

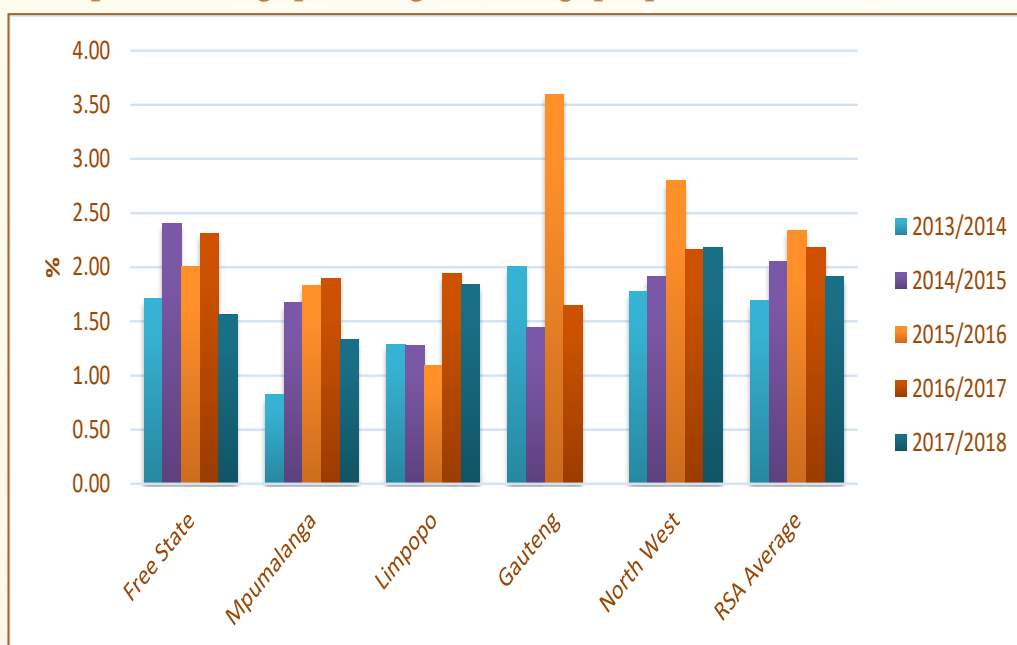
## Sunflower Crop Quality 2017/2018 – Summary of results

Eighty-one percent (143) of the 176 samples analysed for the purpose of this survey were graded as Grade FH1, with 33 of the samples downgraded to COSF (Class Other Sunflower Seed). The percentage of FH1 samples decreased compared to the 85% of the previous season. In the 2015/2016 season, this percentage was 78%.

- Eighteen 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.
- Eight samples were downgraded as a result of the presence of poisonous seeds (*Datura spp* or *Crotalaria spp.*) exceeding the maximum permissible number, namely 1 per 1000 g.
- One sample was downgraded as a result of the presence of poisonous seeds (*Xanthium strumarium*) exceeding the maximum permissible number, namely 7 per 1000 g.
- The remaining six samples were downgraded as a result of a combination of one or more of the following deviations exceeding the maximum permissible deviation: percentage screenings, percentage foreign matter, percentage collective deviations as well as the presence of poisonous seeds or an undesired odour.

