

SOUTH AFRICAN

A close-up photograph of several wheat spikes, showing the intricate details of the awns and the grain heads. The wheat is set against a warm, golden-brown background, likely a field at sunrise or sunset. The lighting creates a soft glow around the spikes, highlighting their texture and color.

**WHEAT CROP
QUALITY REPORT
2006/2007 Season**

INDEX

	Page
Introduction	1
Production and protein distribution graphs	2
Quality 2006/2007 season	3
Wheat grades, cultivars and mycotoxins	4
Wheat class and grade per production area (pie charts) Protein distribution curves per production area (graphs)	5
Regional quality weighted averages	6
Protein, falling number, hectolitre mass, and mixogram peak time over 10 seasons (graphs)	7
Regional quality	8 - 11
RSA wheat production and sampling procedure	12
Graph of tons produced per hectare	13
Summary of imported wheat of 2005/2006 season	13
Graphs showing correlation between protein content and bake volume over last four seasons	14
Comparison of Flour Quality over last four seasons	15
Quality data plus rheological graphs per production region	16 - 43
Weighted average protein, falling number, hectolitre mass and mixogram peak time per region compared over the last three seasons	44
Grading table	45
Mycotoxin results	45
RSA chart plus seed figures	46
Methods	47 - 49
Imported wheat quality compared to RSA during the 2005/2006 production season	50 - 63
Summary of RSA wheat quality of 2004/2005 and 2006/2007	64 - 65

Compiled and issued by the:

Southern African Grain Laboratory

3rd Floor
CSIR building no.4
Meiring Naudé Street
Pretoria
SOUTH AFRICA

P.O.Box 1059
SILVERTON
0127

Tel: +27 (12) 349 2683
Fax: +27(12) 349 2686



E-mail: sagl@mweb.co.za
Website: www.sagl.co.za

SOUTH AFRICAN COMMERCIAL WHEAT QUALITY FOR THE 2006/2007 SEASON

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- *The National Chamber of Milling and its members for providing samples of wheat that were delivered directly to the mills.*

Introduction

The final calculated wheat production for the 2006/2007 season (2 105 000 tons) was 10 % better than the previous season (1 905 000 tons) and is also 10 % better than the 5-year average of 1 914 005 tons (2002/2003 to 2006/2007 seasons).

Although the hectolitre mass (78.4 kg/hl) and thousand kernel mass (37.2 g) were very good, this crop was of lower quality compared to the previous seasons.

About 10 % less samples made the grade B1 this season compared to other seasons. This was mainly because of the low protein levels.

The whole wheat protein averaged a ten year low with 11.45 % (12 % mb).

The quality of the flour was average to below average. The dough was of poorer quality than previous seasons with low alveogram and extensogram strengths. The farinogram development time of 3.4 minutes, was the shortest average ever experienced.

The straight-dough optimized 100-gram baking test, showed more variation in volume according to the protein content than in previous years.

Usually there are significant quality differences between the three major production regions, which was not evident with this season.

The Southern African Grain Laboratory (SAGL), receives samples from all the production areas, and determines the quality of the annual wheat crop. The results are then published in this report

and are also made available on the website www.sagl.co.za as raw data and an option to print the data in book format.

The SAGL has ISO 17025 accreditation and is also used as the reference laboratory for grain quality analyses in Southern Africa.

Samples, representing the production of each region, are fully graded and thousand kernel mass is done. Small samples are milled on the quadromat mill, after which a mixogram analysis is done.

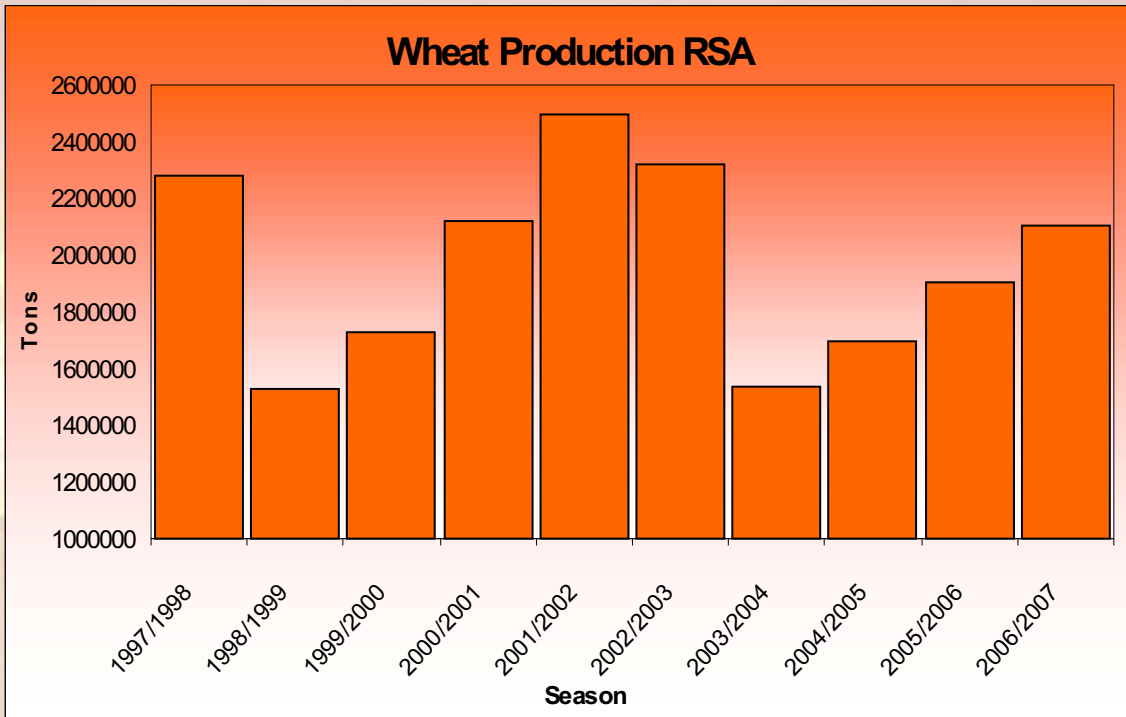
Cultivar identification is done on these samples and sale figures of seed sold by the commercial grain silo owners are obtained.

Composite samples are made up per class and grade for each production region and milled on the Bühler mill. Rheological tests, such as a mixogram, farinogram, alveogram, extensogram and 100-gram baking test, are then performed.

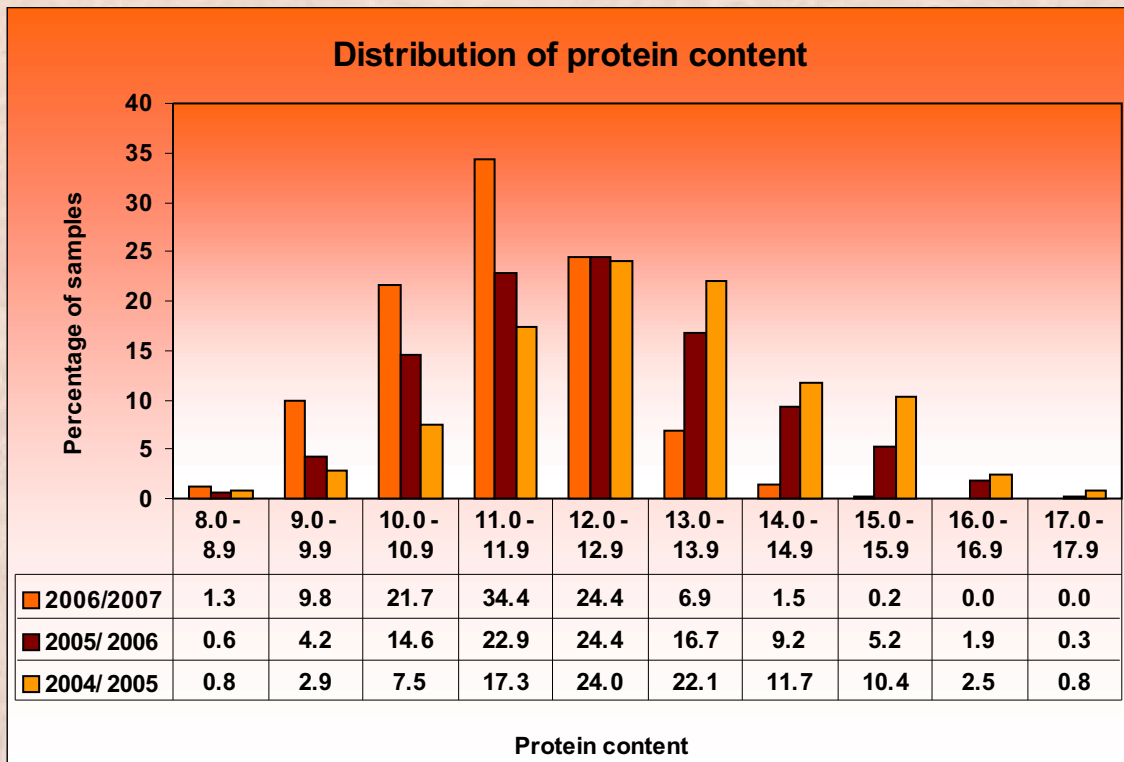
Imported wheat (1 October 2005 - 30 September 2006)

The SAGL is also monitoring the quality of all wheat imported into South Africa. The same analyses which are done on the local crop are also done on the imported wheat. The last sixteen pages of this report contain summaries of imported wheat from specific countries during the 2005/2006 season compared to a summary of the local crop quality for the same season. Summaries of the quality of the local wheat for the 2004/2005 and 2006/2007 season are also provided.

WHEAT PRODUCTION IN THE RSA OVER THE LAST 10 SEASONS



DIFFERENCES IN THE DISTRIBUTION OF PROTEIN CONTENT OVER THE LAST 3 SEASONS



Crop quality for 2006/2007 season

The protein average dropped to 11.5 % (12 % mb) (12.4 % in the previous season). The protein distribution graph of all the wheat produced was normal with most samples having protein contents between 10 % to 11.9 % (12 % mb).

The average hectolitre mass was 78.4 kg/hl (normal average). An average thousand kernel mass of 37.2 g was obtained.

The average screenings (1.8 mm sieve) was 1.81 %.

The average falling number was 351 seconds, there were six samples that gave falling number values of less than 220 seconds and eleven samples had falling number values of between 220 and 250 seconds. Falling number values less than 220 seconds is an indication of undesirable high enzyme activity that could have negative effects on the baking process.

The mixogram peak time on flour from the Quadromat mill averaged 2.8 minutes and is below the ten year average of 2.9 minutes. The mixogram peak time of the flour from the Bühler mill averaged 2.6 minutes.

The average Bühler extraction was 75.1 %, with an average Kent Jones colour of -1.2 KJ.

The farinogram had an average water absorption of 61.4 % (62.3 % the previous year) and an average development time of 3.4 minutes (5.0 minutes last season). The average alveogram strength was 36.8 cm² and the average P/L value 0.93 (40.7 cm² and 0.81 the previous season). The average extensogram strength was 82 cm² (108 cm² 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, was evaluated from excellent to poor. The baking test with Free State (summer rainfall area) wheat flour scored the lowest with an average ranking of good, followed by the wheat flour from the Western Cape (winter rainfall areas) scoring an average ranking of very good with mostly the bread flour from the irrigation areas scoring an average ranking of excellent. This is the first survey that showed a wide variance in the bread volumes.

Quality of imported wheat for 2005/2006 season (previous season)

During the 2005/2006 season, 1 054 768 tons of wheat were imported to RSA. The biggest quantity was imported from Argentina, namely 392 930 tons, followed by Germany with 354 718 tons, then USA with 88 651 tons and Ukraine with 85 979 tons. Smaller quantities were imported from Canada (62 643 tons), Australia (59 927 tons) and France (9 920 tons). (SAGIS web site)

For grading as well as dough and baking quality of the imported wheat, please see pages 50 to 63.

Wheat grades

Representative samples (480) of the crop were graded as follows: 28 % was graded B1, 27 % was graded B2, 22 % was graded B3, 9 % was graded B4 and UT and COW made up 14 %. This year about 10 % less samples graded B1 compared to the previous year.

Grade B1 wheat in the Free State province amounted to 36 % and grade B1 in other summer rainfall areas amounted to 33 %. In the irrigation areas 31 % of the wheat graded as B1 and in the Western Cape Province only 17 % graded as B1.

Cultivars

In the winter rainfall area, SST 88 dominated the market. The Western Cape produced 33 % of all wheat grown in South Africa during the 2006/2007 season. In the Swartland area of the Western Cape, SST 88 (37 %) were followed by SST 027 (28 %) and SST 57 (16 %). In the Ruëns area of the Western Cape, SST 88 (45 %) were followed by SST 57 (24 %) and SST 015 (14%).

The cultivar that dominated the market in the Free State was Elands (30 %). Elands was followed by Gariep (8%), SST 806 (7 %) and PAN 3118 (6%).

The cultivar SST 806 (34 %) dominated the market in the Vaal and the Orange River areas, followed by CRN 826 with 29 % and SST 876 with 7 %.

In Limpopo and Gauteng SST 806 (42 %) was the dominant cultivar followed by CRN 826 (15%), SST 876 (14 %), Olifants (12 %) and SST 825 (11 %). The cultivar planted most in the Mpumalanga area was SST 806 (36 %) followed by CRN 826 (20 %), SST 876 (12 %) and Olifants (7 %).

The above information was calculated from the cultivar identification done on all 480 crop samples.

