

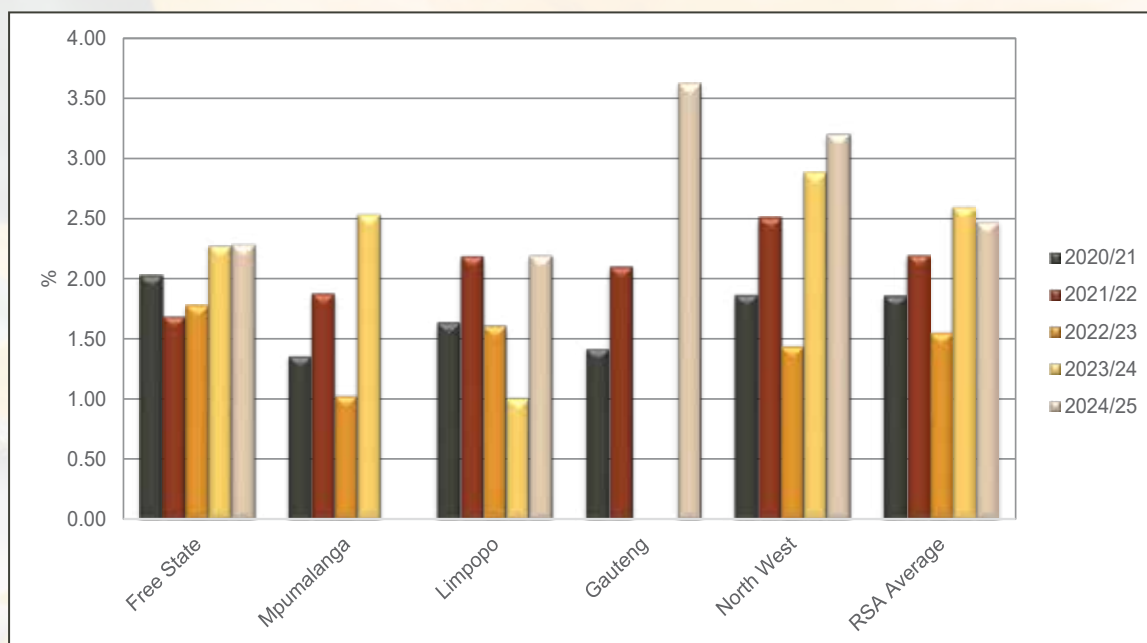
Sunflower Crop Quality 2024/25 – Summary of Results

Sixty-four percent (72) of the 113 samples analysed for the purpose of this survey were graded as Grade FH1, with 41 (36%) of the samples downgraded to COSF (Class Other Sunflower Seed). The percentage of samples graded FH1 decreased compared to the previous season's 76%. The ten-year weighted average of the percentage samples graded as FH1 is 75%.

The grading results of the 41 samples downgraded to Class Other can be summarised as follows:

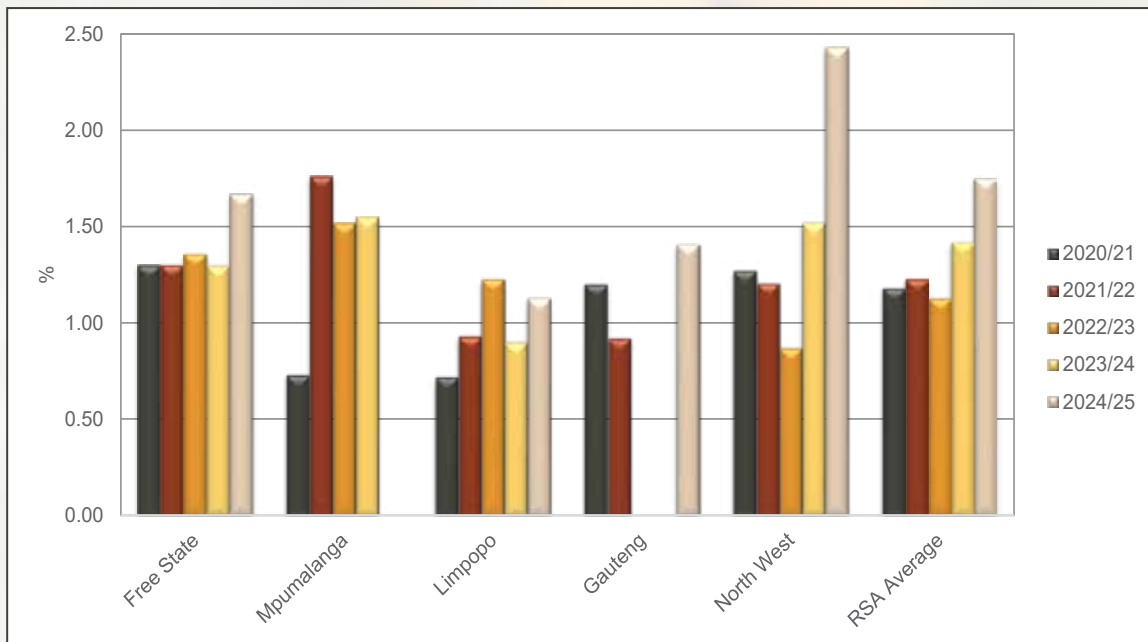
- Ten samples were downgraded as a result of the percentage collective deviations exceeding the maximum permissible deviation of 6%.
- Seven samples were downgraded as a result of poisonous seeds (*Datura* sp. and *Crotolaria* sp.) exceeding the maximum permissible number of 1 per 1000 g.
- Twenty-four of the 41 samples were downgraded to Class Other due to a combination of two or more of the percentages screenings (17 samples), foreign matter (7 samples), collective deviations (24 samples) as well as the number of poisonous seeds (5 samples – *Datura* sp. and *Convolvulus* sp.) exceeding the maximum permissible deviation.