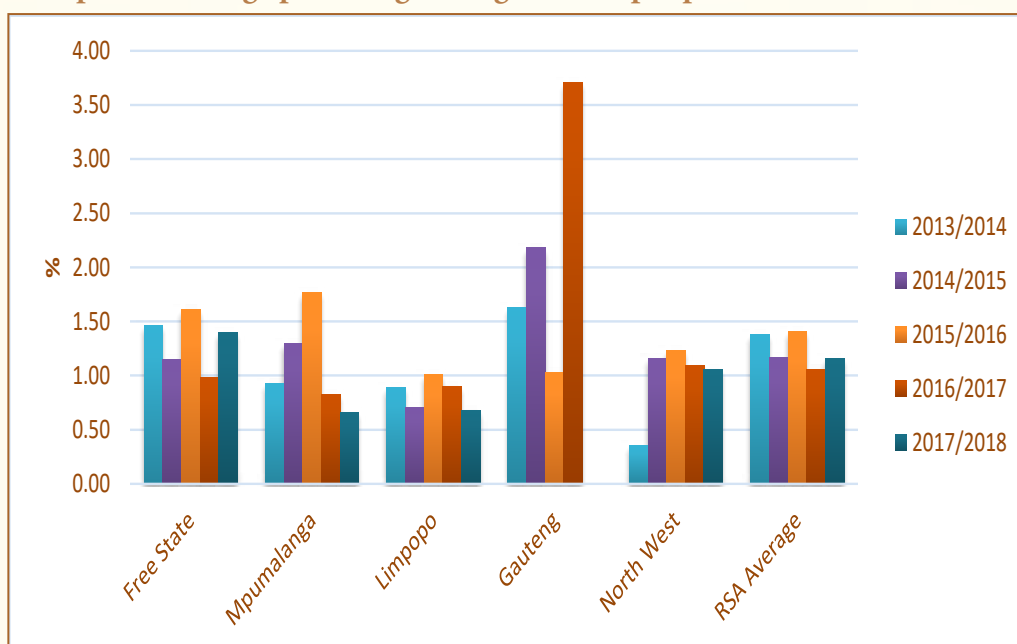
North West province (99 samples) reported the highest weighted average percentage screenings namely 2.18%, followed by Limpopo (N = 5) and Free State (N = 64) provinces with 1.84% and 1.56% respectively. Mpumalanga (8 samples) reported the lowest average percentage screenings of 1.33%. The weighted national average was 1.91% compared to the 2.18% of the previous season. No samples were received from Gauteng province this season.

**Graph 16: Average percentage screenings per province over five seasons**



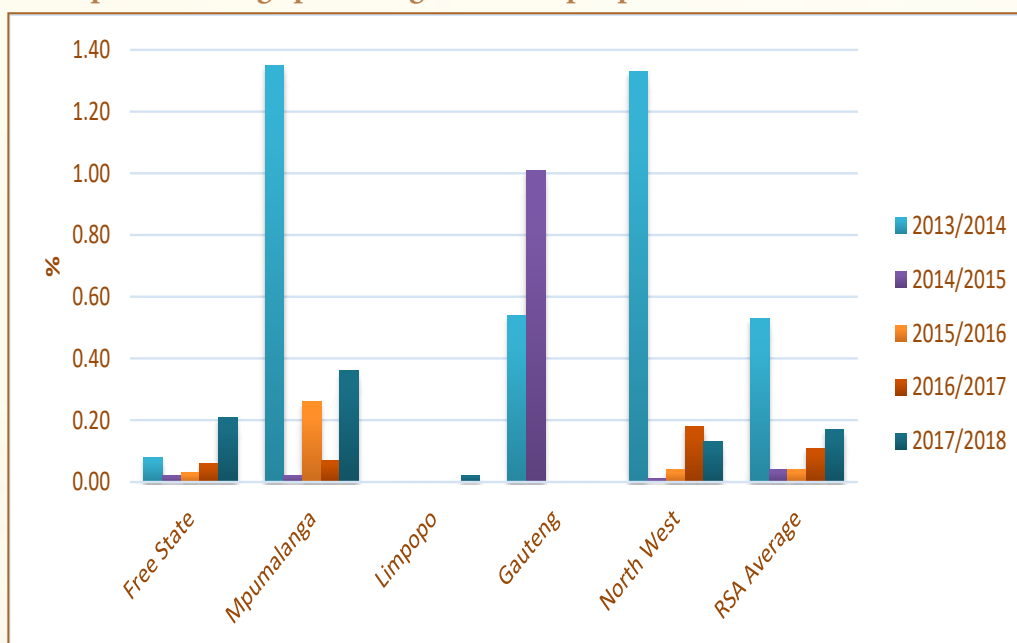
The highest weighted percentage foreign matter (1.40%) was reported on the samples from the Free State. North West averaged 1.06% and the lowest percentages were found in Limpopo and Mpumalanga with 0.68% and 0.66% respectively. The South African average was 1.16% compared to the 1.06% and 1.41% of the previous two seasons.

