

Soybean Crop Quality 2014/2015 – Summary of results

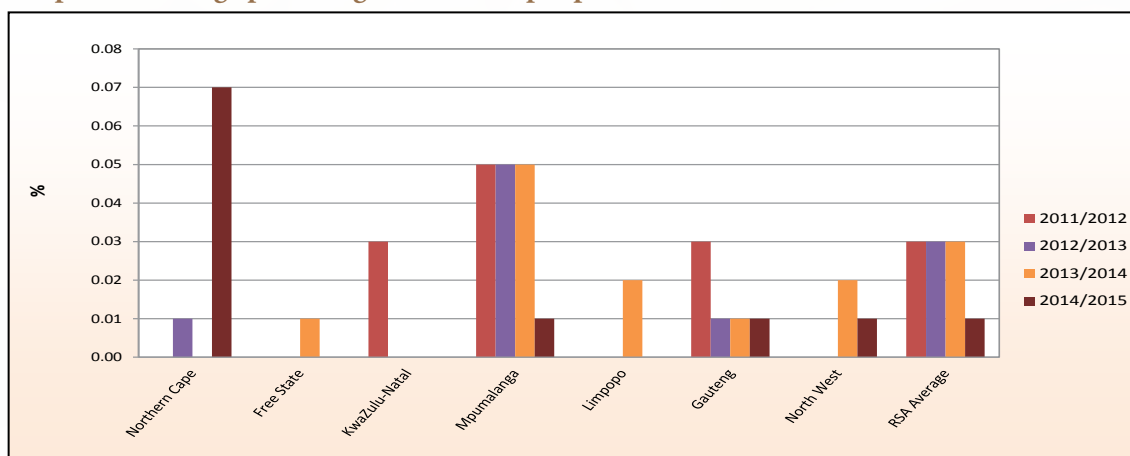
Eighty-seven percent (131) of the 150 samples analysed for the purpose of this survey were graded as Grade SB1 and 19 of the samples were downgraded to COSB (Class Other Soya Beans). During the previous two seasons, 12% (2013/2014) and 5% (2012/2013) of the samples were downgraded to COSB.

- One of the 19 samples was downgraded as a result of the percentage foreign matter, including stones, other grain and sunflower seed present in the sample exceeding the maximum permissible deviation of 5%.
- Five samples were downgraded as a result of the percentage other grain present in the samples exceeding the maximum permissible deviation of 0.5%.
- Two samples were downgraded as a result of the percentage sunflower seed present in the samples exceeding the maximum permissible deviation of 0.1%.
- One sample was downgraded as a result of the percentage soiled soybeans in the sample exceeding the maximum permissible deviation of 10%.
- Six of the samples were downgraded as a result of the presence of poisonous seeds (*Datura sp.*) exceeding the maximum permissible number, namely 1 per 1000 g.
- One sample was downgraded as a result of the presence of poisonous seeds (*Ipomoea purpurea Roth.*) exceeding the maximum permissible number, namely 7 per 1000 g.
- One sample was downgraded for exceeding both maximum permissible number of poisonous seeds (*Datura sp.* and *Ipomoea purpurea Roth.*).
- The remaining two samples were downgraded as a result of a combination of one or more of the following deviations exceeding the maximum permissible deviation: percentage other grain, defective soybeans and parts of soybeans above the 1.8 mm slotted sieve which pass through the 4.75 mm round hole sieve as well as poisonous seeds.

According to the South African soybean grading regulations, the determination of the percentage wet pods in a consignment shall be done on a working sample of at least 10 kg of soybeans from a representative sample of the consignment. Due to practical considerations the samples received at the SAGL from the grain storage companies is typically ± 5 kg. Pods were found in 22 of the 150 samples graded, all of these pods were dry on receipt at the SAGL. The percentage of these pods in the samples ranged from 0.14% to 0.63% based on a working sample size of at least 200 g. Eleven samples contained pods, not identifiable as wet pods according to the definition, in percentages exceeding the wet pod maximum permissible deviation of 0.2%.

