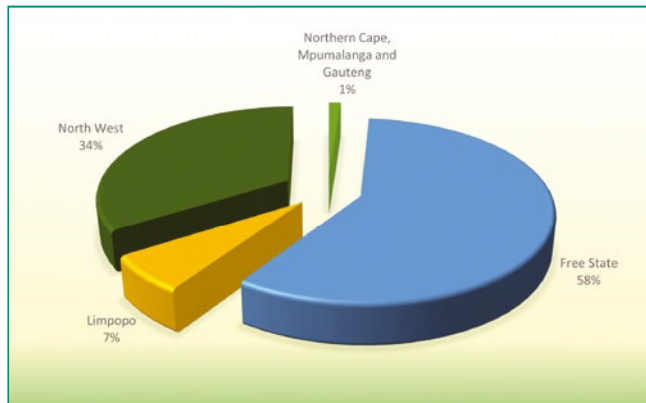


Sunflower crop quality overview: 2015/16 production season

The deep root system of a sunflower enables the plant to perform better than other crops during dry seasons, making sunflower seed production very suitable amid South African climatic conditions. As a result, sunflower seed production exceeded soya bean production this season for the first time since the 2010/11 season.

The final commercial sunflower crop figure of the 2015/16 season is 755 000 tons. This figure represents an increase of almost 14% (92 000 tons) compared to the 2014/15 season. The major sunflower-producing provinces, Free State and North West, contributed 92% of the total crop (Figure 1).

Figure 1: Provincial contribution to the production of the 2015/16 sunflower crop.



The area utilised for sunflower production increased by almost 25%, from 576 000ha in the previous season to 718 500ha this season. Due to the drought conditions, production only increased by 14% as the yield decreased from 1,15 to 1,05t/ha.

Annual improvements

Global sunflower seed production for the 2015/16 season stands at

42 465 million tons, with the Ukraine and Russia contributing 51% to this total. The forecast for the 2016/17 season is 47 397 million tons, according to figures published in the 2016 US Sunflower Crop Quality Report compiled by the United States (US) National Sunflower Association (NSA).

According to the Bureau for Food and Agricultural Policy's *BFAP Baseline Agricultural Outlook 2016–2025*, the sunflower area is expected to decline in 2017 to around 2015 levels, assuming normal rainfall patterns, before stabilising at approximately 560 000ha by 2025. An average production increase of 1,4% per annum is expected to result

in a production of 820 000 tons by 2025, driven by average annual improvements in yield of close to 3% in the same year.

During the 2016 harvesting season, a representative sample of each delivery of sunflower at the various silos was taken according to the prescribed grading regulations. A total of 176 composite

sunflower samples, representing the different production regions, were analysed for quality and the results published in the fourth annual *South African Sunflower Crop Quality Report 2015/16 Season*.

Of the 176 samples analysed for the purpose of this survey, 78% (138) were graded as Grade FH1 and 38 of the samples were downgraded to class other

sunflower seed (COSF). The percentage of FH1 samples showed a decrease compared to the 86 and 82% of the 2014/15 and 2013/14 seasons respectively. This decreasing trend could not be attributed to any single grading deviation.

Collective deviations

The majority of samples were downgraded as a result of the percentage of either the screenings, foreign matter or the collective deviations, or a combination of these exceeding the maximum permissible deviations of 4 and 6% respectively. The presence of poisonous seeds (*Datura* sp.) exceeding the maximum permissible number, one per 1 000g, was also a contributing factor.

Gauteng, represented by two samples, reported the highest weighted average percentage screenings of 3,60%, followed by the North West (N = 80) and Free State (N = 80) with 2,80 and 2,01% respectively. Limpopo (seven samples) reported the lowest average percentage screenings of 1,09%. The weighted national average was 2,34% compared to the 2,05% of the previous season. The maximum permissible deviation according to the grading regulations is 4%.

Sclerotia of *Sclerotinia sclerotiorum* was observed on 18 of the samples (10%), compared to the nine and eleven of the previous two seasons respectively. Fourteen of these samples originated in the North West and three in the Free State. The highest percentage (1,80%) was present on a sample from Mpumalanga. This is however still well below the maximum allowable level of 4%. Weighted average levels ranged from 0% for Gauteng and Limpopo, 0,03% in the Free State and 0,04% in North West

to 0,26% in Mpumalanga. The national average of 0,04% was equal to the previous season.