**Graph 17: Average percentage foreign matter per province over five seasons**



The number of samples received for this survey that contained sclerotia from the fungus *Sclerotinia sclerotiorum*, almost tripled from 28 samples (16%) in the previous season, to 78 samples (44%) this season. Forty-one of these samples originated in the North West province, 28 in the Free State, eight in Mpumalanga and one in Limpopo. None of these samples however exceeded the maximum permissible deviation of 4%. Weighted average levels ranged from 0.02% in Limpopo to 0.36% in Mpumalanga. The national average of 0.17% was slightly higher than the 0.11% of the previous season.

**Graph 18: Average percentage sclerotia per province over five seasons**



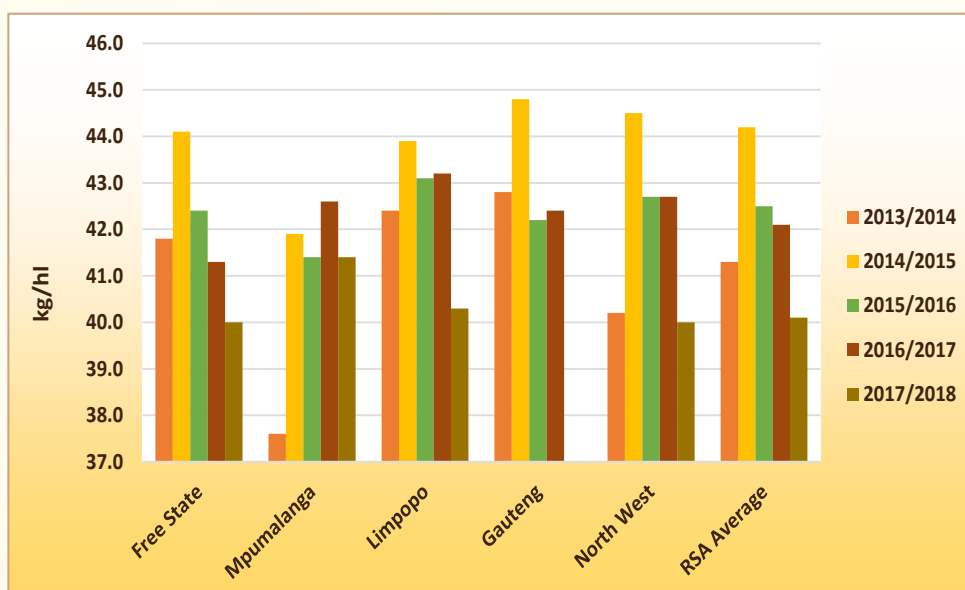
Test weight does not form part of the grading regulations for sunflower seed in South Africa. An approximation of the test weight of South African sunflower seed is provided in Table 3 for information purposes. The standard working procedure of the Kern 222 instrument, as described in ISO 7971-3:2009, was followed. The g/1 L filling mass of the sunflower seed samples was determined and divided by two. The test weight was then extrapolated by means of the following formulas obtained from the Test Weight Conversion Chart for Sunflower Seed, Oil of the Canadian Grain Commission:  $y = 0.1936x + 2.2775$  (138 to 182 g/0.5 L) and  $y = 0.1943x + 2.1665$  (183 to 227 g/0.5 L). Please also see Graph 19 for a comparison of the test weight per province over the last five seasons.