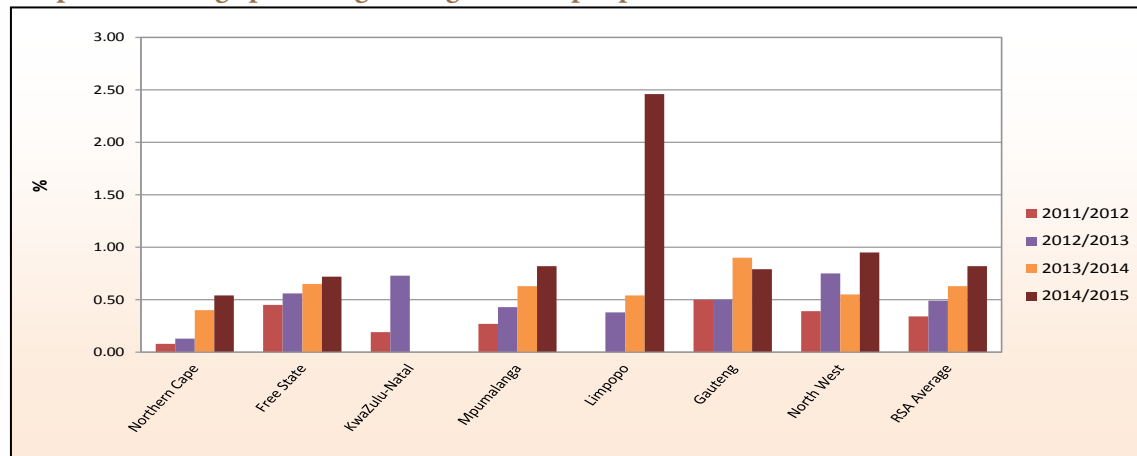
Based on the samples received for this crop survey, Sclerotinia did not pose any problems. The highest percentage of Sclerotinia observed (0.20%) was on a sample from Mpumalanga, which is well below the maximum permissible level of 4%. During this season, the samples from the Northern Cape had the highest weighted average percentage Sclerotinia (0.07%). The national weighted average percentage this season was 0.01% compared to the 0.03% of the previous three seasons. See Graph 16.

Graph 16: Average percentage Sclerotinia per province over four seasons



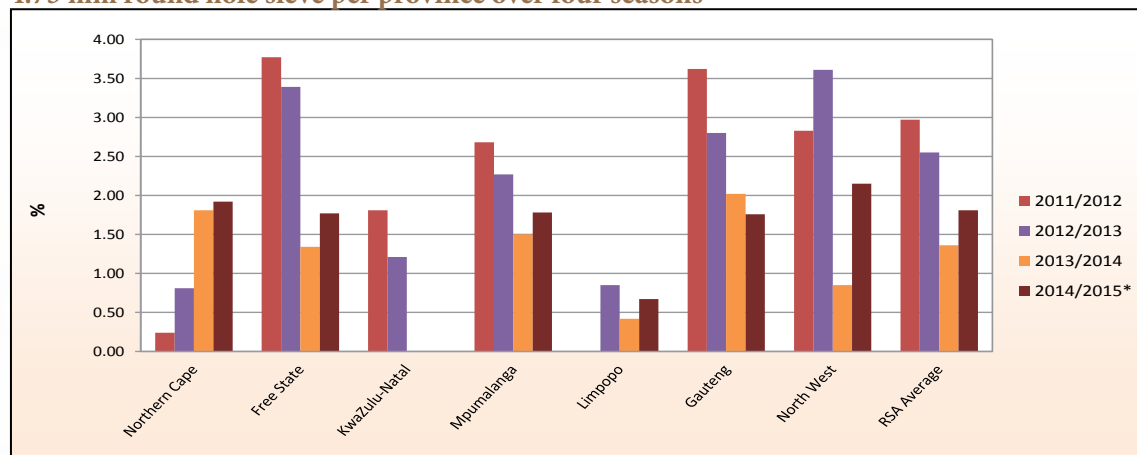
Limpopo province's two samples had the highest average percentage foreign matter. The weighted average percentage foreign matter in the rest of the samples ranged from 0.54 in the Northern Cape to 0.95 in North West province. Please refer to Graph 17.

