

## WHEAT SEED SOLD BY COMMERCIAL GRAIN SILO OWNERS TO WHEAT PRODUCERS FOR THE 2012 PLANTING SEASON

<u>Cultivar</u>	<u>%</u>	<u>Cultivar</u>	<u>%</u>
SST 056	15.67	PAN 3118	0.28
SST 88	14.21	SST 866	0.27
SST 027	13.40	PAN 3478	0.26
SST 015	8.54	PAN 3368	0.24
Duzi	7.91	SST 347	0.21
SST 875	7.31	CRN 826	0.172
SST 835	7.22	SST 867	0.169
SST 843	4.30	Gariep	0.141
SST 822	3.74	Steenbras	0.140
SST 806	2.95	PAN 3408	0.106
SST 884	2.73	PAN 3379	0.098
SST 047	2.21	PAN 3355	0.094
SST 877	1.56	Buffels	0.086
SST 356	1.25	SST 387	0.077
Krokodil	0.95	SST 374	0.061
Elands	0.93	SST 825	0.034
Kariega	0.84	Baviaans	0.030
PAN 3471	0.44	Olifants	0.014
Matlabas	0.42	PAN 3120	0.008
SST 826	0.32	PAN 3144	0.004
PAN 3161	0.31	SST 895	0.001
SST 876	0.30	SST 334	<u>0.0002</u>
			100

Note: These figures are not absolute, but the best and only figures available.

### Crop quality of the 2012/2013 season

It is a well-known fact that wheat yield and protein content is negatively correlated. This has been clearly demonstrated over the past three seasons where the yield increased from 2.56 ton per hectare in the 2010/2011 season, to 3.32 t/ha in 2011/2012 and 3.66 t/ha in the 2012/2013 season, while the protein content decreased from 12.1% to 11.8 % and 11.4% in the current season.

The highest percentage of samples analysed (33.5%) had protein contents ranging from 11.0 - 11.9%. The second highest percentage of 24.9% was for protein contents 10.0 - 10.9% and thirdly 23.4% for 12.0 - 12.9% protein content. The Winter rainfall areas had the lowest average whole wheat protein content of 10.8%. The Summer rainfall area of the Free State's average protein content was almost one percent higher at 11.7%. The rest of the production areas consisting of regions in Mpumalanga, Gauteng, Limpopo, Griqualand-West, Vaalharts, North-West and KwaZulu-Natal averaged the highest protein content of 12.1%. Although the average whole wheat protein content decreased by 0.4% to 11.4% compared to the previous season, the flour protein content is slightly (0.1%) higher than the previous season. Please see protein detail results in Graphs 5, 6 and 7 on pages 8 and 10.

The average hectolitre mass ranged from 79.9 kg/hl in the Summer rainfall area to 82.1 kg/hl in the Irrigation areas. Only eighteen samples in total reported hectolitre masses below 77 kg/hl (in other words not Grade 1). Eleven of these samples were from the Free State, four from Limpopo, two from the Rûens region and one from the Swartland.

The weighted average thousand kernel mass of 40.2 g was 2.2 g higher than the previous season. The weighted average screenings (1.8 mm sieve) of 1.46% was slightly lower than the 1.56% in the 2011/2012 season.

The weighted average falling number was 360 seconds. Sixteen samples gave falling number values of less than 250 seconds and of these, five had falling number values lower than 220 seconds and another five falling numbers below 200 seconds.

Rapic Visco Analyser (RVA) analyses were performed for the first time this season on the wheat crop quality survey samples. The RVA is a rotational viscometer that is able to continuously record the viscosity of a sample (under controlled temperature conditions) as the starch granules hydrate, swell and disintegrate (gelatinization and pasting), followed by possible realignment of the starch molecules during cooling (retrogradation). The analysis was performed on the Quadromat milled flour.

The average peak viscosity of the 105 samples analysed was 2393 cP, the minimum viscosity 1834 cP and the final viscosity 2775 cP (centipoise). The conditions as set out in the Standard 1 (STD1) profile of the instrument were used. Results are reported on a 14% moisture basis. Please see results on pages 20 to 22.

The weighted mixogram peak time on flour from the Quadromat mill averaged 2.9 minutes, similar to the ten year average and previous season (3.0 minutes). The weighted mixogram peak time of the flour from the Bühler mill was 2.8 minutes.

The weighted average Bühler extraction was 73.2%. The average Kent Jones colour this season was -2.9 KJ and the previous season -2.8 KJ. Dry colour determinations by means of a Konica Minolta CM-5 spectrophotometer were performed for the first time on this seasons' crop samples. The CIE L\*a\*b\* values were reported as follows, with the average and range (in brackets) for each of the colour coordinates: L\* 93.85 (93.14 – 94.39), a\* 0.41 (026 – 0.54) and b\* 9.92 (8.65 – 11.35).

The wet gluten (14% mb) averaged 29.0% and the dry gluten also on a 14% moisture basis, 10.0%. The average gluten index value was 83, ranging from 44 to 97. The difference between the wet and dry gluten contents is an indication of the water-holding capacity of the gluten proteins. High water-holding capacity (a ratio of almost 3:1 in this instance) is considered good quality for bread baking purposes. The gluten index provides an indication of the gluten strength (higher being better) and is not influenced by the protein content.

The farinogram had a weighted average water absorption of 60.8% (61.3% the previous season) and a weighted average development time of 5.1 minutes (4.1 minutes previous season). The weighted average alveogram strength was 36.7 cm<sup>2</sup> and the weighted average P/L value 0.96 (35.0 cm<sup>2</sup> and 0.89 the previous season). The weighted average extensogram strength was 84 cm<sup>2</sup> (90 cm<sup>2</sup> previous season).

The loaves baked using the 100 g straight-dough optimized bread making method, which refers to the relationship between the protein content and the bread volume, were evaluated and received an "Excellent" score.

Ten of the fourty samples selected to represent different regions as well as classes and grades, tested positive for deoxynivalenol (DON). The average of the positive results was 187 µg/kg.