**Table 3: Approximation of test weight per province over three seasons**

Province	Test weight, kg/hl								
	2017/2018 Season			2016/2017 Season			2015/2016 Season		
	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples
Free State (Regions 21 - 28)	40.0	34.9 - 45.7	64	41.3	34.2 - 45.1	76	42.4	36.3 - 48.1	80
Mpumalanga (Regions 29 - 33)	41.4	35.0 - 42.2	8	42.6	35.0 - 42.2	10	41.4	35.0 - 42.2	7
Limpopo (Region 35)	40.3	38.5 - 43.1	5	43.2	40.4 - 45.5	11	43.1	42.7 - 43.8	7
Gauteng (Region 34)	-	-	-	42.4	41.2 - 43.7	3	42.2	41.7 - 42.8	2
North West (Region 12 - 20)	40.0	33.2 - 45.9	*98	42.7	39.1 - 45.1	76	42.7	40.0 - 46.2	80
<b>RSA</b>	<b>40.1</b>	<b>33.2 - 45.9</b>	<b>175</b>	<b>42.1</b>	<b>34.2 - 45.5</b>	<b>176</b>	<b>42.5</b>	<b>35.0 - 48.1</b>	<b>176</b>

\*One sample with an outlier value was not taken into account for calculation purposes.

**Graph 19: Comparison of the test weight per province over five seasons**



The nutritional component analyses, namely crude protein, -fat, -fibre and ash are reported as % (g/100g) on an 'as received' or 'as is' basis.

The weighted average crude protein content this season was 16.61%, similar to the 16.63% of the previous season. North West had the highest weighted average crude protein content of 17.12% and Mpumalanga the lowest with 15.15%. Mpumalanga has consistently reported the lowest average protein content since commencement of this survey in the 2012/2013 season. Limpopo's crude protein content averaged 16.95% and that of the Free State 15.97%. The weighted average crude fat percentage of 37.0% was the lowest of the last six seasons and 1.6% lower than the previous season. Mpumalanga had the highest weighted average crude fat content of 40.0%. Last season Mpumalanga also reported the highest fat content. The lowest average fat content was the 36.1% of the North West province (also the lowest in the previous season).

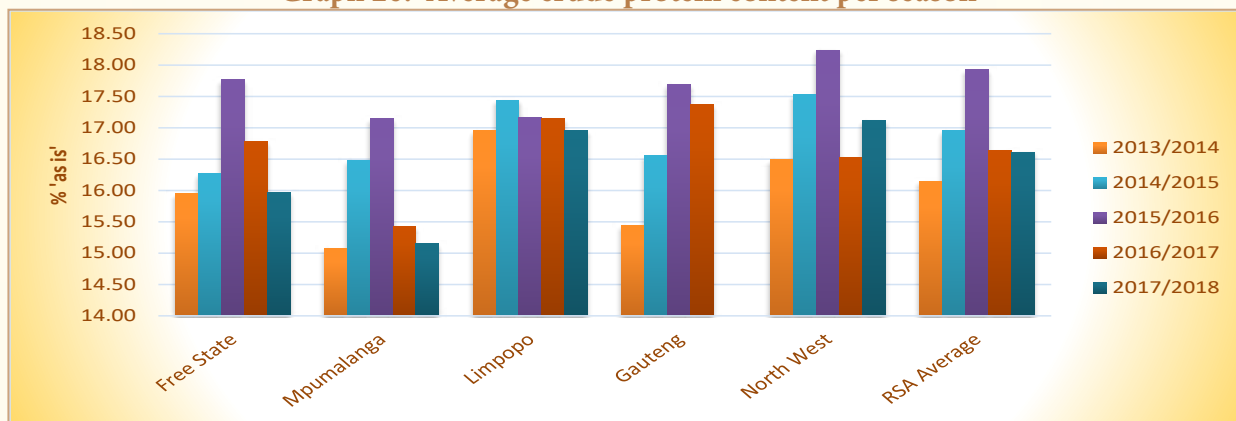
The weighted average percentage crude fibre is the highest of the six seasons at 21.9% (21.0% in 2016/2017). Average values varied between 20.2% in Limpopo to 22.2% in the Free State. The weighted average ash content is also the highest over six seasons (2.69%), last season 2.52%. The provincial averages ranged from 2.56% in Mpumalanga to 2.74% in Limpopo.