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



North West province (18 samples) reported the highest weighted average percentage soybeans and parts of soybeans above the 1.8 mm slotted sieve which pass through the 4.75 mm round hole sieve, namely 2.15% and Limpopo (2 samples) the lowest at 0.67%. Mpumalanga province with the highest number of samples (77) reported an average of 1.78%. The Free State province averaged 1.77% (42 samples). The national weighted average percentage increased from 1.36% last season to 1.81% this season. Please see Graph 18. No samples were received from KwaZulu-Natal for the 2014/2015 season.

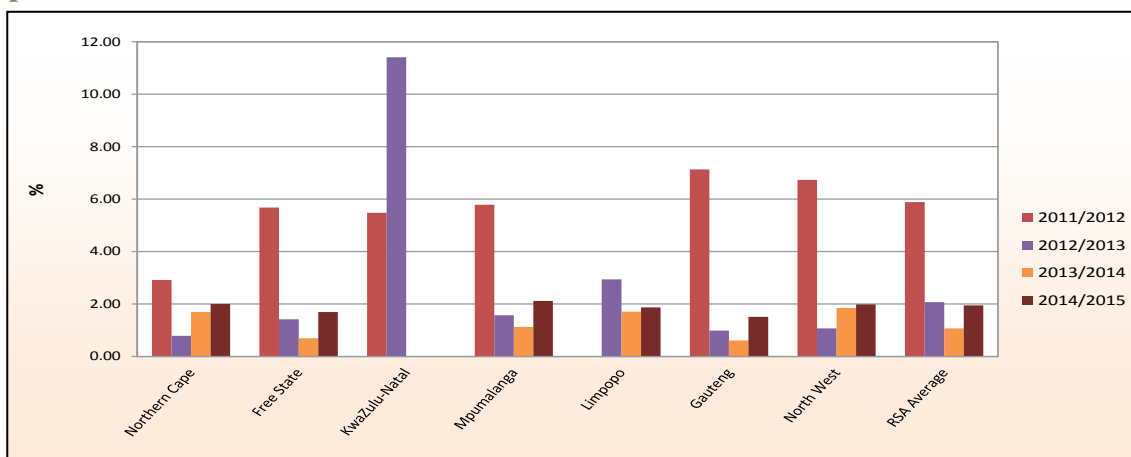
Graph 18: Average percentage soybeans and parts of soybeans which pass through the 4.75 mm round hole sieve per province over four seasons



*Please note that the 2014/2015 results represent soybeans and parts of soybeans above the 1.8 mm slotted sieve which pass through the 4.75 mm round hole sieve.

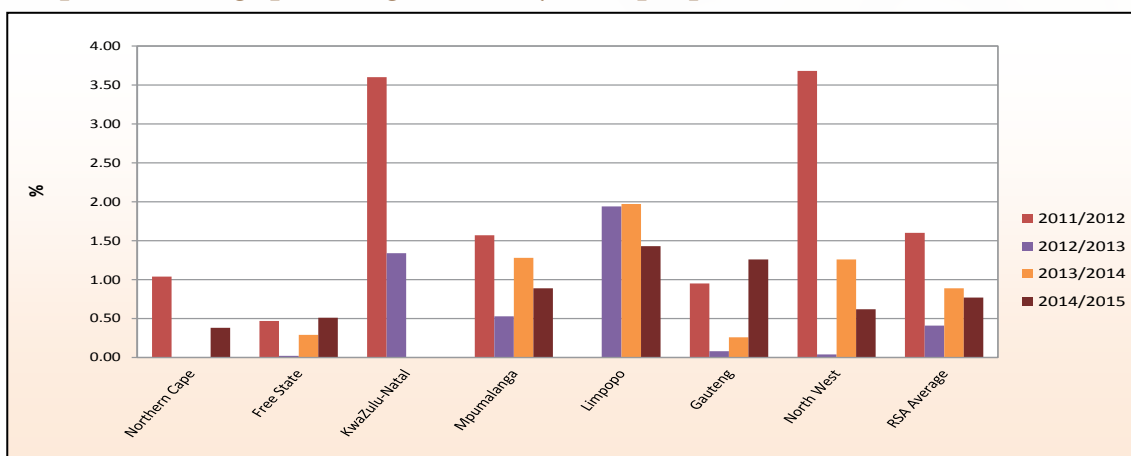
Eight samples were submitted from Gauteng province and the lowest weighted average percentage defective soybeans on the 4.75 mm sieve were reported on these, namely 1.51%. Mpumalanga province reported the highest percentage of 2.12, followed by the Northern Cape and North West provinces with 2.00 and 1.99 respectively. The national weighted average increased from 1.07% in the previous season to 1.95% this season. Please see Graph 19.