Mycotoxins

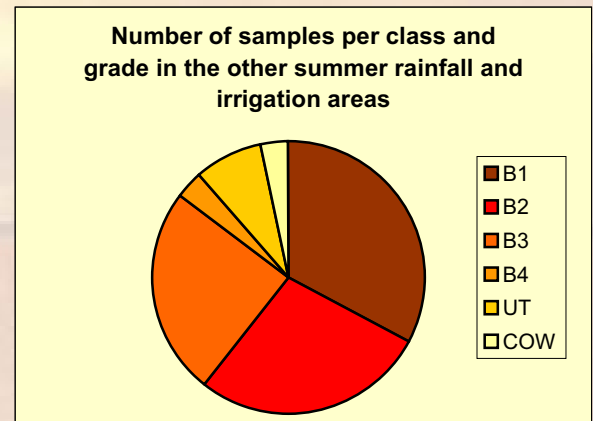
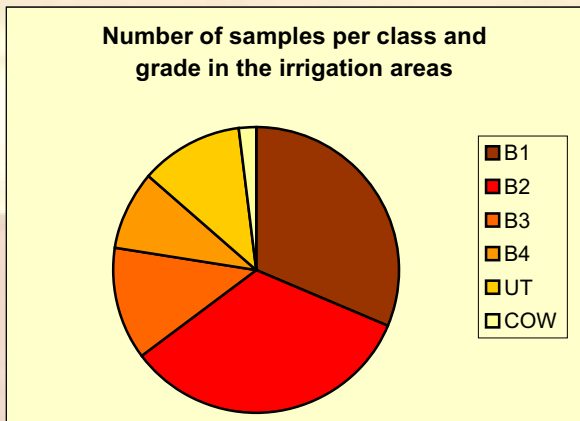
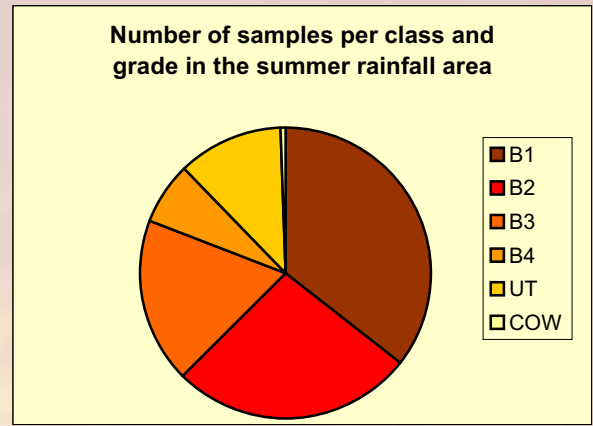
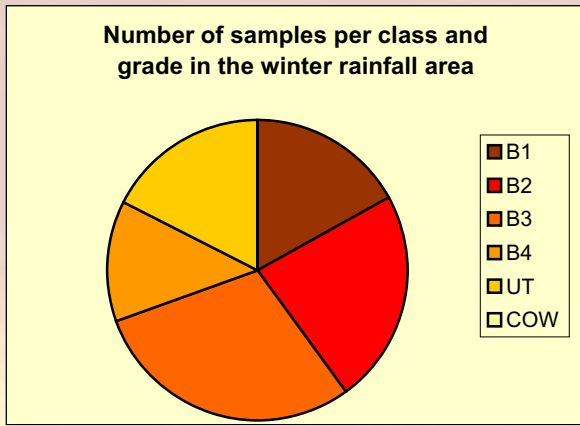
Mycotoxins, as secondary metabolites of moulds or fungi, can cause toxic effects in humans and animals consuming contaminated foods or feeds. Thirty samples (representing different regions) were selected randomly for mycotoxin analyses. These samples were tested for aflatoxin, deoxynivalenol and ochratoxin.

Tests are no longer done for T2, as the fungi producing this mycotoxin only grows at very low temperatures. As from the 2004/2005 season, the SAGL no longer tests for fumonisin and zearalenone, because the fungi producing these toxins do not grow on wheat.

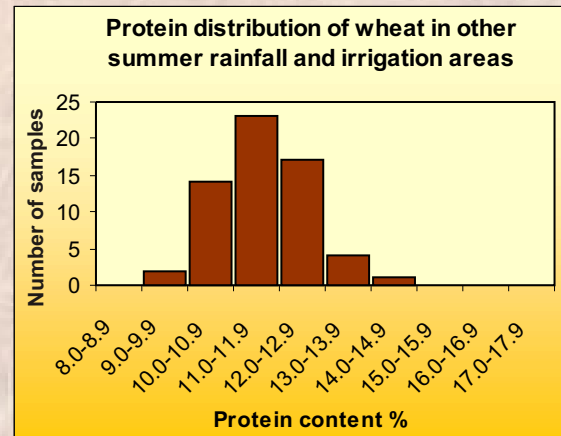
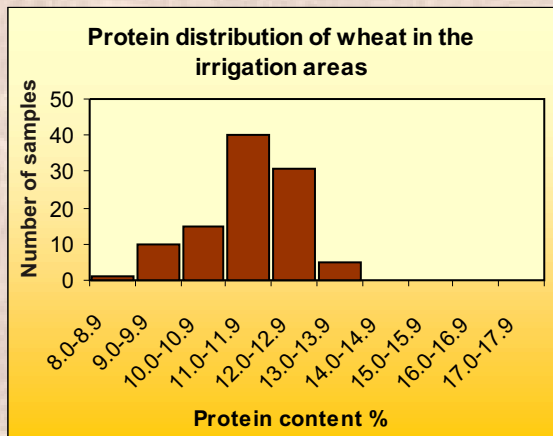
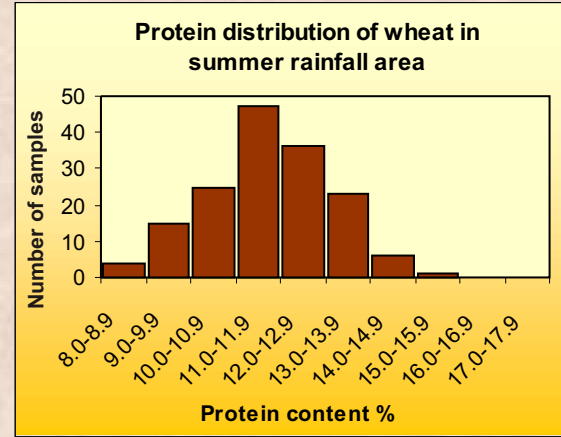
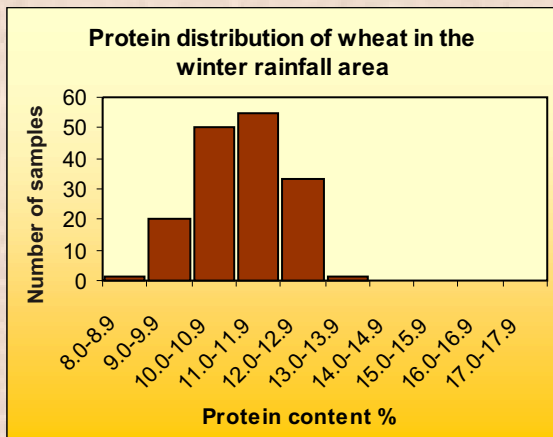
No aflatoxin was found on the 30 samples tested. In accordance with Act 54 of 1972, Foodstuffs, Cosmetics and Disinfectants, the allowable level of total aflatoxin is 10 ppb ($\mu\text{g}/\text{kg}$). In accordance with Act 36 of 1947, Fertilizers, Farm Feeds, Agricultural and Stock Remedies, the allowable level of total aflatoxin is 10 to 50 ppb ($\mu\text{g}/\text{kg}$).

Ochratoxin was found in six of the 30 samples tested ranging between 0.47 ppb to 1.4 ppb. In all samples tested, levels of deoxynivalenol were found, averaging 1.46 ppm, and ranging between 0.53 to 2.4 ppm.

Wheat class and grades per production area



Protein distribution curves per production area



REGIONAL QUALITY WEIGHTED AVERAGES

	Winter rainfall area (Western Cape)	Summer rainfall area (Free State)	Irrigation areas	Other Summer rainfall and Irrigation areas	RSA average
Individual samples n	160	157	102	61	480
Regions	2 - 6	21 - 28	10-12,14-20	30 - 35	All
Hectolitre mass dirty, kg/hl	77.3	78.7	79.2	79.1	78.4
1000 kernel mass (13 % mb), g	38.0	35.9	37.6	37.8	37.2
Falling number, sec	365	330	358	358	351
Screenings (1,8 mm), %	1.80	1.64	1.96	2.00	1.81
Protein (12 % mb), %	11.13	11.71	11.46	11.66	11.45
Mixogram peak time, min (Quadromat)	2.6	3.0	2.6	2.7	2.8
Individual samples n	27 37 47	56 42 29	32 34 13	20 17 15	135 130 104
Composite samples per grade n = 100	20 29 0	11 18 1	9 12 2	2 5 2	42 64 5
	B1 B2 B3	B1 B2 B3	B1 B2 B3	B1 B2 B3	B1 B2 B3
	B4 UT COW	B4 UT COW	B4 UT COW	B4 UT COW	B4 UT COW
Composite samples n	5 5 5	8 8 6	8 7 5	5 5 5	26 25 21
	4 4 0	3 4 0	2 5 1	2 2 1	11 15 2
Bühler extraction, %	74.6 75.1 74.8	74.6 75.0 74.5	76.1 75.3 76.8	75.2 76.3 76.3	75.2 75.4 75.5
	74.9 74.8 -	73.8 73.7 -	74.8 74.3 76.8	75.6 77.0 67.8	74.7 74.6 72.3
Flour colour, KJ	-1.4 -1.3 -1.4	-1.0 -1.2 -1.1	-1.1 -1.2 -1.6	-1.1 -1.4 -1.5	-1.1 -1.3 -1.4
	-1.5 -0.5 -	-1.6 -1.3 -	-1.4 -0.7 -0.6	-1.4 -0.9 -1.4	-1.5 -0.8 -1.0
Farinogram:	62.4 61.1 60.9	63.2 61.6 60.7	62.9 61.5 59.8	63.5 62.4 60.6	63.0 61.6 60.5
Water absorption, %	58.8 61.7 -	61.6 60.1 -	61.7 59.7 57.8	58.3 60.7 65.1	60.0 60.5 61.5
Farinogram:	4.2 3.8 2.7	4.7 3.5 3.3	4.6 3.5 3.2	4.9 4.0 2.5	4.6 3.7 2.9
Development time, min	2.2 3.0 -	2.1 2.3 -	1.9 2.5 1.9	2.0 3.5 2.8	2.1 2.7 2.4
Alveogram:	38.8 33.9 30.8	47.8 42.1 40.6	39.2 35.6 28.8	41.7 36.2 33.4	42.3 37.5 33.7
Strength (S), cm²	26.0 33.4 -	40.0 32.6 -	37.9 33.2 33.2	26.1 39.6 42.8	32.0 33.9 38.0
Alveogram:	0.81 0.82 1.00	0.93 1.16 1.12	0.73 0.82 0.68	0.77 0.81 0.86	0.81 0.93 0.92
P/L	0.83 0.87 -	1.84 1.28 -	1.78 0.69 0.57	0.69 0.68 1.82	1.25 0.89 1.20
Extensogram:	84 75 66	104 87 88	90 77 67	98 76 77	95 80 75
Strength, cm²	58 75 -	83 72 -	84 80 90	71 105 106	72 80 98
Mixogram peak time, min	2.3 2.3 2.3	2.6 2.9 3.1	2.3 2.4 2.2	2.2 2.2 2.5	2.4 2.5 2.6
	2.6 2.4 -	3.1 2.8 -	3.3 2.8 3.0	2.7 2.9 2.8	2.9 2.7 2.9
Relationship between protein and bread volume	VG VG G	G G G	VG EX EX	EX EX EX	VG VG VG
	VG VG -	P Q -	G VG EX	EX EX P	G VG G

