

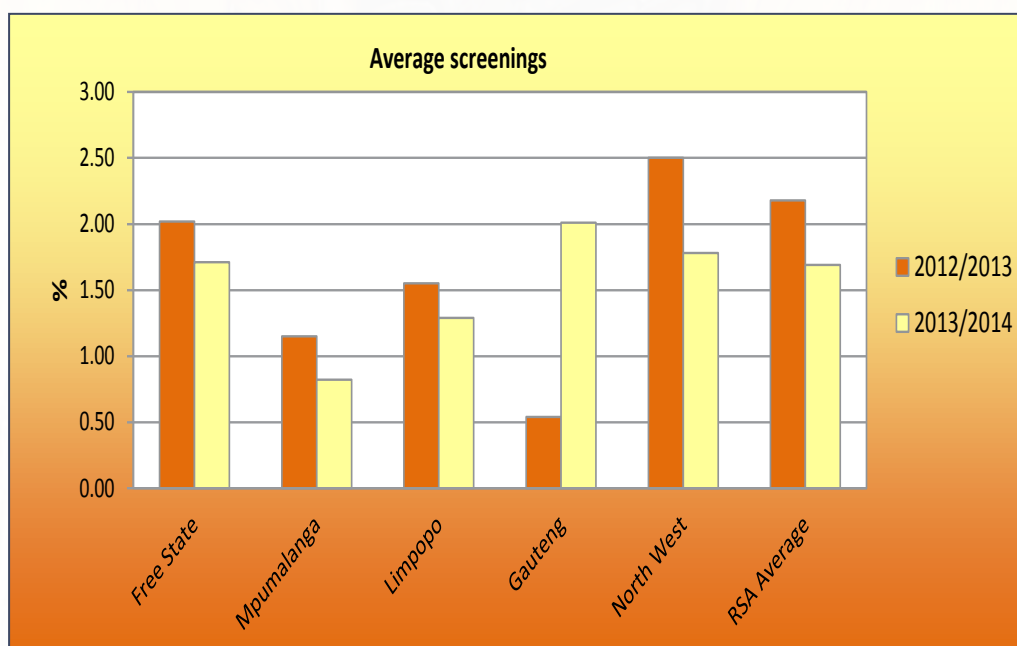
## Sunflower Crop Quality 2013/2014 – Summary of results

Eighty two percent (145) of the 176 samples analysed for the purpose of this survey were graded as Grade FH1 and thirty one of the samples were downgraded to COSF (Class Other Sunflower Seed). The percentage of FH1 samples compares well with the 80% of the 2012/2013 season.

- Sixteen 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.
- Five of the samples were downgraded as a result of the percentage of either the foreign matter or a combination of the foreign matter and collective deviations exceeding the maximum permissible deviations of 4% and 6% respectively.
- Eight of the samples were downgraded as a result of the percentage of either the percentage Sclerotinia or a combination of Sclerotinia and collective deviations exceeding the maximum permissible deviations of 4% and 6% respectively. Seven of these sample originated from the regions in the North West province and one from a region in Mpumalanga.
- Of the remaining two samples, one was downgraded due to the percentage screenings, foreign matter and collective deviations exceeding the maximum permissible deviations and the other as a result of the percentage damaged sunflower seeds, Sclerotinia and collective deviations exceeding the maximum permissible deviations. Both these samples originated from the North West province.

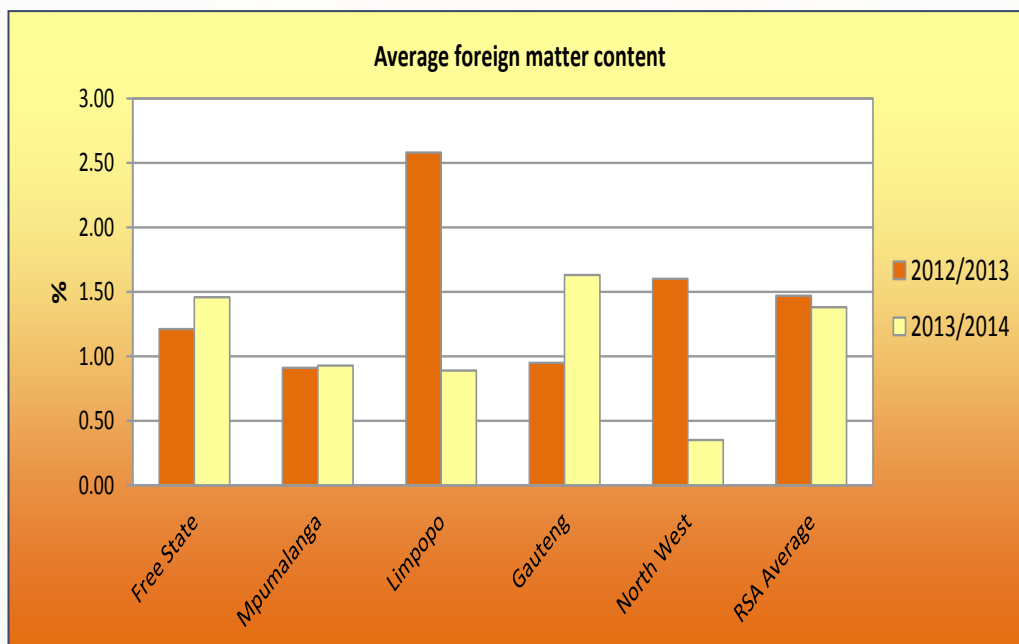
Gauteng province (four samples) reported the highest weighted average percentage screenings namely 2.01%, followed by the North West (N=58) and Free State (N=98) provinces with 1.78% and 1.71% respectively. Mpumalanga (five samples) reported the lowest average percentage screenings of 0.82%.