Graph 19: Average percentage defective soybeans on the 4.75 mm round hole sieve per province over four seasons



The RSA weighted average percentage soiled soybeans of 0.77% is lower than the 0.89% of the previous season but higher than the weighted average (0.41%) of the 2012/2013 season. Average weighted percentages per province ranged from 0.38 in the Northern Cape to 1.43 in Limpopo. Please see Graph 20. This season one sample from Mpumalanga had a soiled soybean percentage exceeding the maximum permissible deviation of 10%, none above the limit were observed during the 2013/2014 season.

Graph 20: Average percentage soiled soybeans per province over four seasons

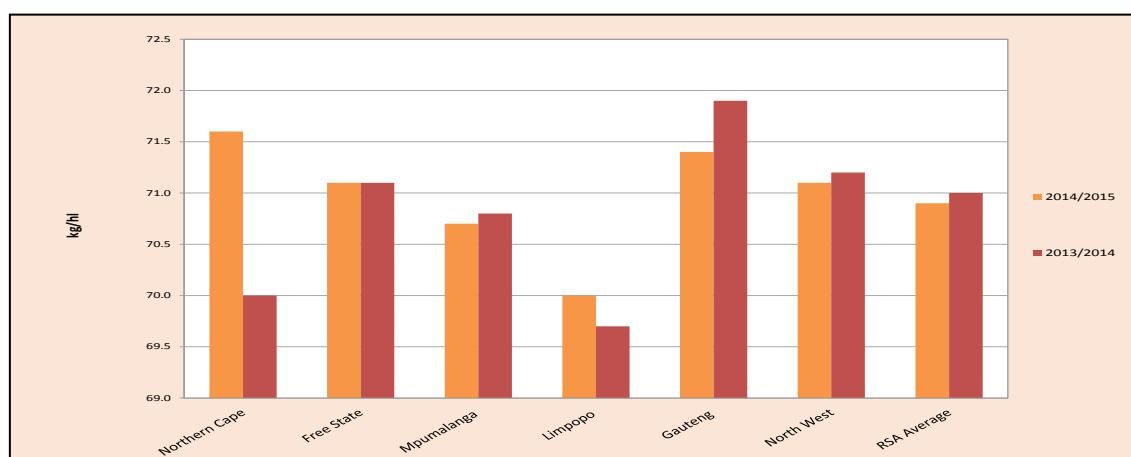


Test weight does not form part of the grading regulations for soybeans in South Africa. An approximation of the test weight of South African soybeans is provided in Table 2 for information purposes. The g/1 L filling weight of the 150 soybeans samples was determined by means of the Kern 222 apparatus. The test weight was extrapolated by means of the following formulas obtained from the Test Weight Conversion Chart for Soybean of the Canadian Grain Commission: $y = 0.1898x + 2.2988$ (291 to 350 g/0.5 L) and $y = 0.1895x + 2.3964$ (351 to 410 g/0.5 L). Please see also Graph 21 for a comparison of the test weight per province over the last two seasons.