Ex = Excellent

VG = Very Good

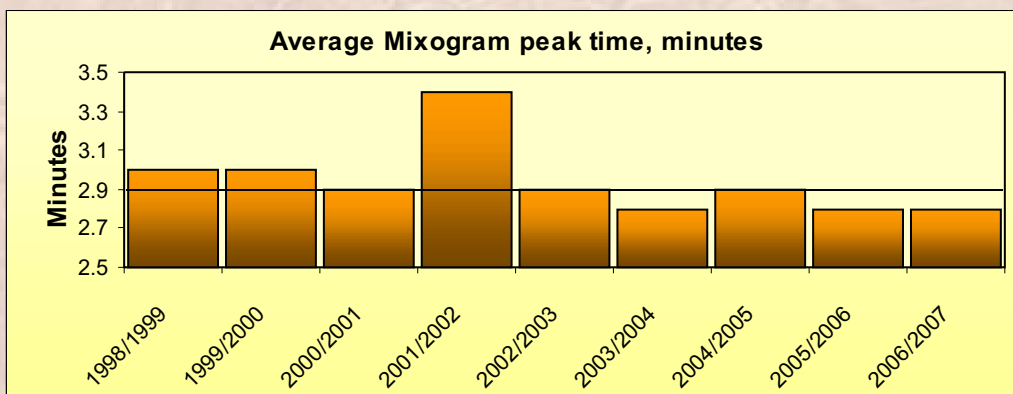
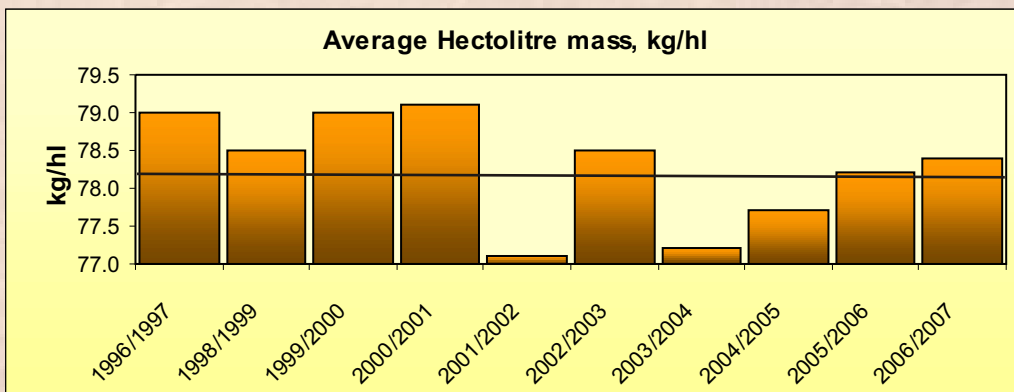
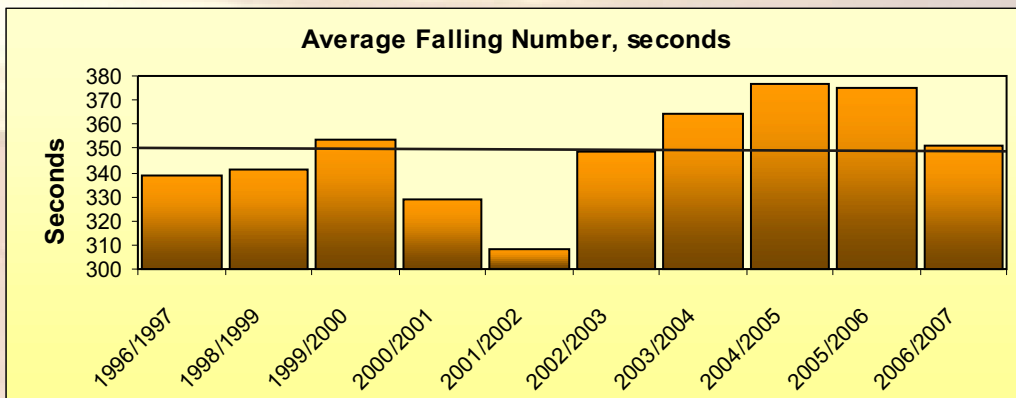
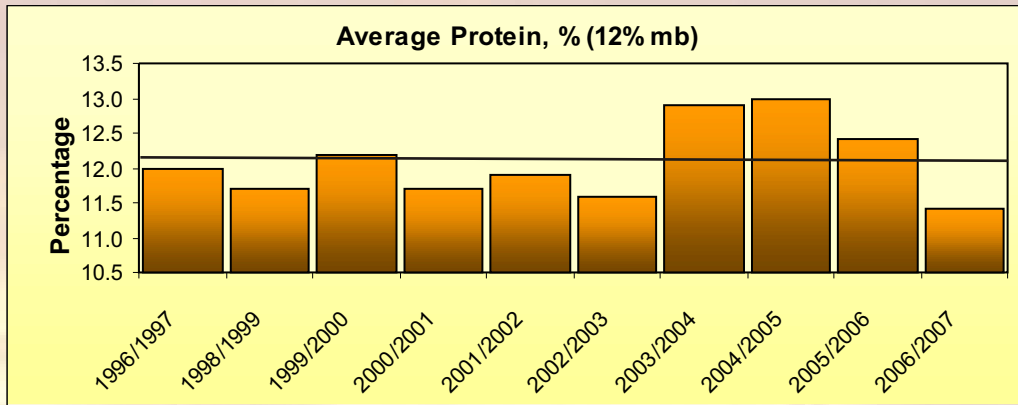
G = Good

Q = Questionable

P = Poor

AVERAGE QUALITY OVER 10 SEASONS

(1997/1998 no data available)



The horizontal line within each graph indicates the 10 year average.

REGIONAL QUALITY

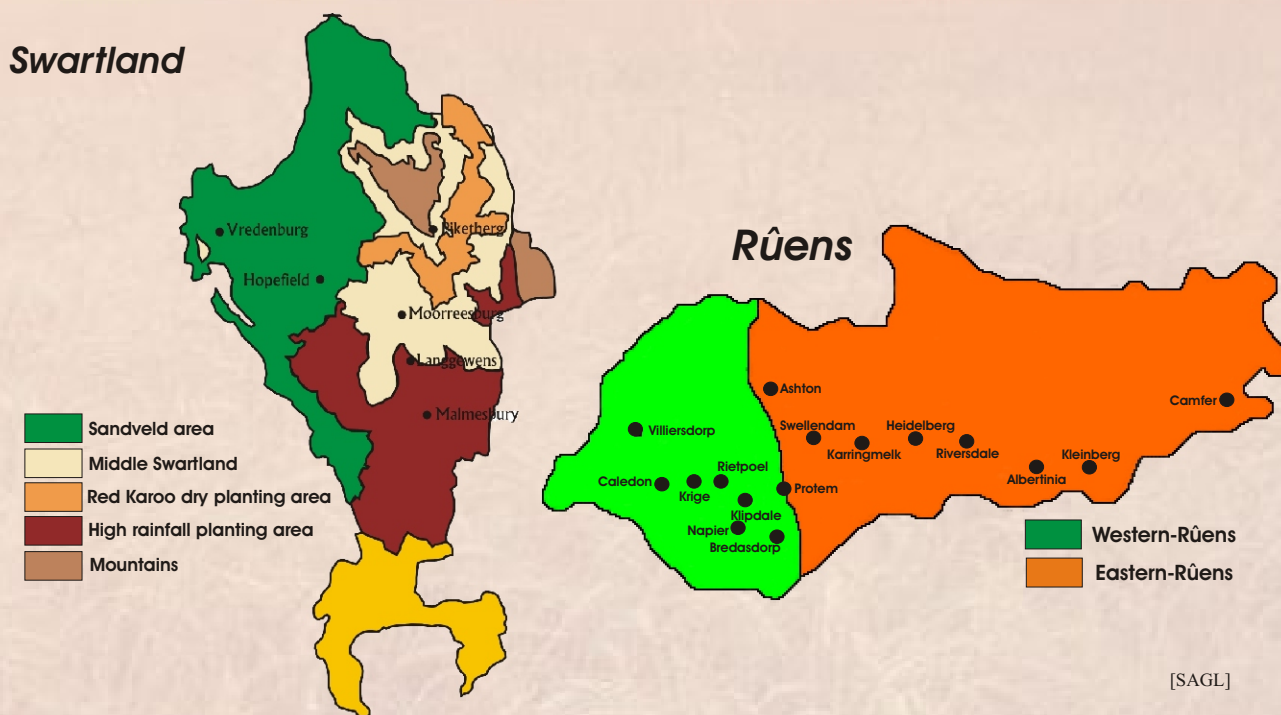
WINTER RAINFALL AREA (Western Cape)

Production regions 1 to 6 fall within the winter rainfall area (Western Cape Province). Regions 1 to 4 are the Swartland area and regions 5 and 6 the Rûens area. No samples were received from region 1 for this season. The Western Cape had the second highest production of all the provinces this season, namely 712 500 tons (CEC).

The hectolitre mass averaged 77.3 kg/hl (the previous season 78.5 kg/hl). The thousand kernel mass averaged 38.0 gram, which is better than the previous season's 35.8 gram. The Western Cape had a normal year regarding rainfall except for little rain in the Swarland area during harvest resulting in isolated cases of pre-harvest sprouting. The average falling number was 365 seconds.

The protein averaged 11.13 % (12 % mb) and is a little lower than the previous season (11.53 %). The average protein in the Swartland was 11.10 % (11.6 % the previous season) and the average protein in the Rûens was 11.20 % (the same as in 2005/2006). The hectolitre mass of the Swartland and Rûens was 77.8 kg/hl and 76.4 kg/hl respectively.

Winter Rainfall Area (Western Cape Province)



The screenings of 1.80 % were higher than the previous season's 1.53 %. The screenings in the Swartland averaged 1.83 % and that of the Rûens 1.74 %. The Bühler extraction averaged 74.8 % (average of wheat grades B1 to B4, UT and COW) and the average colour of the flour was -1.2 KJ units. Both these characteristics equaled that of the wheat in the Free State, but were not as good as the wheat from the other rainfall areas, and the Vaal and Orange River irrigated wheat.

The dough quality was the same as in the previous season. The mixogram peak time (Quadromat mill) averaged 2.6 minutes. The average farinogram absorption was 61.0 %. The average strength of the alveogram was 32.8 cm² and the average strength of the extensogram was 72 cm², compared to the Free State (89 cm²) and 80 cm² in the irrigation areas.

The 100-gram baking test showed a very good relationship between protein content and bread volume.

SUMMER RAINFALL AREA (Free State)

Production regions 21 to 28, which fall within the Free State Province, had the second highest production, namely 810 000 tons (CEC).

The physical characteristics such as hectolitre mass (78.7 kg/hl), thousand kernel mass (35.9 gram) were better than the previous season's 77.5 kg/hl and 34.3 gram respectively. The screenings were higher (1.64 %) than the previous season's 1.50 %. The average protein dropped to 11.71 % (12 % mb) from an average of 13.95 % the previous season.

The Free State had normal weather conditions during spring and summer but Central Free State and the Eastern Free State experienced some rain during harvesting, which resulted in some samples with low falling number values as well as field fungi.

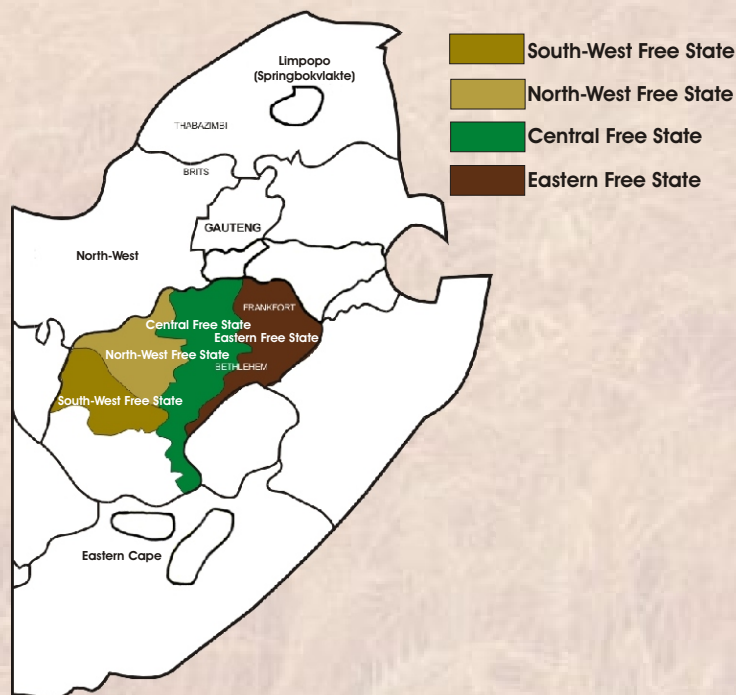
The mixogram (Quadromat) peak time was 3.0 minutes (3.1 minutes previous season), giving the Free State the longest average mixogram peak time of the different regional qualities.

The average Bühler extraction percentage in the Free State was the lowest in all the regions, namely 74.5 % (74.4 % previous season). The Kent Jones flour colour was -1.2 KJ units (-1.1 KJ units in previous season). The wheat of the Free State usually yields a little darker flour than the other regions but all three main producing areas yielded an average colour of -1.2 KJ units this season.

The average farinogram water absorption was 61.6 % (63.2 % the previous season), also the same as the other regions. The wheat from the Free State usually tends to give a stronger dough than the other regions, but averaged more or less the same than the other regions with a farinogram development time of 3.5 minutes, alveogram strength of 41.8 cm² and an extensogram strength of 89 cm².

The 100-gram baking test showed that the relationship between protein content and bread volume was ranging from good, questionable to poor, between the different grades.

FREE STATE



SUMMER RAINFALL AREA (Mpumalanga, Limpopo, Gauteng and Eastern Cape)

Other summer rainfall regions, excluding the Free State, are mainly regions 30, 32, 33 (Mpumalanga), 34 (Gauteng) and 35 (Limpopo). They produced in total about 192 300 tons during this season. No samples were received from the Eastern Cape or KwaZulu-Natal regions.

The average hectolitre mass was 79.1 kg/hl (78.4 kg/hl the previous season). This is more or less the same as in the irrigation areas. The thousand kernel mass was the second highest with an average of 37.8 g (winter rainfall area 38.0 g).

