

Quality of the 2016/17 season's sunflower crop

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The 2016/17 sunflower crop quality survey is the fifth annual survey performed by the Southern African Grain Laboratory (SAGL), with financial assistance from the Oil & Protein Seed Development Trust. The goal of this survey is to compile a detailed database by accumulating quality data, collected over several seasons, on the national commercial sunflower crop.

This essential database can assist the industry with decision-making processes. The data reveals general tendencies and highlights quality differences in commercial sunflower produced in different local production regions.

Quality analyses, which included grading, were performed on 176 composite samples. These composite samples, representing each delivery of sunflower seed at the various silos throughout the sunflower production regions, were taken according to the prescribed grading regulations during the 2017 harvesting season.

Permissible deviations

Grading was done in accordance with the regulations relating to the grading, packing and marking of sunflower seed intended for sale in the Republic of South Africa (No R45 of 22 January 2016). Of the samples, 85% (150) were graded as Grade FH1, with 26 of the samples downgraded to COSF (class other sunflower seed). The percentage of FH1 samples increased compared to the 78% of the previous season and is similar to the 86% of the 2014/15 season.

The majority (17) of the samples were downgraded as a result of the percentage of either the screenings or the collective deviations, or a combination of both, exceeding the maximum permissible deviations of 4 and 6%, respectively. Other deviations that resulted in the downgrading of samples were the percentage damaged sunflower seed, the percentage foreign matter, the percentage sclerotia, as well as the presence of an undesired odour in the samples.

Refer to *Figures 1* and *2* for the weighted average percentages of screenings and foreign matter per province over five seasons.

The number of samples received for this survey containing sclerotia from the fungus *Sclerotinia sclerotiorum* increased from 18 (10%) in the previous season to 28 (16%) this season. Of these, 14

Figure 1: Average percentage screenings per province over five seasons.

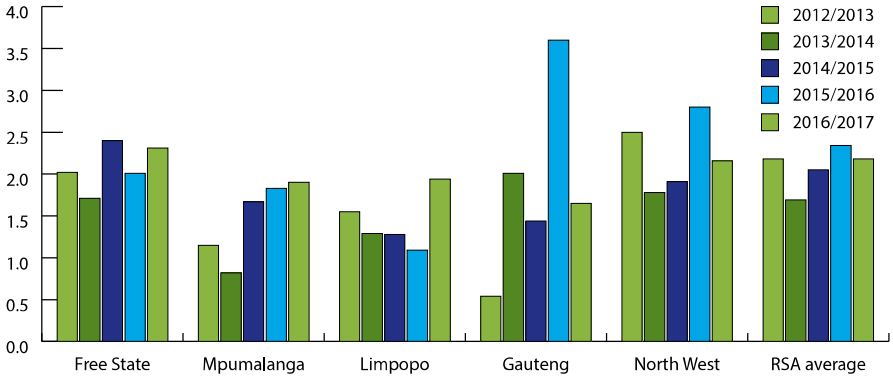
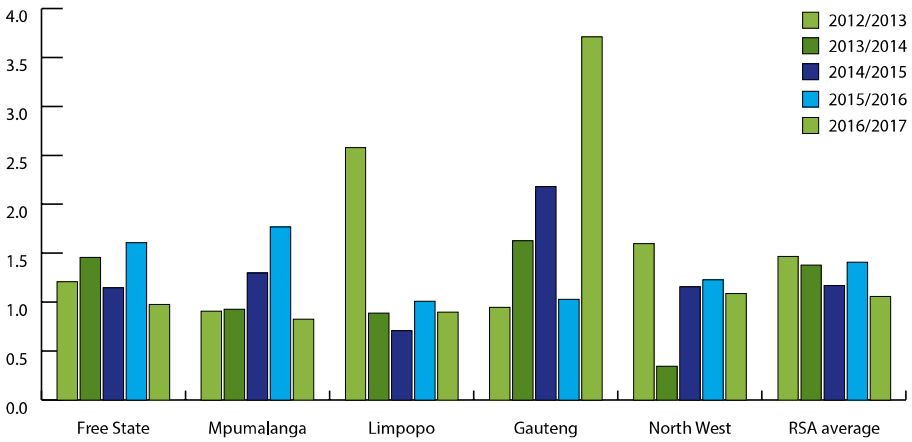


Figure 2: Average percentage foreign matter per province over five seasons.



samples originated in the Free State, 13 in North West and one in Mpumalanga.

Higher national average

The highest percentage (5,52%) was present in a sample from North West; it was the only sample that exceeded the maximum permissible deviation of 4%. Weighted average levels ranged from 0,06% in the Free State to 0,18% in North West. The national average of 0,11% was slightly higher than the 0,04% of the previous two seasons.

Although test weight does not form part of the grading regulations for sunflower seed in South Africa, the g/1ℓ filling weight of each sunflower seed sample was determined by means of the Kern 222 apparatus. The test weight values were then extrapolated by means of formulas obtained from the Canadian Grain Commission's sunflower seed, oil test weight conversion chart. These approximated values provide a measure of the bulk density of South African sunflower seeds.

Over the last three seasons, the national weighted average test weight varied between 42,1kg/hℓ in the season under discussion, 42,5kg/hℓ during the previous season, and 44,2kg/hℓ in the 2014/15 season. Regionally, the weighted average test weights this season ranged from 41,3kg/hℓ in the Free State to 42,7kg/hℓ in the North West province.

The nutritional component analyses, namely crude protein, fat, fibre and ash, are reported as % (g/100g) on an 'as received' or 'as is' basis. See *Table 1* for a summary of the results obtained over five seasons.

Table 1: Weighted average results on an 'as received' or 'as is' basis per season.

Province	Crude protein content, %					Crude fat content, %				
	12/13	13/14	14/15	15/16	16/17	12/13	13/14	14/15	15/16	16/17
Free State	16,22	15,95	16,27	17,77	16,78	39,9	39,7	40,4	38,0	38,5
Mpumalanga	15,24	15,07	16,47	17,14	15,43	40,5	42,4	39,3	38,8	40,2
Limpopo	17,58	16,95	17,44	17,16	17,15	38,2	40,7	38,8	40,0	39,7
Gauteng	16,23	15,44	16,55	17,69	17,37	41,1	42,5	41,4	40,3	38,7
North West	17,21	16,49	17,53	18,24	16,53	38,7	38,8	39,2	38,2	38,4
RSA average	16,77	16,15	16,95	17,93	16,63	39,2	39,6	39,7	38,2	38,6

Province	Crude fibre content, %					Ash content, %				
	12/13	13/14	14/15	15/16	16/17	12/13	13/14	14/15	15/16	16/17
Free State	20,3	20,2	19,9	20,5	20,5	2,58	2,69	2,58	2,64	2,67
Mpumalanga	20,7	18,7	20,7	20,9	21,2	2,43	2,58	2,45	2,49	2,29
Limpopo	19,9	18,6	19,3	20,4	19,7	2,60	2,59	2,56	2,69	2,67
Gauteng	18,9	19,2	19,1	19,2	19,4	2,34	2,53	2,45	2,67	2,37
North West	19,7	20,6	20,1	20,2	21,6	2,51	2,65	2,54	2,55	2,39
RSA average	20,0	20,2	20,0	20,3	21,0	2,54	2,66	2,55	2,59	2,52

Visit *www.sagl.co.za* for detailed results of this as well as previous surveys. The reports are also available for download in PDF format.

With gratitude to the Oil & Protein Seed Development Trust for financial support for these annual surveys, and to the members of Agbiz Grain for providing the crop samples.

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