Province	Test weight, kg/hl					
	2014/2015 Season			2013/2014 Season		
	Weighted average	Range	No. of samples	Weighted average	Range	No. of samples
Northern Cape (Regions 10 - 11)	71.6	71.2 - 71.9	3	70.0	69.8 - 70.2	2
Free State (Regions 21 - 28)	71.1	67.0 - 72.7	42	71.1	66.6 - 73.6	51
Mpumalanga (Regions 29 - 33)	70.7	63.3 - 78.2	77	70.8	68.3 - 74.7	66*
Limpopo (Region 35)	70.0	69.3 - 70.8	2	69.7	68.5 - 70.5	3
Gauteng (Region 34)	71.4	69.5 - 72.4	8	71.9	71.5 - 73.1	7
North West (Region 12 - 20)	71.1	68.8 - 72.2	18	71.2	69.4 - 73.1	20
RSA Average	70.9	63.3 - 78.2	150	71.0	66.6 - 74.7	149

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

Graph 21: Comparison of the test weight per province over two seasons



The nutritional component analyses, namely crude protein, - fat, - fibre and ash are reported on a dry/moisture-free basis (db) for the current as well as the three previous surveys. For comparison purposes the national 'as is' basis results are provided in Table 3. These 'as is' values were calculated using the weighted national average values.

Table 3: Comparison of weighted average nutritional component values on a dry and 'as is' basis over four seasons

Season	2014/2015		2013/2014		2012/2013		2011/2012	
Moisture, % (17hr, 103°C)	7.0		7.1		7.2		6.8	
Moisture basis	Dry basis	As is	Dry basis	As is	Dry basis	As is	Dry basis	As is
Crude protein, %	39.89	37.10	39.84	37.01	40.63	37.70	39.42	36.74
Crude fat, %	19.3	17.9	19.7	18.3	18.8	17.4	18.7	17.4
Ash, %	4.64	4.32	4.66	4.33	4.65	4.32	4.62	4.31
Crude fibre, %	6.4	6.0	6.1	5.7	-	-	-	-
No. of samples	150		150		150		100	

The weighted average crude protein content this season was 39.89%, comparing very well with the 39.84% of the previous season. Mpumalanga showed the highest weighted average crude protein content of 40.44% and Limpopo the lowest of 36.16%. The weighted average crude fat percentage decreased from 19.7% in 2013/2014, to 19.3% this season. The samples from Limpopo had the highest weighted average crude fat content of 23.6%. The lowest average fat content was observed in Gauteng with 18.9%.

The national weighted average ash content did not vary significantly over the four seasons that this survey has been conducted, 4.64% this season compared to the 4.66% 4.65% and 4.62% for the previous three seasons. Samples from the Northern Cape and Limpopo tend to show higher ash contents over seasons. The weighted average percentage crude fibre varied from 4.9% in Limpopo to 7.5% in the Northern Cape. The RSA weighted average was slightly higher this season (6.4%), compared to 6.1% the previous season.

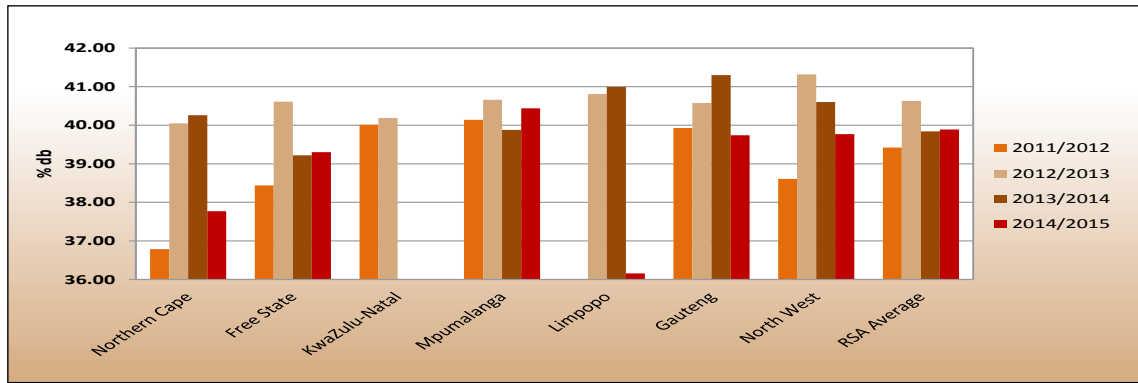
Graphs 22 to 25 on page 14 provide comparisons between provinces for the above mentioned components.