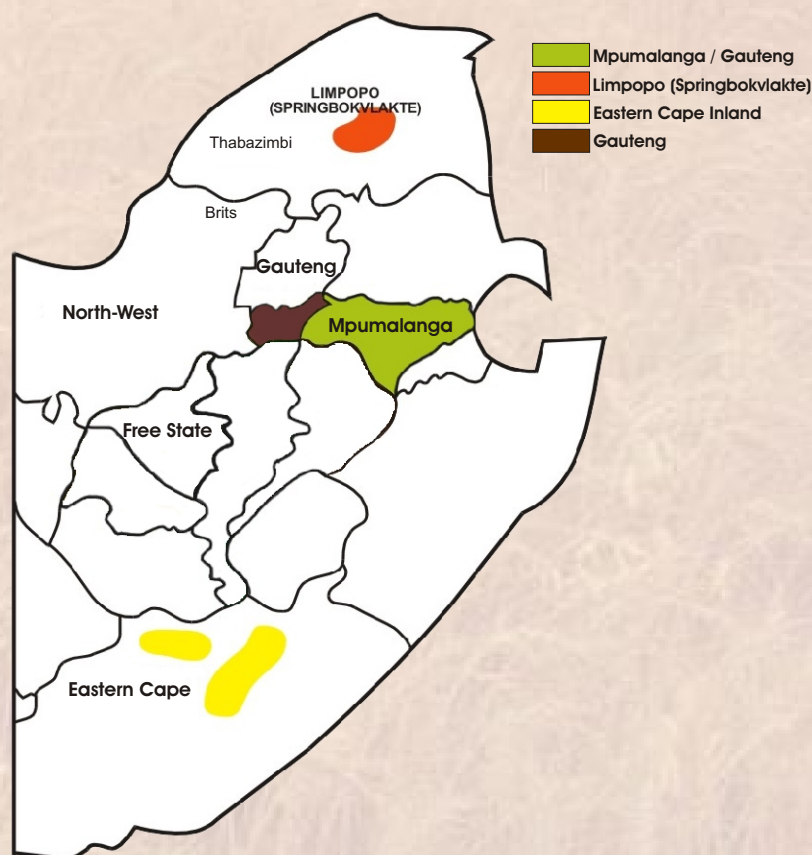
The average falling number was 358 seconds. The average percentage screenings was 2.0 %. The average protein content was 11.66 % (12 % mb), which is 0.8 % lower than the previous year.

The average mixogram (Quadromat) peak time was 2.7 minutes (2.8 minutes the previous season).

The average Bühler extraction was 75.6 %, with an average colour of -1.3 KJ units (76.4 % and -2.1 KJ units the previous season). The farinogram average water absorption was 61.8 % (62.4 % the previous season) and had an average development time of 3.5 minutes.

The average alveogram strength was 36.5 cm², with an average P/L value of 0.84, and the average extensogram strength was 86 cm².

The 100-gram baking test showed an excellent relationship between protein content and bread volume.

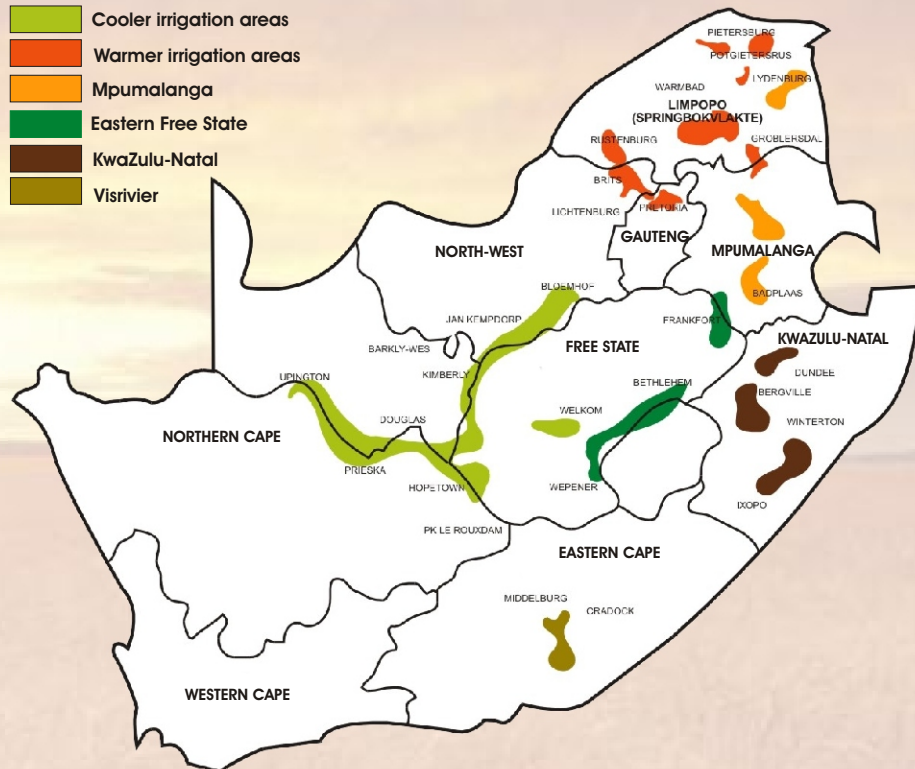


(Regional maps kindly provided by the Small Grains Institute, ARC)

IRRIGATION AREAS

(Vaal and Orange River plus other irrigation areas. See map.)

Irrigation areas in South Africa



The average hectolitre mass was 79.2 kg/hl (75.7 kg/hl the previous season) and the thousand kernel mass was 37.6 g (35.8 g the previous season). The average falling number was 358 seconds. The average screenings was 1.96 % and the protein averaged 11.46 % (12 % mb) and were both a little lower than the 2.06 % screenings and the 11.56 % (12 % mb) protein of the previous season.

The average mixogram (Quadromat) peak time was 2.6 minutes which was the same as the previous season.

The average Bühler extraction percentage was 75.6 (76.0 % in previous season), with an average flour colour of -1.2 KJ units.

The average farinogram water absorption was 61.2 % (61.9 % during previous season), with an average farinogram development time of 3.4 minutes.

The average alveogram strength was 35.1 cm² and the average P/L was 0.81 (37.9 cm² and 0.71 cm² respectively the previous season).

The average extensogram strength was 80 cm². The relationship between protein content and bread volume was shown to be excellent, very good and good by the 100-gram baking test.

South African Winter Cereal Production

Wheat is by far the biggest winter cereal crop planted in South Africa. Other winter crops are barley, canola and sweet lupines. Summer field crops are better suited for the South African climatic conditions. Maize being the largest of the different crops, followed by wheat, then sunflower seed, soya-beans, barley, sorghum, dry beans, groundnuts, canola and sweet lupines. The annual South African wheat crop is about one quarter of the annual maize crop.

South Africa (made up of nine provinces) is divided into 36 crop production regions with wheat planted in about 32 of these regions. These production regions are described on pages 16 to 43 (on the top of the left page) giving the specific intake silo names for each region.

The three main wheat producing provinces are Free State (summer rainfall), Western Cape (winter rainfall) and the Northern Cape (irrigation). A fourth province worth mentioning is the North-West (mainly irrigation). See map on page 46.

The Free State province produced 810 000 tons and the Western Cape province followed with 712 500 tons. (Sixth estimate by the Crop Estimates Committee, CEC). These two provinces were responsible for 70 % of the total wheat produced.

The yield ranged from 6.2 tons per hectare in the Northern Cape (irrigation area) to 2.3 tons per hectare for the Free State (summer rainfall area). Other areas with high yields were Mpumalanga with 5.5 tons per hectare, Gauteng with 5.4 tons per hectare, North West with 5.0 tons per hectare and Limpopo and KwaZulu-Natal with each 4.5 tons per hectare dryland. All these “other” areas also produce irrigation wheat. The Western Cape area (2.5 tons per hectare) and Eastern Cape (3.5 tons per hectare) are dependant on winter rainfall. (CEC)

The total production is not enough for domestic requirements and South Africa has to import wheat to meet its domestic consumption of approximately 2.8 million tons every year.

South Africa has four major wheat-breeding programs. The wheat industry has set up a release criteria document with stringent quality evaluation norms. The South African breeders can only release a new cultivar or an introduction cultivar if it has better agronomical as well as better flour quality characteristics than the cultivars planted commercially in a specific area. Producers continuously try to improve the wheat yield and quality by selecting the best cultivars that can be grown commercially in a specific area. Grading standards are also set high to ensure adequate quality control.

Sampling procedure for the annual quality survey

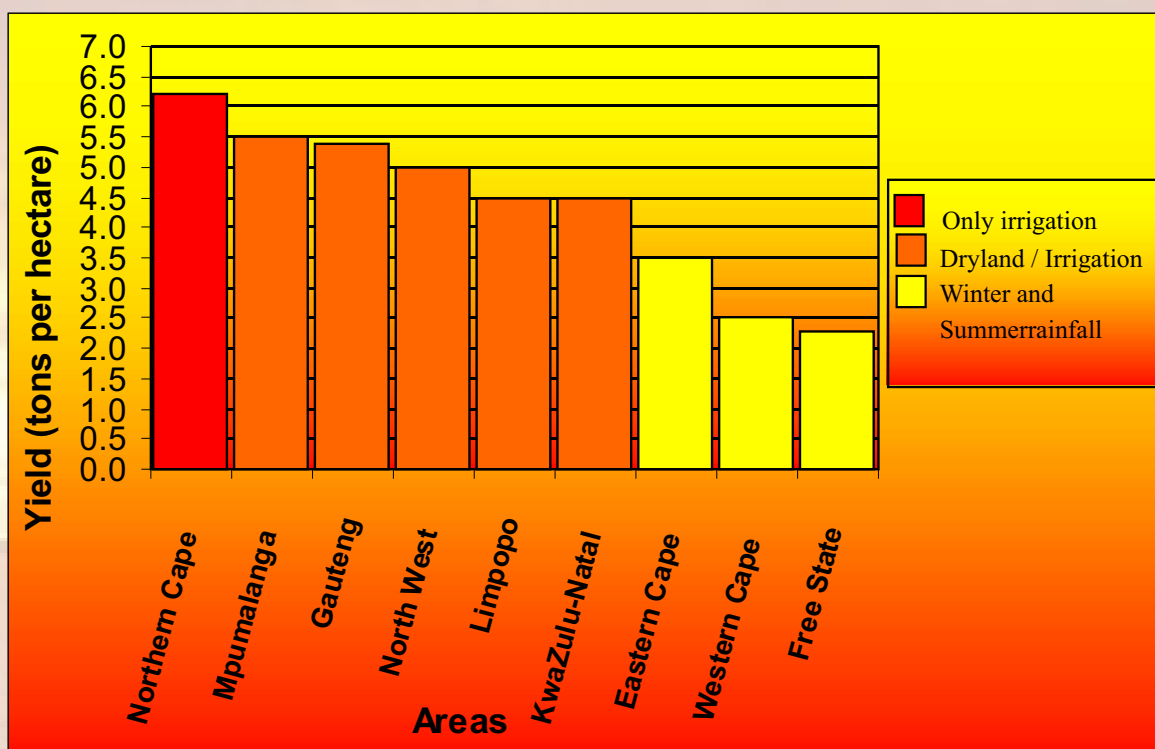
During the harvest season, a sample of each delivery of wheat is taken according to the prescribed Wheat regulation. A representative sample needs to be drawn for grading purposes before the wheat is taken in at the silo. Of each of these grading samples, about 200 grams is thrown into a 100 kg bin according to grade and class at each silo. The 100 kg bin is divided and a 5 kg sample is send to the SAGL for the annual quality survey.

The same method is followed where wheat is delivered directly from the producer to the miller.

After receiving these representative wheat crop samples from all over the country, the SAGL select 480 samples representing the wheat production of wheat for that specific region/province.

South Africa is the only wheat producing country known-of that produces this kind of comprehensive quality information on their national wheat crop and also have it available to the public.

Average yield per area (Irrigation versus summer and winter rainfall areas)

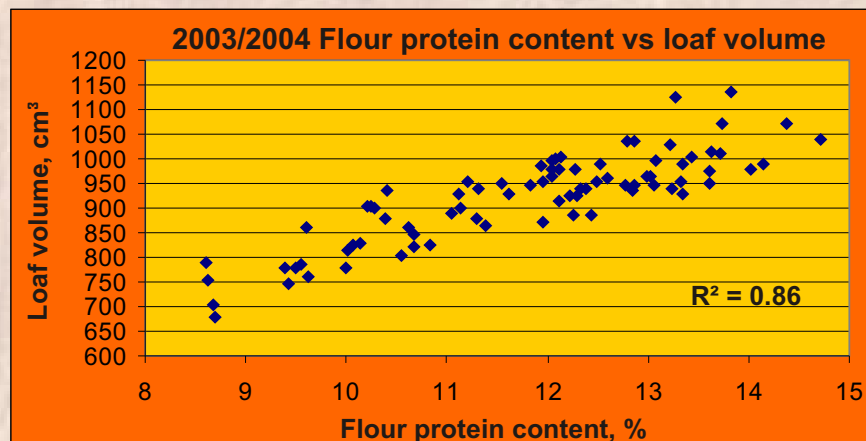
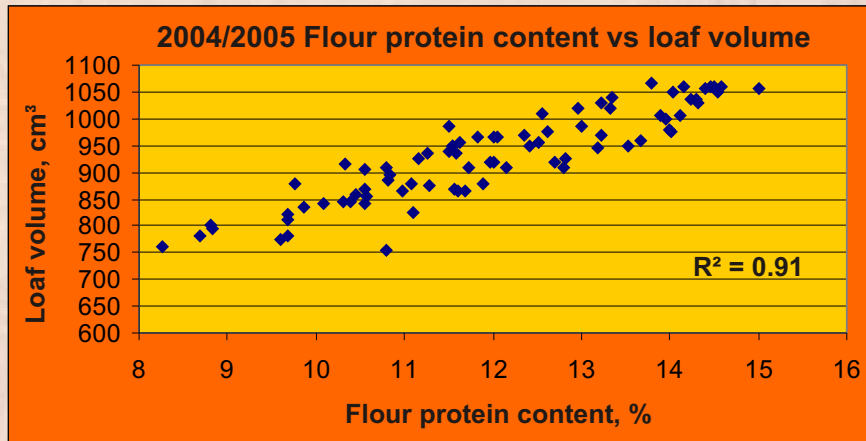
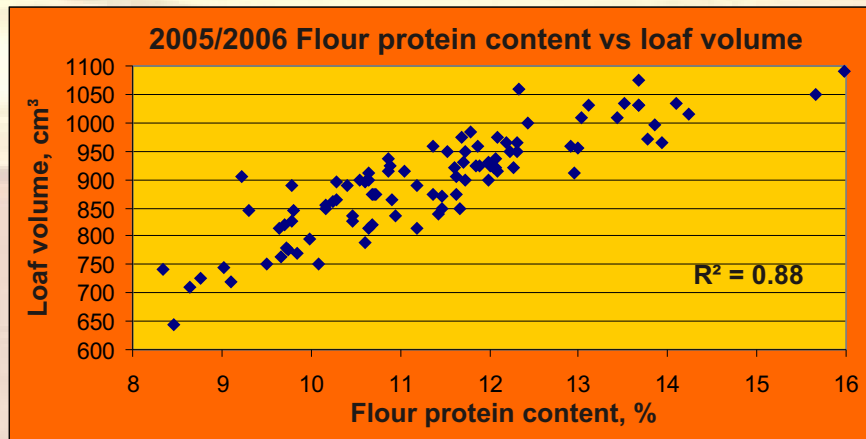
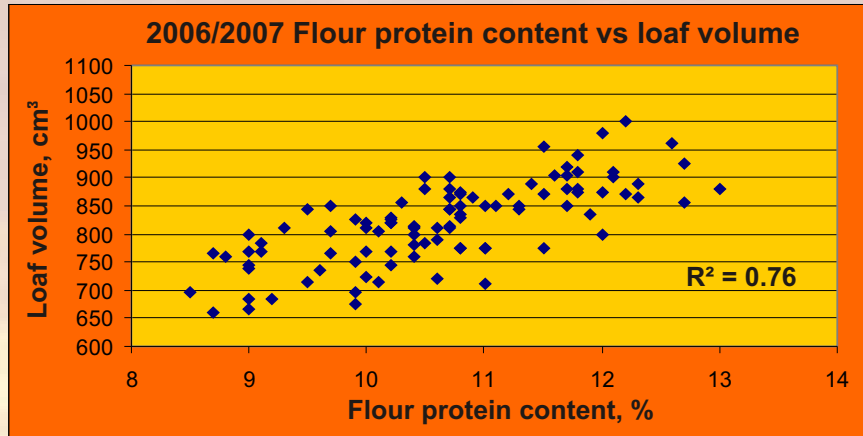