The single sample from Gauteng province reported the highest percentage screenings namely 3.63%, followed by North West (N = 22) and the Free State (N = 76) with weighted averages of 3.24% and 2.29% respectively. Limpopo (N = 14) reported the lowest average percentage screenings of 2.20%. The weighted national average was 2.48% compared to the 2.60% of the previous season, see Graph 16.



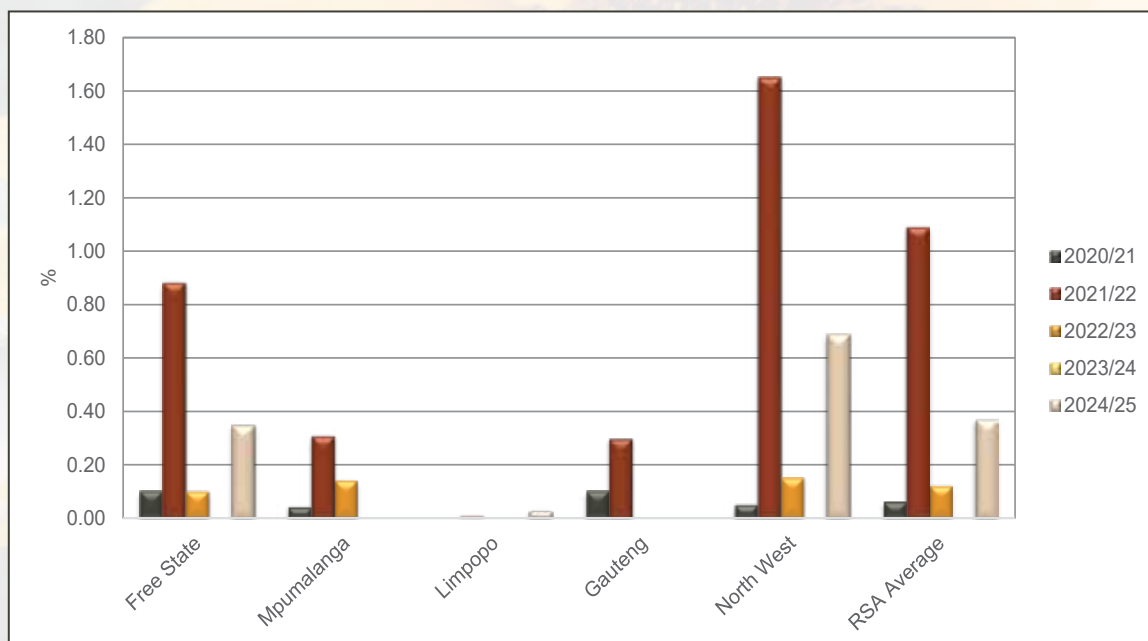
Graph 16: Average percentage screenings per province over five seasons

The highest weighted average percentage foreign matter (2.43%) was reported for the samples from the North West regions. Free State and Gauteng followed with 1.67% and 1.41% respectively. The lowest average percentage was found in Limpopo (1.13%). The national average was 1.75% compared to the 1.42% and 1.13% of the previous two seasons, see Graph 17.



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

Fifty-nine samples (52%) received for this survey contained sclerotia from the fungus *Sclerotinia sclerotiorum*. Last season only two samples received contained sclerotia. During the 2022/23 and 2021/22 seasons 22% and 70% of samples received contained sclerotia. 69% of samples containing sclerotia this season originated in the Free State, 27% in North West and two samples in Limpopo.