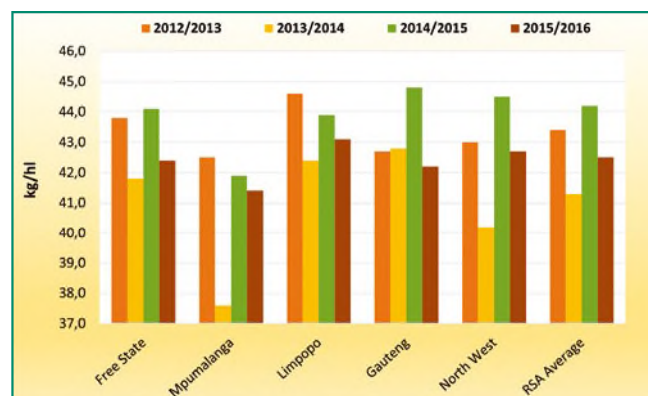
Foreign matter

The highest weighted percentage foreign matter (1,77%) was reported for the seven samples from Mpumalanga. The Free State and North West averaged 1,61 and 1,23% respectively. The lowest average percentage was found in Limpopo, namely 1,01%. The national average of 1,41% was the highest of the last three seasons.

Test weight, providing a measure of the bulk density of grain and oilseeds, does not form part of the grading regulations for sunflower seed 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 Sunflower Seed, Oil' of the Canadian Grain Commission (CGC). The weighted average this season was 42,5kg/hℓ. Individual values ranged from 35,0 to 48,1kg/hℓ. Last season's values ranged from 34 to 50,5kg/hℓ and averaged 44,2kg/hℓ (Figure 2).

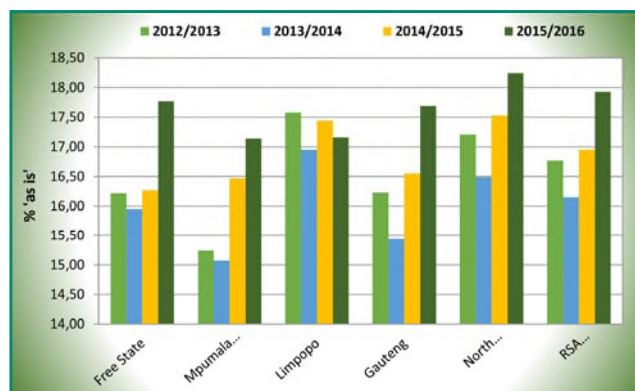
Figure 2: Comparison of the test weight per province over four seasons.



Nutritional component

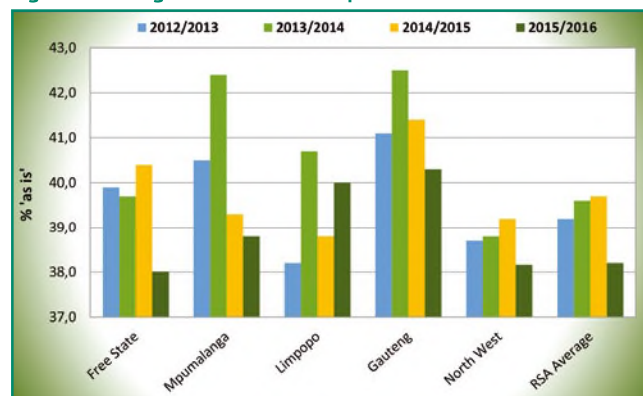
The nutritional component analyses of crude protein, crude fat, crude fibre and ash are reported as a percentage (g/100g) on an as-received or as-is basis. The weighted average crude protein content this season was 17,93%, almost one percent higher than the previous season and the highest average value since the start of this survey in 2012/13. The North West had the highest weighted average crude protein content of 18,24%, and Mpumalanga the lowest with 17,14%. The Free State's crude protein content averaged 17,77% (Figure 3).

Figure 3: Average crude protein content per season.



The weighted average crude fat percentage of 38,2% was the lowest of the last four seasons and 1,5% lower than the previous season. Gauteng had the highest weighted average crude fat content of 40,3%. The lowest average fat content was observed in the Free State (38,0%). North West and Mpumalanga averaged 38,2 and 38,8% respectively (Figure 4).

Figure 4: Average crude fat content per season.



The weighted average percentage crude fibre increased slightly from 20% in the previous season to 20,3% this season. Average values varied between 19,2% in Gauteng to 20,9% in Mpumalanga. The weighted average ash content is slightly higher with 2,59% than last season's 2,55%. The provincial averages ranged from 2,49% in Mpumalanga to 2,69% in Limpopo.

The results of this survey are available on the Southern African Grain Laboratory NPC (SAGL) website www.sagl.co.za. Hard copy reports are distributed to directly affected groups and interested parties. The report is also available for download in PDF format. With gratitude to the Oil and Protein Seeds Development Trust (OPDT) for financial support of these annual surveys and to the members of Agbiz Grain for providing the crop samples. 🌻