Average quality data of imported wheat during the 2005 / 2006 season (previous season)

	America	Argentina	Australia	Germany	France	Canada	Ukraine	RSA
Protein (12 % mb) (%)	11.96	11.56	12.79	11.99	11.12	12.92	10.97	12.43
Hlm (Kg/hl)	76.7	77.1	80.9	76.5	77.1	79.1	77.0	78.2
Screenings (%)	2.32	2.42	1.32	2.52	3.00	2.56	2.35	1.69
Extraction (%)	72.6	73.8	73.9	73.7	74.7	74.0	73.4	75.5
Flour colour (KJ)	-0.3	0.2	-2.4	0.4	-0.2	-1.1	-0.2	-1.8
Farinogram								
Waterabsorption (%)	60.7	61.7	65.0	60.4	59.3	62.8	58.5	62.3
Dev. Time (min)	2.3	2.3	5.7	2.2	1.7	4.2	1.9	5.0
Alveogram								
Strength (cm ²)	37.4	38.3	51.7	38.9	41.2	51.0	34.3	40.7
Mixogram (Bühler)								
Peak time (min)	4.1	4.1	2.8	4.1	4.1	3.5	4.5	2.5
Baking test 100-gram								
Volume (cm ³)	807	763	871	805	760	875	760	906
Samples tested	23	48	8	53	2	5	16	480
Tonnage	88 651	392 930	59 927	354 718	9 920	62 643	85 979	1 905 000

Straight - dough optimized 100g Baking test

Comparison of protein vs loaf volume over the last four seasons



Comparison of Flour Quality over the last four seasons

Flour Quality 2006/2007 season			
Flour protein (12 % mb)	10.6	Farinogram water abs, (%)	61.4
Bread volume 100g (cm ³)	816	Farinogram dev. time (min)	3.4
Mixogram (Bühler) peak time (min)	2.6	Alveogram strength (cm ²)	36.8
Extensogram strength (cm ²)	82	Alveogram P/L	0.93

Flour Quality 2005/2006 season			
Flour protein (12 % mb)	11.5	Farinogram water abs, (%)	62.3
Bread volume 100g (cm ³)	906	Farinogram dev. time (min)	5.0
Mixogram (Bühler) peak time (min)	2.5	Alveogram strength (cm ²)	40.7
Extensogram strength (cm ²)	108	Alveogram P/L	0.81

Flour Quality 2004/2005 season			
Flour protein (12 % mb)	12.0	Farinogram water abs, (%)	61.0
Bread volume 100g (cm ³)	930	Farinogram dev. time (min)	5.1
Mixogram (Bühler) peak time (min)	2.6	Alveogram strength (cm ²)	39.6
Extensogram strength (cm ²)	115	Alveogram P/L	0.62

Flour Quality 2003/2004 season			
Flour protein (12 % mb)	11.8	Farinogram water abs, (%)	61.5
Bread volume 100g (cm ³)	922	Farinogram dev. time (min)	4.5
Mixogram (Bühler) peak time (min)	2.4	Alveogram strength (cm ²)	41.1
Extensogram strength (cm ²)	98	Alveogram P/L	0.84

SOUTH AFRICAN WINTER RAINFALL WHEAT Western Cape Province

PRODUCTION REGION	(2)				(3)							
	Swartland Western Region				Swartland Central Region							
Intake silos	Bergrivier Darling Koperfontein Vredenburg				Eendekuil Klipheuwel Koringberg Malmesbury Moorreesburg Moravia Piketberg Pools Ruststasie							
WHEAT	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	11.27	9.50	12.60	0.94	11.11	9.30	13.20	0.96				
Falling number, sec	393	370	431	16.59	362	255	414	29.53				
1000 Kernel mass (13% mb), g	36.6	32.7	39.4	1.95	37.2	28.3	41.0	2.51				
Hectolitre mass (dirty), kg/hl	77.2	75.0	79.6	1.48	77.7	74.9	81.7	1.80				
Screenings (<1.8mm), %	2.78	1.79	5.12	0.89	1.77	0.18	5.17	1.23				
Total damaged kernels, %	0.69	0.00	1.56	0.39	0.83	0.24	2.52	0.35				
Number of samples	18				65							
CULTIVARS												
	SST 88		46.5		SST 88		35.4					
cultivars	SST 027		20.8		SST 027		29.5					
with highest %	SST 57		14.9		SST 015		15.2					
occurrence	SST 015		12.7		SST 57		14.9					
	PAN 3490		1.7		SST 65		1.9					
Number of samples	18				65							
MIXOGRAM (Quadromat)	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.6	2.3	2.9	0.20	2.5	2.0	3.2	0.26				
Tail height (6min), mm	46	41	50	2.72	46	40	52	2.40				
Number of samples	18				65							
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.3	74.4	74.7	-	74.7	-	74.6	75.1	75.1	75.1	75.0	-
FLOUR												
Protein (12% mb), %	11.7	11.0	9.9	-	10.2	-	11.8	11.0	10.0	9.0	10.8	-
Colour, KJ	-1.7	-1.5	-1.5	-	-0.5	-	-1.7	-1.8	-2.0	-2.0	-1.5	-
FARINOGRAM												
Water absorption (14% mb), %	62.9	61.5	60.6	-	60.8	-	62.6	61.0	60.6	59.1	61.4	-
Development time, min	3.5	3.5	3.2	-	3.2	-	4.5	4.7	2.2	1.8	4.0	-
Stability, min	7.0	7.8	6.3	-	5.7	-	7.5	6.9	6.2	4.5	5.6	-
Mixing tolerance index, BU	38	34	40	-	51	-	42	47	37	63	56	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	82	85	67	-	78	-	86	78	66	65	81	-
Maximum height, BU	325	350	305	-	325	-	330	335	315	315	305	-
Extensibility, mm	168	166	140	-	170	-	178	164	147	146	174	-
ALVEOGRAM												
Strength (S), cm ²	38.8	37.8	32.3	-	33.5	-	38.4	33.9	32.0	27.4	34.3	-
Stability (P), mm	93	93	89	-	84	-	85	79	84	78	81	-
Distensibility (L), mm	96	92	80	-	93	-	110	106	86	78	103	-
Configuration ratio (P/L)	0.97	1.01	1.11	-	0.90	-	0.77	0.75	0.98	1.00	0.79	-
MIXOGRAM												
Peak time, min	2.3	2.3	2.3	-	2.3	-	2.3	2.3	2.3	2.3	2.3	-
100g BAKING TEST												
Loaf volume, cm ³	850	775	750	-	770	-	875	775	725	665	775	-
Evaluation	2	3	2	-	1	-	1	3	3	3	2	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

**SOUTH AFRICAN
WINTER RAINFALL WHEAT
Western Cape Province**

PRODUCTION REGION	(4)					(5)						
	Swartland Eastern Region					Rüens Western Region						
Intake silos	Ceres Gouda Halfmanshof Leliedam Porterville Riebeeck-Wes					Bredasdorp Caledon Klipdale Krige Napier Protem Rietpoel Villiersdorp						
WHEAT	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	10.41	8.80	12.40	1.00		11.34	10.20	12.70	0.70			
Falling number, sec	353	312	406	23.55		366	262	423	44.34			
1000 Kernel mass (13% mb), g	37.3	33.2	40.9	2.76		40.2	35.9	44.5	1.89			
Hectolitre mass (dirty), kg/hl	78.9	76.1	83.6	2.18		76.3	72.0	78.9	1.80			
Screenings (<1.8mm), %	1.04	0.31	2.78	0.81		2.19	0.83	3.83	0.80			
Total damaged kernels, %	0.90	0.18	2.22	0.58		0.82	0.24	1.88	0.46			
Number of samples	17					27						
CULTIVARS												
	SST 88		34.5			SST 88		47.7				
cultivars	SST 027		28.2			SST 57		21.0				
with highest %	SST 57		21.4			SST 015		16.9				
occurrence	SST 015		11.3			SST 027		7.2				
	SST 65		2.2			PAN 3404		2.5				
Number of samples	17					27						
MIXOGRAM (Quadromat)	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.7	2.2	3.3	0.32		2.5	2.2	2.8	0.17			
Tail height (6min), mm	44	39	52	3.26		48	43	52	2.03			
Number of samples	17					27						
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.1	75.4	74.9	75.0	-	-	75.3	75.4	74.8	75.0	74.9	-
FLOUR												
Protein (12% mb), %	11.4	10.7	9.6	9.0	-	-	11.3	10.7	10.4	9.1	10.2	-
Colour, KJ	-1.5	-1.4	-2.0	-2.1	-	-	-1.2	-1.5	-1.3	-1.8	-1.2	-
FARINOGRAM												
Water absorption (14% mb), %	61.4	60.4	60.7	59.1	-	-	61.8	61.1	61.1	58.2	61.2	-
Development time, min	4.8	4.0	2.5	1.7	-	-	4.2	4.0	3.0	3.7	2.8	-
Stability, min	8.1	6.2	5.3	4.6	-	-	6.7	6.0	5.3	5.9	5.1	-
Mixing tolerance index, BU	42	49	52	50	-	-	43	53	63	50	58	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	102	71	66	53	-	-	82	79	65	67	65	
Maximum height, BU	375	290	310	295	-	-	305	305	260	285	260	
Extensibility, mm	184	166	140	132	-	-	185	179	172	165	169	
ALVEOGRAM												
Strength (S), cm ²	43.4	32.6	28.1	26.3	-	-	38.2	32.7	29.2	25.7	29.5	-
Stability (P), mm	83	74	85	77	-	-	86	76	73	60	76	-
Distensibility (L), mm	132	110	69	76	-	-	106	106	99	110	95	-
Configuration ratio (P/L)	0.63	0.67	1.23	1.02	-	-	0.81	0.71	0.74	0.54	0.80	-
MIXOGRAM												
Peak time, min	2.3	2.3	2.3	2.5	-	-	2.3	2.4	2.4	2.4	2.3	-
100g BAKING TEST												
Loaf volume, cm ³	890	865	735	740	-	-	845	810	760	770	745	-
Evaluation	0	0	2	0	-	-	1	1	2	0	2	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