A summary of the RSA Soybean Crop Quality averages of the 2014/2015 season compared to those of the 2013/2014 season, is provided in Table 4 on page 15.

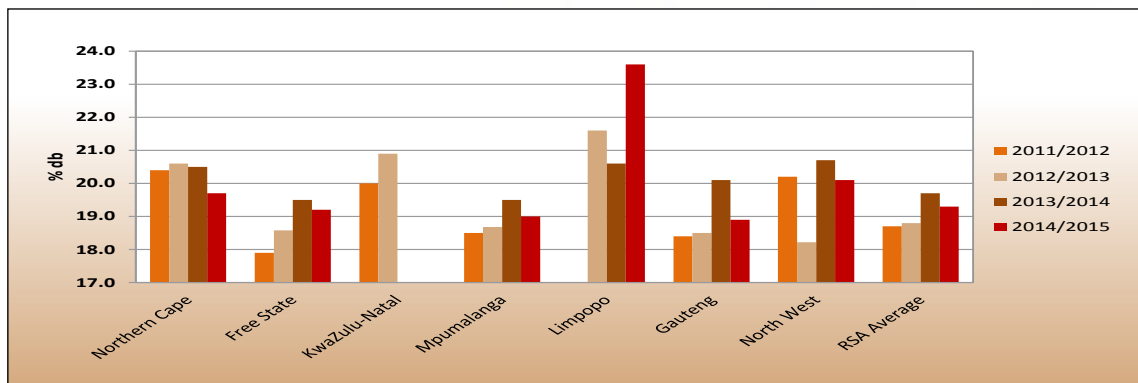
All fifteen samples tested for genetic modification (GM), tested positive for the presence of the CP4 EPSPS trait (Roundup Ready®). Please refer to the results in Table 5 on page 16 of this report.

Please see pages 17 to 24 for the average soybean quality per region.

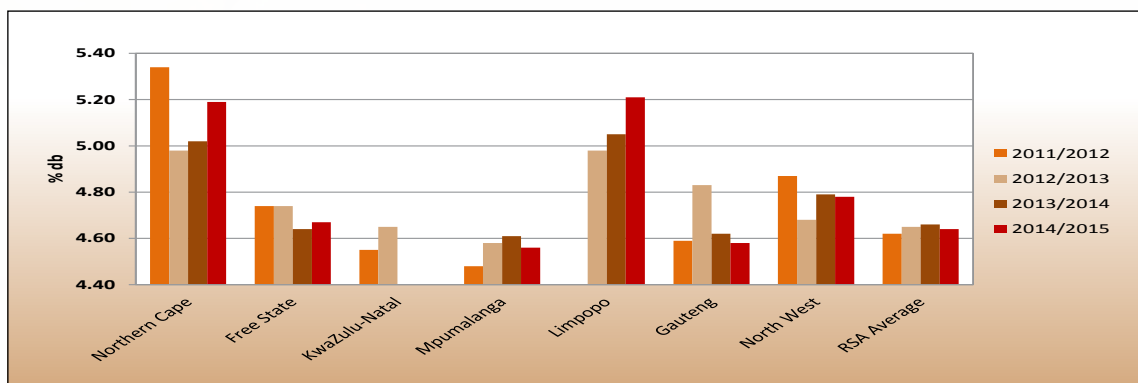
Graph 22: Average crude protein content per province over four seasons



Graph 23: Average crude fat content per province over four seasons



Graph 24: Average ash content per province over four seasons



Graph 25: Average crude fibre content per province over two seasons

