

## Soybean Crop Quality 2012/2013 – Summary of results

Ninety-five percent (142) of the 150 samples analysed for the purpose of this survey were graded as Grade SB1 and eight of the samples were downgraded to COSB (Class Other Soya Beans). Seven of the samples were downgraded as a result of the percentage other grain present in the samples exceeding the maximum permissible deviation of 0.5%. The eighth sample was downgraded as a result of both the percentage other grain and percentage defective soybeans on the 4.75 mm round hole screen (max. 10%) exceeding the maximum permissible deviations.

The North West province (four samples) reported the highest weighted average percentage soybeans and parts of soybeans which pass through the 4.75 mm round hole screen namely 3.61% and the Northern Cape (one sample) the lowest at 0.81%. Mpumalanga province with the highest number of samples (85) reported an average of 2.27%. The Free State province averaged 3.39% (forty samples).

The percentage soiled soybeans ranged from 0% in the Northern Cape (one sample) to 1.94% in Limpopo province also on one sample. Mpumalanga averaged 0.53% and the Free State 0.02%.

No wet pods were observed by SAGL during the grading of the samples, while wet pods were reported by graders at the various depots. Based on discussion with individuals from industry, two possible explanations exist: During grading of the samples at the depots (prior to the samples being collected and forwarded to SAGL), the wet pods were removed from the samples for the determination of the percentage foreign matter and not replaced. The other explanation being that during the time elapsed (sometimes weeks) from the samples being taken to being forwarded to SAGL by the depots, the pods dried out and were no longer visible or identifiable as wet pods according to the definition. This matter will be discussed with the Grain Silo Industry prior to commencement of the 2013/2014 harvesting season.

The protein, fat and ash components are reported as % (g/100g) on a dry/moisture free basis (db). The average protein content of these samples was 40.63%, 1.2% higher than the 39.42% of the 2011/2012 season. The average fat content was 18.8% which compares very well with the 18.7% of the previous season. The ash content over the two seasons was almost identical, this season was slightly higher (0.03%) at 4.65%.

**Table 1: Comparison of RSA soybean quality with average international soybean quality**

	USA <sup>1</sup>	Brazil <sup>1</sup>	Argentina <sup>1</sup>	Range	RSA			
					2011/2012		2012/2013	
					Average	Range	Average	Range
<b>Protein, % (db)</b>	40.0**	40.8**	38.3**	31.4 - 45.5	39.42	31.45 - 45.23	40.63	34.34 - 43.25
<b>Fat, % (db)</b>	20.9**	22.4**	22.0**	18.0 - 24.0	18.7	15.1 - 22.8	18.8	13.7 - 22.7
<b>Ash, % (db)</b>	-	-	-	-	4.62	4.05 - 5.43	4.65	4.14 - 5.61
<b>Number of samples</b>	55	35	19		100		150	

<sup>1</sup>Thakur Maitri, Hurburgh Charles R, 2007. Quality of US Soybean Meal Compared to the Quality of Soybean Meal from Other Origins. *J Am Chem Soc* (2007) 84:835-843.

\*\*Conversion of results from 13% moisture basis to dry basis was done by SAGL.

The weighted average protein content per province ranged from 40.05% (one sample from the Northern Cape) to 41.32% (5 samples from North West). Mpumalanga and the Free State averaged 40.66% and 40.61% respectively. The highest average fat content was measured on one sample from the Limpopo province, namely 21.6% and the lowest in North West (18.2%). Mpumalanga's average fat content was 21.6% and that of the Free State province 18.6%. Weighted average ash values ranged from 4.98% in Limpopo and the Northern Cape to 4.58% in Mpumalanga. The Free State averaged 4.74%.

The average level of each of the amino acids tested on the 10 samples compared very well with that of the previous season, with the average difference being 0.1g/100 (as is). The largest difference between the averages of the two seasons was observed on Glutamic acid with a 0.4g/100g difference. Please see Table 3 on page 12.

All fifteen samples tested, tested positive for the presence of the CP4 EPSPS trait (Roundup Ready®) (Table 4, page 14).

See Table 2 for a summary of the RSA Soybean Crop Quality averages of the 2012/2013 season as well as pages 15 to 21 for the average soybean quality per region.