**SOUTH AFRICAN
WINTER RAINFALL WHEAT
Western Cape Province**

**IRRIGATION WHEAT
Vaal and Orange river area**

PRODUCTION REGION	(6) Rüens Eastern Region						(10) Griqualand - West					
Intake silos	Albertinia Ashton Camfer Heidelberg Karringmelksrivier Kleinberg Protem Riversdal Swellendam						Britstown Douglas Havenga Brug Marydale Modderrivier Oranjerivierstasie Prieska Rietrivier Upington					
WHEAT	ave	min	max	stdev			ave	min	max	stdev		
Protein (12% mb), %	11.12	9.10	12.60	0.83			11.87	10.90	13.60	0.71		
Falling number, sec	359	228	426	46.65			387	325	450	29.39		
1000 Kernel mass (13% mb), g	39.1	32.2	46.2	3.82			37.8	30.3	46.6	3.19		
Hectolitre mass (dirty), kg/hl	76.4	72.0	79.1	1.58			80.8	75.5	82.1	1.39		
Screenings (<1.8mm), %	1.38	0.31	2.77	0.67			1.38	0.20	2.72	0.65		
Total damaged kernels, %	1.08	0.36	1.96	0.40			0.41	0.08	1.54	0.30		
Number of samples	33						27					
CULTIVARS												
	SST 88			43.4			SST 806			35.5		
cultivars	SST 57			26.5			CRN 826			20.5		
with highest %	SST 015			10.8			Krokodil			9.4		
occurrence	SST 027			7.3			Duzi			9.2		
	SST 825			4.4			SST 876			7.0		
Number of samples	33						27					
MIXOGRAM (Quadromat)	ave	min	max	stdev			ave	min	max	stdev		
Peak time, min	2.9	2.3	6.0	0.74			2.2	1.3	2.5	0.22		
Tail height (6min), mm	48	40	53	3.11			46	41	51	2.40		
Number of samples	33						27					
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.6	75.2	74.7	74.4	74.6	-	76.0	76.9	75.7	-	-	-
FLOUR												
Protein (12% mb), %	11.3	10.4	9.7	9.0	10.0	-	11.8	10.7	11.0	-	-	-
Colour, KJ	-0.7	-0.3	-0.3	-0.1	1.3	-	-1.2	-1.6	-1.8	-	-	-
FARINOGRAM												
Water absorption (14% mb), %	63.1	63.0	61.7	58.7	63.3	-	62.8	62.2	62.8	-	-	-
Development time, min	3.8	2.7	2.4	1.7	2.0	-	4.2	3.5	3.3	-	-	-
Stability, min	6.5	6.4	6.3	5.0	6.0	-	6.2	5.5	3.7	-	-	-
Mixing tolerance index, BU	45	41	45	59	43	-	49	52	72	-	-	-
EXTENSOGRAM (45 min pull)												
Area, cm2	67	60	68	47	75	-	94	77	57	-	-	-
Maximum height, BU	260	240	255	240	270	-	315	295	215	-	-	-
Extensibility, mm	185	178	178	137	193	-	204	180	179	-	-	-
ALVEOGRAM												
Strength (S), cm2	35.3	32.7	32.4	24.6	36.2	-	36.2	32.7	26.3	-	-	-
Stability (P), mm	84	84	84	65	92	-	79	79	75	-	-	-
Distensibility (L), mm	97	89	88	88	92	-	108	96	85	-	-	-
Configuration ratio (P/L)	0.87	0.94	0.96	0.74	1.00	-	0.73	0.83	0.88	-	-	-
MIXOGRAM												
Peak time, min	2.4	2.3	2.3	3.0	2.5	-	2.2	2.3	1.8	-	-	-
100g BAKING TEST												
Loaf volume, cm3	850	810	765	745	810	-	940	900	850	-	-	-
Evaluation	1	0	1	0	0	-	0	0	0	-	-	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

**SOUTH AFRICAN
IRRIGATION WHEAT
Vaal and Orange river area**

**MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(11) Vaalharts						(12) North-West Western Region					
Intake silos	Barkly-Wes Hartswater Jan Kemp Magogong Taung						Bloubank Buhmannsdrif Kameel Kraaipan Madibogo Mafikeng Mareetsane Piet Plessis Springbokpan Vergeleë Vryburg Vryhof					
WHEAT	ave	min	max	stdev			ave	min	max	stdev		
Protein (12% mb), %	11.17	10.10	12.50	0.74			11.08	9.80	11.70	0.87		
Falling number, sec	389	357	433	23.25			356	330	379	25.63		
1000 Kernel mass (13% mb), g	36.6	32.9	38.8	1.86			39.0	37.3	42.6	2.45		
Hectolitre mass (dirty), kg/hl	77.1	73.1	80.1	1.95			81.3	79.7	82.6	1.20		
Screenings (<1.8mm), %	3.19	2.29	4.99	0.98			2.02	1.04	4.64	1.75		
Total damaged kernels, %	0.46	0.16	0.92	0.25			0.32	0.24	0.40	0.09		
Number of samples	14						4					
CULTIVARS												
		CRN 826	44.4				SST 806	67.5				
cultivars		SST 806	29.7				SST 822	11.8				
with highest %		SST 876	6.1				SST 876	8.3				
occurrence		Baviaans	5.6				CRN 826	5.0				
		SST 825	3.3				Krokodil	4.3				
Number of samples	14						4					
MIXOGRAM (Quadromat)	ave	min	max	stdev			ave	min	max	stdev		
Peak time, min	2.7	2.3	3.0	0.23			2.5	2.0	3.5	0.67		
Tail height (6min), mm	46	43	51	1.83			46	45	48	1.50		
Number of samples	14						4					
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	77.2	77.1	77.0	-	76.5	-	-	76.3	-	-	72.7	-
FLOUR												
Protein (12% mb), %	12.0	10.7	10.1	-	10.6		-	10.8	-	-	9.0	-
Colour, KJ	-1.0	-1.4	-1.5	-	-1.1		-	-1.3	-	-	0.1	-
FARINOGRAM												
Water absorption (14% mb), %	61.2	58.8	58.2	-	59.0	-	-	62.5	-	-	58.7	-
Development time, min	4.8	3.8	3.5	-	3.3	-	-	4.0	-	-	1.5	-
Stability, min	6.3	5.9	5.6	-	6.3	-	-	5.2	-	-	4.6	-
Mixing tolerance index, BU	46	55	64	-	48	-	-	59	-	-	63	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	94	86	76	-	97	-	-	67	-	-	57	-
Maximum height, BU	315	330	315	-	345	-	-	245	-	-	270	-
Extensibility, mm	205	181	167	-	190	-	-	193	-	-	142	-
ALVEOGRAM												
Strength (S), cm ²	35.3	34.9	32.0	-	34.4	-	-	32.7	-	-	25.4	-
Stability (P), mm	71	63	60	-	65	-	-	75	-	-	67	-
Distensibility (L), mm	123	143	141	-	135	-	-	119	-	-	93	-
Configuration ratio (P/L)	0.58	0.44	0.43	-	0.48	-	-	0.63	-	-	0.72	-
MIXOGRAM												
Peak time, min	2.3	2.5	2.3	-	2.7	-	-	2.3	-	-	2.8	-
100g BAKING TEST												
Loaf volume, cm ³	980	815	805	-	790	-	-	850	-	-	685	-
Evaluation	0	1	0	-	2	-	-	0	-	-	2	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

**SOUTH AFRICAN
MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(14) North-West Southern Region				(15) North-West South-Eastern Region							
	Intake silos											
	Amalia Barberspan Delareyville Excelsior Geysdorp Hallat's Hope Migdol Nooitgedacht Schweizer-Reneke Taaibospan				Bloemhof Christiana Hertzogville Hoopstad Kingswood							
WHEAT	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	12.37	11.50	13.30	0.90	12.01	11.10	13.20	0.68				
Falling number, sec	346	335	364	15.72	300	200	384	59.26				
1000 Kernel mass (13% mb), g	37.4	36.3	39.2	1.57	35.7	33.7	38.8	1.58				
Hectolitre mass (dirty), kg/hl	80.0	79.9	80.2	0.17	79.7	78.0	82.1	1.22				
Screenings (<1.8mm), %	1.88	1.43	2.69	0.70	2.21	0.80	3.69	0.86				
Total damaged kernels, %	0.33	0.30	0.36	0.03	0.22	0.00	0.42	0.13				
Number of samples	3				13							
CULTIVARS												
	SST 806		45.3		PAN 3118		35.2					
cultivars	CRN 826		28.3		SST 806		17.9					
with highest %	SST 822		8.0		CRN 826		13.9					
occurrence	SST 876		4.3		PAN 3191		12.0					
	Krokodil		4.0		SST 876		5.1					
Number of samples	3				13							
MIXOGRAM (Quadromat)	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.4	2.4	2.5	0.06	2.9	2.3	3.4	0.37				
Tail height (6min), mm	46	46	46	0.00	50	46	53	1.93				
Number of samples	3				13							
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.5	76.9	-	-	-	-	75.2	67.5	-	73.6	74.6	-
FLOUR												
Protein (12% mb), %	11.7	10.8	-	-	-	-	11.5	10.4	-	9.9	11.1	-
Colour, KJ	-0.8	-1.3	-	-	-	-	-0.7	-1.1	-	-1.6	-1.4	-
FARINOGRAM												
Water absorption (14% mb), %	63.6	61.6	-	-	-	-	63.6	62.8	-	65.8	62.2	-
Development time, min	4.5	3.5	-	-	-	-	4.0	1.9	-	1.9	2.5	-
Stability, min	5.5	4.7	-	-	-	-	7.4	5.3	-	3.0	7.7	-
Mixing tolerance index, BU	58	78	-	-	-	-	38	44	-	69	28	-
EXTENSOGRAM (45 min pull)												
Area, cm2	77	82	-	-	-	-	79	74	-	94	101	-
Maximum height, BU	250	285	-	-	-	-	315	340	-	410	405	-
Extensibility, mm	211	198	-	-	-	-	178	153	-	168	173	-
ALVEOGRAM												
Strength (S), cm2	37.0	31.7	-	-	-	-	42.5	39.3	-	45.6	44.0	-
Stability (P), mm	79	71	-	-	-	-	97	114	-	144	99	-
Distensibility (L), mm	119	112	-	-	-	-	92	64	-	51	94	-
Configuration ratio (P/L)	0.66	0.63	-	-	-	-	1.05	1.79	-	2.84	1.05	-
MIXOGRAM												
Peak time, min	2.3	2.3	-	-	-	-	2.4	2.8	-	3.8	2.8	-
100g BAKING TEST												
Loaf volume, cm3	880	875	-	-	-	-	870	780	-	695	850	-
Evaluation	1	0	-	-	-	-	1	2	-	4	1	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

**SOUTH AFRICAN
MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(16) North-West Central Eastern Region						(17) North-West Central Northern Region (Ottosdal)					
	Intake silos											
	Bamboesspruit Klerksdorp Leeudoringstad Makwassie Regina Strydpoort Wolmaransstad						Bospoort Hartbeesfontein Kleinwarts Melliodora Ottosdal Rostrataville Vermaas Werda					
WHEAT	ave	min	max	stdev			ave	min	max	stdev		
Protein (12% mb), %	12.40	-	-	-			11.43	10.80	13.00	1.06		
Falling number, sec	329	-	-	-			365	332	405	36.32		
1000 Kernel mass (13% mb), g	34.7	-	-	-			36.3	30.6	39.8	4.39		
Hectolitre mass (dirty), kg/hl	78.7	-	-	-			76.0	70.2	78.7	3.93		
Screenings (<1.8mm), %	2.56	-	-	-			3.41	1.99	6.72	2.22		
Total damaged kernels, %	0.54	-	-	-			0.78	0.26	1.44	0.49		
Number of samples	1						4					
CULTIVARS												
	PAN 3118			38.0			SST 806			63.0		
cultivars	SST 806			30.0			Krokodil			15.5		
with highest %	CRN 826			13.0			CRN 826			12.5		
occurrence	PAN 3191			12.0			SST 876			7.8		
	PAN 3349			7.0			SST 825			1.3		
Number of samples	1						4					
MIXOGRAM (Quadromat)	ave	min	max	stdev			ave	min	max	stdev		
Peak time, min	2.5	-	-	-			2.7	2.3	3.3	0.43		
Tail height (6min), mm	51	-	-	-			47	45	49	2.06		
Number of samples	1						4					
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.7	-	-	-	-	-	76.7	-	77.3	-	72.4	-
FLOUR												
Protein (12% mb), %	12.1	-	-	-	-	-	12.7	-	10.2	-	10.2	-
Colour, KJ	-1.3	-	-	-	-	-	-1.2	-	-1.1	-	-0.2	-
FARINOGRAM												
Water absorption (14% mb), %	62.4	-	-	-	-	-	62.5	-	59.6	-	59.3	-
Development time, min	5.2	-	-	-	-	-	5.2	-	3.5	-	2.2	-
Stability, min	8.4	-	-	-	-	-	5.8	-	4.8	-	7.0	-
Mixing tolerance index, BU	42	-	-	-	-	-	55	-	64	-	33	-
EXTENSOGRAM (45 min pull)												
Area, cm2	97	-	-	-	-	-	98	-	63	-	67	-
Maximum height, BU	345	-	-	-	-	-	315	-	255	-	275	-
Extensibility, mm	199	-	-	-	-	-	218	-	162	-	164	-
ALVEOGRAM												
Strength (S), cm2	43.3	-	-	-	-	-	37.3	-	28.1	-	31.3	-
Stability (P), mm	89	-	-	-	-	-	74	-	69	-	70	-
Distensibility (L), mm	110	-	-	-	-	-	131	-	111	-	117	-
Configuration ratio (P/L)	0.80	-	-	-	-	-	0.57	-	0.62	-	0.60	-
MIXOGRAM												
Peak time, min	2.5	-	-	-	-	-	2.0	-	2.3	-	3.2	-
100g BAKING TEST												
Loaf volume, cm3	910	-	-	-	-	-	925	-	830	-	825	-
Evaluation	1	-	-	-	-	-	1	-	0	-	0	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN MAINLY IRRIGATION North-West Province