Graph 18: Average percentage sclerotia per province over five seasons

None of these samples however exceeded the maximum permissible deviation of 4% for sclerotia. Percentages ranged from a high of 3.5% to a low of 0.02%. North West reported the highest weighted average of 0.69% followed by the Free State with 0.35% and Gauteng with 0.03%. The sample from Limpopo did not contain sclerotia. The national weighted average is 0.37%.

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 7971-3:2019, 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).

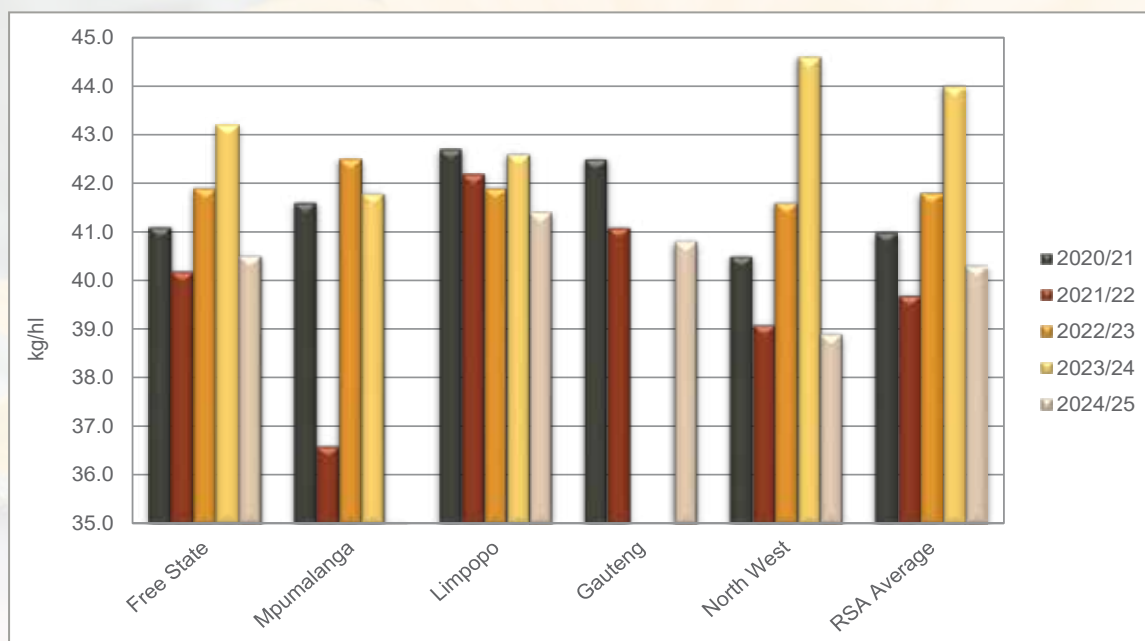
Table 3: Approximation of test weight per province over three seasons

Province	Test weight, kg/hl								
	2024/25			2023/24			2022/23		
	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples
Free State (Regions 21 - 28)	40.5	31.0 - 47.3	75*	43.2	39.9 - 47.6	50	41.9	34.8 - 47.0	64
Mpumalanga (Regions 29 - 33)	-	-	-	41.8	40.4 - 43.1	2	42.5	40.9 - 45.2	11
Limpopo (Region 35)	41.4	37.4 - 44.7	14	42.6	40.2 - 42.1	5	41.9	36.4 - 47.2	17
Gauteng (Region 34)	40.8	-	1	-	-	-	-	-	-
North West (Region 12 - 20)	38.9	31.3 - 46.0	22	44.6	38.8 - 49.2	81**	41.6	32.2 - 45.4	82
RSA	40.3	31.0 - 47.3	112	44.0	38.8 - 49.2	138	41.8	32.2 - 47.2	174

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

**Three samples with outlier values were not taken into account for calculation purposes.

Please also see Graph 19 for a comparison of the test weight per province over the last five seasons.



