soya beans are the main oilseed crop produced in South Africa, driven mainly by the demand for protein feed in the animal feed industry. The nutritional component analyses, namely crude protein, crude fat, crude fibre and ash are reported on a dry basis (DB) (moisture-free basis).

The weighted average crude protein content this season was 40,22%, slightly higher than the 39,89 and 39,84% of the previous two seasons. The sample from the Northern Cape had the highest weighted average crude protein content of 41,56%, while Gauteng reported the lowest average, that of 38,86% (Figure 2).

Figure 2: Average crude protein content per province over five seasons.