Graphs 20 to 23 on page 18 provide comparisons between provinces for the nutritional components discussed above.

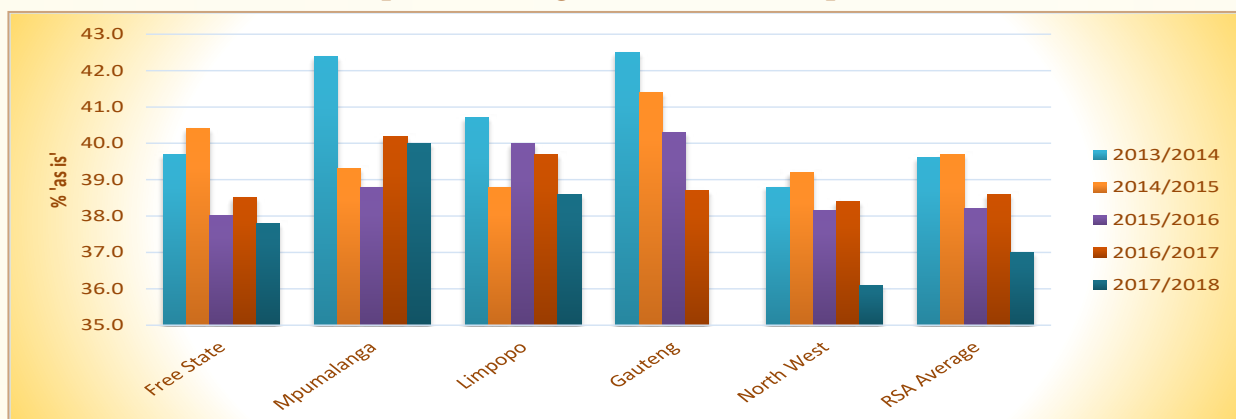
See Table 4 on page 19 for a summary of the RSA Sunflower Crop Quality averages of the 2017/2018 season compared to those of the 2016/2017 season.

Please also see pages 20 to 26 for the average sunflower quality per region.

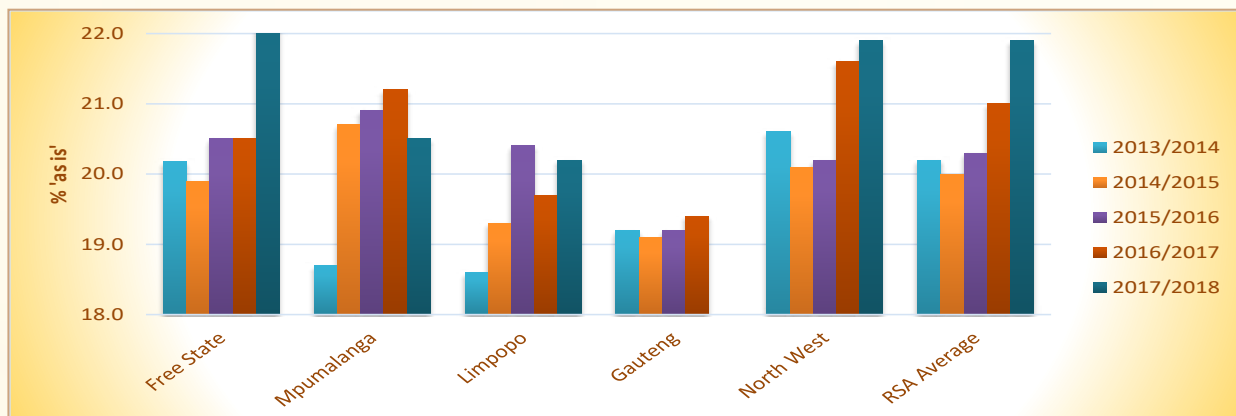
Graph 20: Average crude protein content per season



Graph 21: Average crude fat content per season



Graph 22: Average crude fibre content per season



Graph 23: Average ash content per season