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

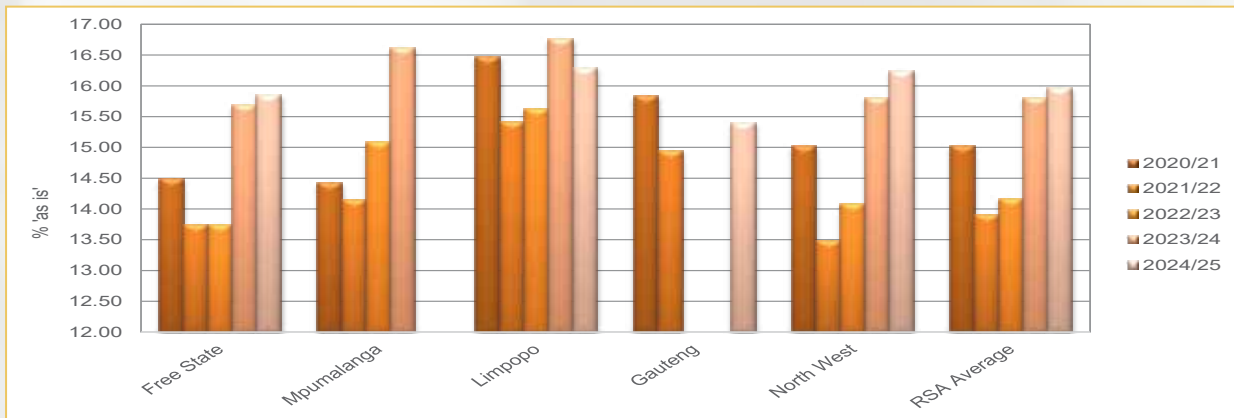
The nutritional component analyses, namely crude protein, -fat, -fibre and ash are reported as % (g/100 g) on an 'as received' or 'as is' basis.

The weighted average crude protein content this season was 15.97%. This is the highest average percentage of the last six seasons. The average results of the previous five seasons (between 2019/20 to 2023/24) ranged from 13.90% to 15.81%. Limpopo had the highest weighted average crude protein content of 16.29%, followed by North West with 16.24%, The Free State with 15.85% and the single sample from Gauteng with 15.39%.

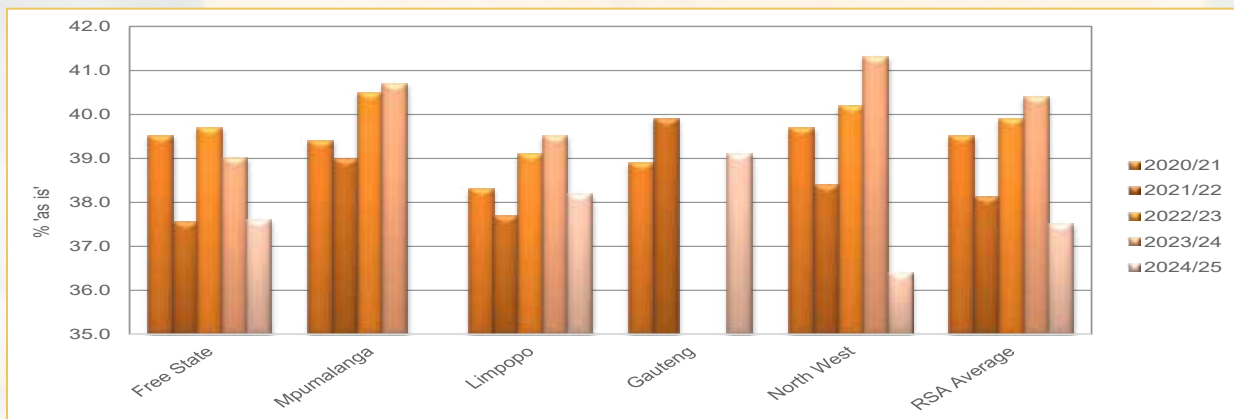
The weighted average crude fat percentage of 37.5%, is the lowest average since the 37.0% reported in the 2017/18 season and the second lowest since the start of this survey in 2012/13. The sample from Gauteng had the highest crude fat content of 39.1%, followed by Limpopo's average of 38.2%. The Free State and North West averaged 37.6% and 36.4% respectively.

The weighted average percentage crude fibre was 22.1%, compared to the 20.0% and the 22.9% of the previous two seasons respectively. Average values varied from a low of 21.2% in Limpopo to a high of 23.1% in North West. The weighted average ash content was 2.73%, the highest since this survey's commencement in 2012/13. The provincial averages ranged from 2.70% in North West to 2.89% in Gauteng.