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



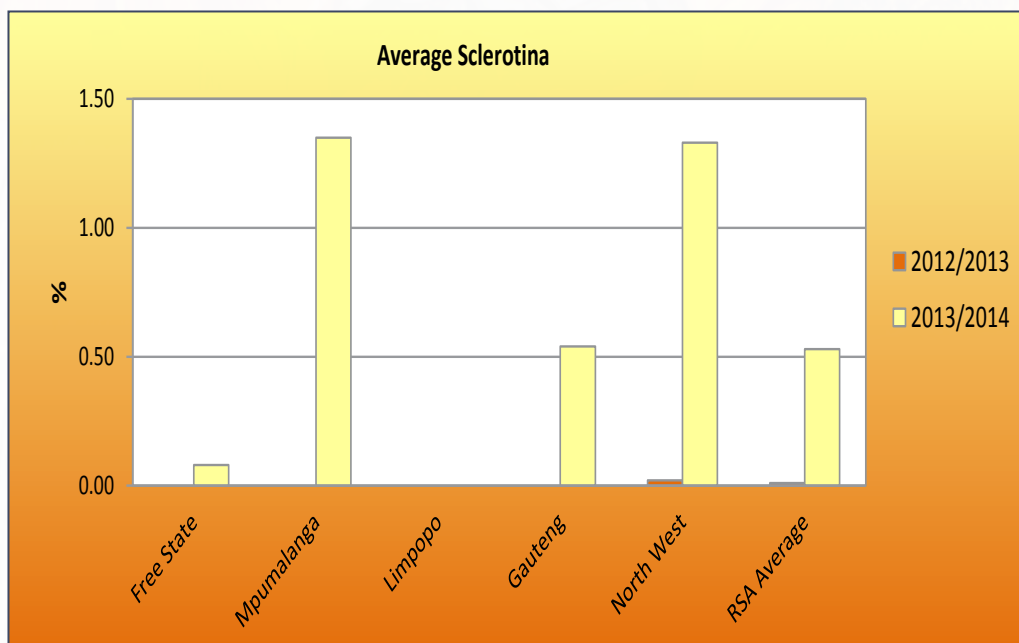
The highest weighted percentage foreign matter (1.63%) was reported for the four Gauteng samples. The Free State and North West provinces averaged 1.46% and 1.35% respectively. The lowest average percentage was found in Limpopo at 0.89%.

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



Sclerotinia was not observed on any of the 11 samples from Limpopo. The samples from the Free State had the lowest weighted average percentage Sclerotinia, namely 0.08%. Mpumalanga had the highest percentage of 1.35%, closely followed by North West province with 1.33%. During the 2012/2013 season, Sclerotinia was observed in the North West province (weighed average of 0.02%) and one region in the Free State (average 0.01%).

**Graph 18: Average percentage Sclerotinia per province over two seasons**



Hectolitre mass does not form part of the grading regulations for sunflower seed in South Africa. An approximation of the hectolitre mass of South African sunflower seeds is provided in Table 2 for information purposes. The g/1 L filling weight of sunflower seed were determined by means of the Kern 222 apparatus. The hectolitre mass was 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).

**Table 2: Approximation of Hectolitre mass per province for the 2013/2014 and 2012/2013 seasons**

Province	Hectolitre mass, kg/hl					
	2013/2014 Season			2012/2013 Season		
	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples
*Free State (Regions 21 - 28)	41.8	36.4 - 48.2	96	43.8	38.3 - 47.7	58
Mpumalanga (Regions 29 - 33)	37.6	35.0 - 42.2	5	42.5	38.1 - 45.7	6
Limpopo (Region 35)	42.4	37.7 - 44.0	11	44.6	42.6 - 47.5	9
Gauteng (Region 34)	42.8	41.7 - 44.6	4	42.7	42.6 - 42.8	2
North West (Region 12 - 20)	40.2	31.1 - 46.6	58	43.0	31.5 - 47.3	77
<b>RSA Average</b>	<b>41.3</b>	<b>31.1 - 48.2</b>	<b>174</b>	<b>43.4</b>	<b>31.5 - 47.7</b>	<b>152</b>

\* Two samples with outlier values as a result of Deviations (Screenings + Sclerotinia + Foreign matter) exceeding 18%, was not taken into account for calculation purposes.

After consultation with industry, it was decided to report the crude protein, -fat, -fibre and ash components as % (g/100g) on an “as received” or “as is” basis. The results of the 2012/2013 crop quality have also been converted to an “as is” basis for comparison purposes. See Table 3 for a summary of the RSA Sunflower Crop Quality averages of the 2013/2014 season compared to those of the 2012/2013 season.

The average crude protein content of the 2013/2014 season was 16.15%, 0.62% lower than the 16.77% of the previous season. Limpopo showed the highest weighted average crude protein content of 16.95% and Mpumalanga the lowest with 15.07%. North West and the Free State had protein contents of 16.49% and 15.95% respectively. The average crude fat percentage increased from 39.2% in 2012/2013, to 39.6% this season. Gauteng had the highest weighted average crude fat content of 42.5%. The lowest average fat contents were observed in North West (38.8%) and the Free State (39.7%).

The weighted average percentage crude fibre increased slightly from 20.0% to 20.2% and varied between 18.6% in Limpopo and 20.6% in North West. The weighted average ash content is comparable, 2.66 % this season and 2.54% last season, varying 0.16% on average between provinces (Gauteng the lowest and the Free State the highest).

Graphs 19 to 22 on page 13 provide comparisons between provinces for the above mentioned components.

Please also see pages 15 to 21 for the average sunflower quality per region.