PRODUCTION REGION	(19) North-West Central Region (Lichtenburg)				(20) North-West Eastern Region							
	Intake silos											
	Grootpan Halfpad Hibernia Lichtenburg Lottiehalte Lusthof				Battery Boons Brits Derby Koster Rustenburg Swartruggens Syferbult							
WHEAT	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	11.75	10.00	13.70	1.05	10.67	8.50	12.40	1.12				
Falling number, sec	312	221	389	52.98	360	222	468	50.16				
1000 Kernel mass (13% mb), g	39.4	29.2	46.8	5.17	38.3	34.2	43.8	2.77				
Hectolitre mass (dirty), kg/hl	78.8	77.3	81.2	1.21	78.7	74.2	81.2	1.82				
Screenings (<1.8mm), %	1.43	0.80	2.85	0.64	1.73	0.85	4.11	0.74				
Total damaged kernels, %	0.69	0.08	1.64	0.44	1.39	0.00	13.56	2.93				
Number of samples	11				25							
CULTIVARS												
	SST 806		41.7		SST 806		37.4					
cultivars	CRN 826		23.9		Olifants		18.3					
with highest %	SST 876		13.3		CRN 826		12.9					
occurrence	Krokodil		9.1		Krokodil		10.2					
	Duzi		6.7		Duzi		5.6					
Number of samples	11				25							
MIXOGRAM (Quadromat)	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.4	2.0	2.8	0.27	3.0	2.2	5.3	0.77				
Tail height (6min), mm	46	42	50	2.88	47	41	53	3.10				
Number of samples	11				25							
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.6	75.6	78.0	-	-	-	76.8	76.7	75.9	75.9	75.5	76.8
FLOUR												
Protein (12% mb), %	11.8	10.3	9.1	-	-	-	11.5	10.7	10.0	8.7	9.7	9.0
Colour, KJ	-1.2	-1.4	-2.2	-	-	-	-1.4	-0.4	-1.2	-1.1	-1.0	-0.6
FARINOGRAM												
Water absorption (14% mb), %	63.3	61.0	58.7	-	-	-	64.0	61.7	59.8	57.5	59.3	57.8
Development time, min	4.7	3.9	3.0	-	-	-	4.5	4.0	2.5	1.8	3.2	1.9
Stability, min	6.0	5.5	4.4	-	-	-	6.1	6.6	5.3	4.8	5.9	5.4
Mixing tolerance index, BU	51	62	76	-	-	-	52	47	47	58	60	56
EXTENSOGRAM (45 min pull)												
Area, cm ²	93	76	67	-	-	-	87	80	74	74	78	90
Maximum height, BU	345	285	280	-	-	-	305	330	315	325	325	355
Extensibility, mm	186	183	162	-	-	-	200	171	161	149	165	174
ALVEOGRAM												
Strength (S), cm ²	40.4	36.1	23.7	-	-	-	41.4	41.7	33.9	30.1	30.7	33.2
Stability (P), mm	82	75	65	-	-	-	89	91	80	70	66	66
Distensibility (L), mm	122	130	94	-	-	-	111	106	101	99	109	117
Configuration ratio (P/L)	0.67	0.58	0.68	-	-	-	0.81	0.86	0.79	0.71	0.61	0.57
MIXOGRAM												
Peak time, min	2.3	2.3	2.3	-	-	-	2.3	2.6	2.5	2.7	2.3	3.0
100g BAKING TEST												
Loaf volume, cm ³	910	855	785	-	-	-	955	880	820	765	850	800
Evaluation	0	0	0	-	-	-	0	0	0	0	0	0

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN
SUMMER RAINFALL WHEAT (AND IRRIGATION)
Free State Province (Central)

PRODUCTION REGION	(21) Free State North-Western Region (Viljoenskroon)					(26) Free State South-Eastern Region (Senekal)						
	Intake silos											
	Attie					Arlington						
	Groenebloem					Kaallaagte						
	Heuningspruit					Libertas						
	Koppies					Marquard						
	Rooiwal					Meets						
	Vierfontein					Monte Video						
	Viljoenskroon					Senekal						
	Vredefort					Steynsrus						
	Weiveld											
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.23	9.50	14.40	1.24		12.17	10.60	14.20	1.15			
Falling number, sec	305	191	385	57.70		320	214	382	47.05			
1000 Kernel mass (13% mb), g	31.8	26.8	34.5	2.23		36.3	31.4	39.9	2.00			
Hectolitre mass (dirty), kg/hl	77.5	74.5	79.2	1.73		79.5	74.8	82.3	2.61			
Screenings (<1.8mm), %	2.73	0.94	8.38	1.95		1.64	0.34	3.10	0.74			
Total damaged kernels, %	0.45	0.08	1.06	0.27		0.33	0.06	1.20	0.28			
Number of samples	12					18						
CULTIVARS												
	Elands 36.2					Elands 38.0						
cultivars	PAN 3349 20.3					PAN 3118 14.6						
with highest %	SST 806 12.1					Gariep 11.7						
occurrence	SST 876 8.3					PAN 3377 7.7						
	PAN 3118 6.5					PAN 3349 4.6						
Number of samples	12					18						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.9	2.2	3.5	0.41		3.0	2.4	4.0	0.49			
Tail height (6min), mm	51	41	57	3.63		53	47	62	3.81			
Number of samples	12					18						
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.8	74.2	74.9	-	74.4	-	74.5	74.6	75.2	75.1	-	-
FLOUR												
Protein (12% mb), %	11.9	10.1	12.2	-	12.0	-	12.7	10.8	10.5	11.0	-	-
Colour, KJ	-0.3	-1.0	0.6	-	-0.2	-	-1.2	-1.0	-1.3	-1.6	-	-
FARINOGRAM												
Water absorption (14% mb), %	61.8	62.0	61.3	-	61.3	-	63.9	62.2	59.8	66.9	-	-
Development time, min	4.5	1.7	5.0	-	4.4	-	5.7	4.7	3.7	2.4	-	-
Stability, min	7.3	6.8	7.5	-	6.1	-	8.2	7.7	6.1	5.6	-	-
Mixing tolerance index, BU	50	33	48	-	54	-	48	45	56	50	-	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	100	98	106	-	89	-	118	88	99	107	-	-
Maximum height, BU	365	410	370	-	345	-	380	370	385	415	-	-
Extensibility, mm	185	167	208	-	180	-	212	167	179	184	-	-
ALVEOGRAM												
Strength (S), cm ²	45.4	43.6	43.7	-	36.9	-	50.0	44.8	38.2	63.9	-	-
Stability (P), mm	87	111	75	-	75	-	96	102	76	161	-	-
Distensibility (L), mm	112	74	126	-	113	-	108	86	114	64	-	-
Configuration ratio (P/L)	0.78	1.51	0.59	-	0.66	-	0.89	1.19	0.66	2.52	-	-
MIXOGRAM												
Peak time, min	2.7	3.2	2.5	-	2.5	-	2.7	3.0	2.8	3.8	-	-
100g BAKING TEST												
Loaf volume, cm ³	835	715	1000	-	800	-	855	775	900	710	-	-
Evaluation	3	3	0	-	4	-	3	2	0	5	-	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN

SUMMER RAINFALL WHEAT (AND IRRIGATION) Free State Province (Central)

Free State Province (South-Western)

PRODUCTION REGION

(27)
Free State
Northern Region

(24)
Free State
Central Region

Intake silos

Gottenburg
Heilbron
Hoogte
Mooigeleë
Petrus Steyn
Wolwehoek

Bloemfontein
Brandfort
De Brug
Geneva
Hennenman
Koffiefontein
Kroonstad
Petrusburg
Theunissen
Van Tonder
Welgeleë
Winburg

WHEAT													
	ave	min	max	stdev		ave	min	max	stdev				
Protein (12% mb), %	12.70	11.10	13.60	0.87		11.66	8.30	14.34	1.49				
Falling number, sec	346	320	366	18.63		327	235	457	49.84				
1000 Kernel mass (13% mb), g	35.5	33.1	38.7	1.68		33.9	29.7	39.3	2.47				
Hectolitre mass (dirty), kg/hl	79.8	77.7	81.9	1.66		79.0	75.7	81.4	1.37				
Screenings (<1.8mm), %	1.07	0.06	2.79	0.99		2.27	0.95	4.81	0.79				
Total damaged kernels, %	0.43	0.32	0.58	0.10		0.39	0.00	0.92	0.21				
Number of samples	8					27							
CULTIVARS													
	Elands		62.1			Gariep		24.0					
cultivars	Gariep		6.3			Scheepers 69		11.4					
with highest %	Tugela DN		5.1			PAN 3377		10.6					
occurrence	PAN 3120		4.5			SST 806		8.1					
	SST 399		3.3			Tugela DN		6.9					
Number of samples	8					27							
MIXOGRAM (Quadromat)													
	ave	min	max	stdev		ave	min	max	stdev				
Peak time, min	2.7	2.0	3.0	0.39		2.9	1.5	3.7	0.51				
Tail height (6min), mm	51	48	55	2.53		49	33	60	5.90				
Number of samples	8					27							
BÜHLER EXTRACTION, %													
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW	
	75.1	75.7	-	-	-	-	73.4	74.6	73.8	72.3	73.3	-	
FLOUR													
Protein (12% mb), %	12.0	10.4	-	-	-	-	12.3	10.6	9.5	8.5	9.9	-	
Colour, KJ	-1.3	-1.2	-	-	-	-	-1.1	-1.3	-1.6	-1.7	-1.2	-	
FARINOGRAM													
Water absorption (14% mb), %	64.5	61.0	-	-	-	-	63.3	62.4	59.7	59.1	59.8	-	
Development time, min	4.8	4.5	-	-	-	-	4.4	3.7	2.3	2.5	2.0	-	
Stability, min	7.0	7.7	-	-	-	-	7.5	5.9	5.2	4.5	5.0	-	
Mixing tolerance index, BU	41	51	-	-	-	-	46	53	55	67	51	-	
EXTENSOGRAM (45 min pull)													
Area, cm2	102	85	-	-	-	-	110	81	67	67	65	-	
Maximum height, BU	330	375	-	-	-	-	385	335	330	325	305	-	
Extensibility, mm	200	160	-	-	-	-	189	164	141	144	147	-	
ALVEOGRAM													
Strength (S), cm2	46.2	40.5	-	-	-	-	53.2	42.0	34.4	27.7	34.6	-	
Stability (P), mm	103	97	-	-	-	-	109	97	90	80	82	-	
Distensibility (L), mm	93	84	-	-	-	-	97	91	78	75	96	-	
Configuration ratio (P/L)	1.10	1.15	-	-	-	-	1.13	1.07	1.15	1.07	0.85	-	
MIXOGRAM													
Peak time, min	2.3	2.8	-	-	-	-	2.8	2.7	3.0	2.3	2.7	-	
100g BAKING TEST													
Loaf volume, cm3	875	800	-	-	-	-	890	810	715	695	825	-	
Evaluation	2	1	-	-	-	-	2	1	2	1	0	-	

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN
SUMMER RAINFALL WHEAT (AND IRRIGATION)
Free State Province (North-Western)

PRODUCTION REGION	(22) Free-State North-Western Region (Bothaville)				(23) Free-State North-Western Region (Bultfontein)							
	Intake silos											
	Allanridge Bothaville Mirage Odendaalsrus Schoonspruit Schuttesdraai				Bultfontein Losdoorns Protespan Tierfontein Wesselsbron Willemsrust							
WHEAT	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	13.34	11.50	15.00	1.76	11.83	9.40	13.80	1.33				
Falling number, sec	345	325	374	25.54	322	248	400	40.31				
1000 Kernel mass (13% mb), g	31.5	29.3	35.2	3.20	36.8	33.8	38.7	1.42				
Hectolitre mass (dirty), kg/hl	77.3	76.8	78.0	0.62	79.6	76.0	81.8	1.38				
Screenings (<1.8mm), %	2.01	1.90	2.14	0.12	1.81	0.63	4.78	1.13				
Total damaged kernels, %	0.29	0.18	0.48	0.16	0.67	0.00	2.16	0.61				
Number of samples	3				17							
CULTIVARS												
	PAN 3118		34.7		PAN 3118		27.0					
cultivars	Gariep		26.0		SST 806		19.4					
with highest %	PAN 3120		18.0		Elands		10.6					
occurrence	PAN 3349		17.0		PAN 3120		7.1					
	SST 399		2.3		PAN 3349		6.9					
Number of samples	3				17							
MIXOGRAM (Quadromat)	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.6	2.5	2.8	0.17	2.9	2.2	4.3	0.60				
Tail height (6min), mm	50	49	52	1.73	50	44	55	3.44				
Number of samples	3				17							
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.9	74.2	-	-	-	-	74.6	76.2	74.4	-	73.1	-
FLOUR												
Protein (12% mb), %	13.0	10.5	-	-	-	-	12.3	10.8	9.2	-	8.7	-
Colour, KJ	-0.6	-1.1	-	-	-	-	-1.3	-1.4	-1.3	-	-1.7	-
FARINOGRAM												
Water absorption (14% mb), %	64.1	61.5	-	-	-	-	63.0	61.6	62.8	-	63.3	-
Development time, min	5.0	2.4	-	-	-	-	4.5	3.8	1.7	-	1.5	-
Stability, min	9.2	6.1	-	-	-	-	8.7	5.6	3.1	-	2.1	-
Mixing tolerance index, BU	33	48	-	-	-	-	32	56	70	-	81	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	91	85	-	-	-	-	99	75	93	-	64	-
Maximum height, BU	330	390	-	-	-	-	375	310	410	-	325	-
Extensibility, mm	192	155	-	-	-	-	184	168	156	-	134	-
ALVEOGRAM												
Strength (S), cm ²	48.9	44.0	-	-	-	-	50.0	37.3	50.6	-	33.3	-
Stability (P), mm	97	110	-	-	-	-	98	84	131	-	121	-
Distensibility (L), mm	109	77	-	-	-	-	107	101	67	-	46	-
Configuration ratio (P/L)	0.89	1.44	-	-	-	-	0.91	0.83	1.97	-	2.64	-
MIXOGRAM												
Peak time, min	2.5	2.8	-	-	-	-	2.8	2.3	4.0	-	2.8	-
100g BAKING TEST												
Loaf volume, cm ³	880	785	-	-	-	-	865	835	685	-	660	-
Evaluation	3	2	-	-	-	-	2	0	3	-	3	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN
SUMMER RAINFALL WHEAT (AND IRRIGATION)
Free State Province (Eastern)