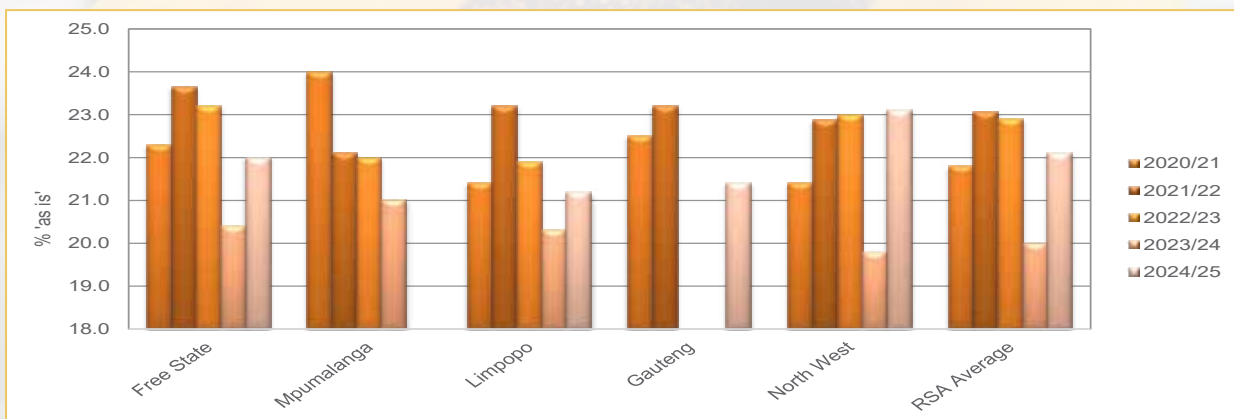
Graphs 20 to 23 provide comparisons between provinces and over seasons for the nutritional components discussed.



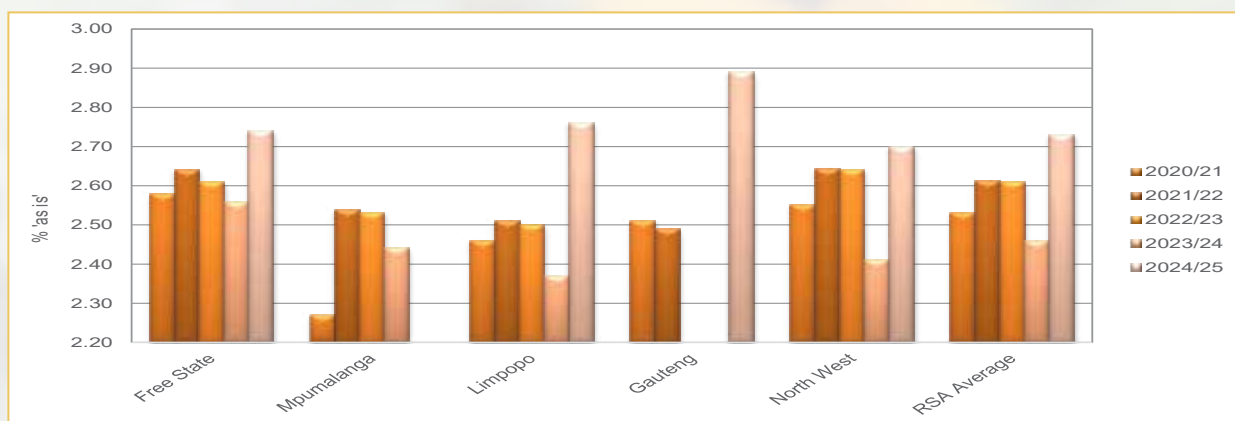
Graph 20: Average crude protein content per province over five seasons



Graph 21: Average crude fat content per province over five seasons



Graph 22: Average crude fibre content per province over five seasons



Graph 23: Average ash content per province over five seasons

A comparison of the moisture, crude protein and crude fat results between the crop survey and ARC Grain Crops sunflower cultivar trials' samples are provided in Table 4.

Table 4: Comparison between the moisture, crude protein and crude fat results of the sunflower crop quality and ARC cultivar trial samples of the 2024/25 season			
Analysis	Moisture, % (5hr, 105°C)	Crude Protein, % (as is)	Crude Fat, % (as is)
Sunflower Crop Quality Survey results			
Average	4.9	15.97	37.5
Minimum	3.6	11.00	28.8
Maximum	9.2	20.11	46.7
Standard deviation	0.85	1.55	3.21
No. of samples	113	113	113
ARC Grains Crops Cultivar trial sample results			
Average	6.1	17.00	42.4
Minimum	3.2	10.70	32.7
Maximum	8.1	23.40	55.5
Standard deviation	0.88	3.20	4.98
No. of samples	153	153	153
% Difference between crop and cultivar samples	-1.2	-1.03	-4.9

See Table 5 on page 22 for a summary of the RSA Sunflower Crop Quality averages of the 2024/25 season compared to those of the 2023/24 season.

Please also see pages 23 to 27 for the average sunflower quality per region.