PRODUCTION REGION	(25) Free State South-Eastern Region (Bethlehem)					(28) Free State Eastern Region						
	Intake silos											
	Bethlehem					Afrikaskop						
	Clocolan					Ascent						
	De Wetsdorp					Cornelia						
	Ficksburg					Daniëlsrus						
	Fouriesburg					Eeram						
	Marseilles					Frankfort						
	Modderpoort					Harrismith						
	Slabberts					Jim Fouché						
	Tweespruit					Kransfontein						
	Westminster					Memel						
	Zastron					Reitz						
						Tweeling						
						Villiers						
						Vrede						
						Warden						
						Windfield						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	10.79	8.80	14.00	1.25		11.97	10.10	14.20	0.94			
Falling number, sec	335	280	407	34.98		340	143	420	53.11			
1000 Kernel mass (13% mb), g	38.1	34.4	42.5	1.78		36.4	32.0	41.8	2.72			
Hectolitre mass (dirty), kg/hl	78.4	74.9	83.1	1.78		78.4	72.9	83.6	2.11			
Screenings (<1.8mm), %	1.44	0.05	3.28	0.78		0.99	0.18	3.02	0.60			
Total damaged kernels, %	0.43	0.00	1.24	0.24		0.54	0.00	5.16	0.85			
Number of samples	39					33						
CULTIVARS												
			Elands	35.0				Elands	46.1			
cultivars			Gariiep	23.0				SST 806	14.2			
with highest %			SST 399	10.0				Kariega	6.5			
occurrence			Tugela DN	4.3				SST 399	4.6			
			Betta DN	4.0				PAN 3349	4.2			
Number of samples	39					33						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	3.3	2.3	4.5	0.59		3.0	2.0	4.3	0.57			
Tail height (6min), mm	49	38	60	4.05		51	42	57	3.07			
Number of samples	39					33						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	75.0	74.7	73.7	74.0	74.1	-	74.7	75.4	75.1	-	-	-
FLOUR												
Protein (12% mb), %	12.2	10.6	9.9	8.6	8.0	-	11.8	10.9	9.7	-	-	-
Colour, KJ	-1.2	-1.5	-1.2	-1.6	-2.0	-	-0.9	-1.1	-1.5	-	-	-
FARINOGRAM												
Water absorption (14% mb), %	61.9	61.0	60.4	58.8	55.9	-	62.8	61.3	59.9	-	-	-
Development time, min	4.5	2.4	2.5	1.5	1.3	-	4.5	4.7	4.3	-	-	-
Stability, min	6.8	7.0	7.0	3.4	3.6	-	8.0	7.6	6.8	-	-	-
Mixing tolerance index, BU	54	34	35	65	72	-	41	46	55	-	-	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	104	95	76	75	71	-	106	89	87	-	-	-
Maximum height, BU	360	415	400	410	375	-	390	365	370	-	-	-
Extensibility, mm	198	160	136	128	131	-	192	171	161	-	-	-
ALVEOGRAM												
Strength (S), cm ²	42.5	40.1	38.4	28.3	25.5	-	46.5	44.2	38.4	-	-	-
Stability (P), mm	84	97	102	97	71	-	97	92	88	-	-	-
Distensibility (L), mm	110	81	71	50	72	-	98	100	96	-	-	-
Configuration ratio (P/L)	0.76	1.19	1.44	1.92	0.98	-	0.99	0.92	0.91	-	-	-
MIXOGRAM												
Peak time, min	2.3	3.2	3.3	3.3	3.3	-	2.8	2.8	2.8	-	-	-
100g BAKING TEST												
Loaf volume, cm ³	870	720	675	580	590	-	880	865	805	-	-	-
Evaluation	2	4	4	6	4	-	1	0	0	-	-	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN SUMMER RAINFALL WHEAT AND IRRIGATION Mpumalanga

PRODUCTION REGION	(30) Mpumalanga Eastern Region				(32) Mpumalanga Western Region							
	Intake silos											
	Amersfoort				Argent							
	Badplaas				Dryden							
	Carolina				Endicott							
	Davel				Elof							
	Ermelo				Hawerklip							
	Estancia				Kendal							
	Lothair				Ogies							
	Maizefield											
	Mkondo											
	Morgenzon											
	Overvaal											
	Panbult											
WHEAT												
	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	11.60	10.80	12.20	0.58	11.96	10.90	12.90	0.73				
Falling number, sec	390	384	395	4.50	319	238	396	55.75				
1000 Kernel mass (13% mb), g	40.0	39.0	42.0	1.40	38.5	35.6	41.6	1.93				
Hectolitre mass (dirty), kg/hl	82.7	81.9	83.2	0.57	79.1	76.4	80.0	1.27				
Screenings (<1.8mm), %	1.71	1.18	2.12	0.40	0.88	0.57	1.04	0.16				
Total damaged kernels, %	0.25	0.00	0.42	0.18	1.13	0.16	5.70	2.03				
Number of samples	4				7							
CULTIVARS												
	SST 806		62.8		SST 806		32.0					
cultivars	SST 822		7.8		CRN 826		29.0					
with highest %	SST 876		6.8		Kariega		13.6					
occurrence	Olifants		6.0		SST 876		5.9					
	Baviaans		5.3		Olifants		4.3					
Number of samples	4				7							
MIXOGRAM (Quadromat)												
	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.0	1.8	2.2	0.21	2.7	2.0	3.2	0.37				
Tail height (6min), mm	42	42	43	0.50	51	50	52	0.90				
Number of samples	4				7							
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.2	76.4	77.6	-	-	-	75.8	77.2	76.8	-	-	-
FLOUR												
Protein (12% mb), %	11.6	11.2	10.2	-	-	-	11.7	10.7	10.2	-	-	-
Colour, KJ	-0.7	-1.7	-2.2	-	-	-	-1.3	-1.6	-1.6	-	-	-
FARINOGRAM												
Water absorption (14% mb), %	64.5	64.3	61.6	-	-	-	62.6	61.2	59.7	-	-	-
Development time, min	4.2	3.7	3.0	-	-	-	4.5	4.9	3.7	-	-	-
Stability, min	5.8	4.3	4.5	-	-	-	8.5	8.1	7.7	-	-	-
Mixing tolerance index, BU	51	59	57	-	-	-	35	46	40	-	-	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	60	65	58	-	-	-	104	95	101	-	-	-
Maximum height, BU	220	235	235	-	-	-	340	350	340	-	-	-
Extensibility, mm	189	183	167	-	-	-	210	197	205	-	-	-
ALVEOGRAM												
Strength (S), cm ²	32.3	35.9	28.9	-	-	-	44.5	40.7	36.7	-	-	-
Stability (P), mm	80	85	75	-	-	-	85	79	68	-	-	-
Distensibility (L), mm	100	105	96	-	-	-	122	120	134	-	-	-
Configuration ratio (P/L)	0.79	0.81	0.79	-	-	-	0.70	0.66	0.51	-	-	-
MIXOGRAM												
Peak time, min	2.0	1.7	2.0	-	-	-	2.5	2.7	2.3	-	-	-
100g BAKING TEST												
Loaf volume, cm ³	905	870	820	-	-	-	920	845	820	-	-	-
Evaluation	0	0	0	-	-	-	0	0	0	-	-	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN SUMMER RAINFALL WHEAT AND IRRIGATION Mpumalanga and Gauteng Provinces

PRODUCTION REGION	(33) Mpumalanga Northern Region						(34) Gauteng					
Intake silos	Driefontein Lydenburg Marble Hall Middelburg Stoffelberg Pan Arnot Wonderfontein						Bloekomspruit Bronkhorstspruit Glenroy Goeie Hoek Kaalfontein Middelvlei Nigel Oberholzer Raathsvlei					
WHEAT												
	ave	min	max	stdev								
Protein (12% mb), %	11.30	9.70	12.70	1.03	ave	min	max	stdev				
Falling number, sec	357	244	406	45.81	375	255	470	61.54				
1000 Kernel mass (13% mb), g	38.8	34.8	42.0	2.22	38.9	29.0	44.4	3.63				
Hectolitre mass (dirty), kg/hl	78.8	73.9	81.3	2.05	77.9	74.0	81.0	2.05				
Screenings (<1.8mm), %	2.72	1.43	5.98	1.30	1.43	0.44	5.60	1.23				
Total damaged kernels, %	0.62	0.16	0.88	0.23	0.74	0.10	1.70	0.49				
Number of samples	11						17					
CULTIVARS												
	SST 806 29.7						SST 806 32.9					
cultivars	CRN 826 20.8						Olifants 22.1					
with highest %	SST 876 18.4						SST 876 16.7					
occurrence	Olifants 9.4						CRN 826 14.9					
	SST 835 7.8						SST 825 9.7					
Number of samples	11						17					
MIXOGRAM (Quadromat)												
	ave	min	max	stdev								
Peak time, min	2.9	2.3	3.5	0.41	ave	min	max	stdev				
Tail height (6min), mm	47	45	52	2.06	47	40	55	4.67				
Number of samples	11						17					
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.0	76.3	76.8	75.2	77.2	-	76.3	76.8	76.9	-	-	-
FLOUR												
Protein (12% mb), %	11.7	10.8	9.3	8.8	10.4	-	12.6	10.5	9.5	-	-	-
Colour, KJ	-1.5	-1.1	-0.9	-0.8	-1.4	-	-0.8	-1.3	-1.4	-	-	-
FARINOGRAM												
Water absorption (14% mb), %	62.7	61.3	58.7	57.4	59.8	-	64.3	62.1	60.7	-	-	-
Development time, min	5.2	4.0	1.9	1.5	4.7	-	4.5	3.2	2.0	-	-	-
Stability, min	6.7	6.0	5.6	4.4	8.1	-	6.2	5.0	6.8	-	-	-
Mixing tolerance index, BU	51	50	47	69	45	-	55	54	33	-	-	-
EXTENSOGRAM (45 min pull)												
Area, cm ²	95	70	70	75	100	-	90	72	79	-	-	-
Maximum height, BU	345	295	290	315	425	-	270	260	330	-	-	-
Extensibility, mm	190	170	163	160	165	-	237	184	163	-	-	-
ALVEOGRAM												
Strength (S), cm ²	37.5	33.3	27.8	26.3	40.5	-	42.5	32.1	36.7	-	-	-
Stability (P), mm	85	77	67	58	85	-	77	73	86	-	-	-
Distensibility (L), mm	100	100	95	110	103	-	140	110	96	-	-	-
Configuration ratio (P/L)	0.85	0.77	0.71	0.53	0.82	-	0.55	0.67	0.90	-	-	-
MIXOGRAM												
Peak time, min	2.2	2.2	2.7	2.8	2.9	-	2.1	2.0	2.8	-	-	-
100g BAKING TEST												
Loaf volume, cm ³	905	870	810	760	815	-	960	880	845	-	-	-
Evaluation	0	0	0	0	0	-	0	0	0	-	-	-

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

SOUTH AFRICAN

SUMMER RAINFALL WHEAT (AND IRRIGATION)

Limpopo and KwaZulu-Natal Provinces

PRODUCTION REGION	(35)					
	Limpopo					
Intake silos	Alma Crecy Immerpan Lehau Naboomspruit Northam Nutfield Nylstroom Pienaarsrivier Pietersburg Potgietersrus Roedtan Settlers Tzaneen Vaalwater Warmbad					
WHEAT						
	ave	min	max	stdev		
Protein (12% mb), %	11.64	9.77	13.60	1.00		
Falling number, sec	352	151	439	58.40		
1000 Kernel mass (13% mb), g	35.7	26.4	41.4	3.75		
Hectolitre mass (dirty), kg/hl	79.4	74.0	81.8	1.87		
Screenings (<1.8mm), %	2.48	0.89	11.11	2.03		
Total damaged kernels, %	0.41	0.00	2.54	0.51		
Number of samples	22					
CULTIVARS						
	SST 806		49.7			
cultivars	CRN 826		14.3			
with highest %	SST 825		12.6			
occurrence	SST 876		12.0			
	Olifants		4.7			
Number of samples	22					
MIXOGRAM (Quadromat)						
	ave	min	max	stdev		
Peak time, min	2.9	2.3	3.8	0.36		
Tail height (6min), mm	50	41	56	3.94		
Number of samples	22					
BÜHLER EXTRACTION, %						
	B1	B2	B3	B4	UT	COW
	73.5	74.8	73.3	75.9	76.7	67.8
FLOUR						
Protein (12% mb), %	12.1	10.8	10.0	9.0	10.7	11.5
Colour, KJ	-1.4	-1.3	-1.3	-2.0	-0.4	-1.4
FARINOGRAM						
Water absorption (14% mb), %	63.5	63.3	62.3	59.1	61.5	65.1
Development time, min	6.0	4.2	2.0	2.4	2.3	2.8
Stability, min	10.4	6.9	6.5	4.0	5.4	6.9
Mixing tolerance index, BU	35	42	35	78	57	38
EXTENSOGRAM (45 min pull)						
Area, cm ²	143	79	76	67	109	106
Maximum height, BU	445	330	335	270	355	410
Extensibility, mm	215	169	158	161	222	175
ALVEOGRAM						
Strength (S), cm ²	51.7	39.0	36.9	25.8	38.7	42.8
Stability (P), mm	102	97	101	72	70	124
Distensibility (L), mm	108	87	74	84	131	68
Configuration ratio (P/L)	0.95	1.12	1.37	0.85	0.54	1.82
MIXOGRAM						
Peak time, min	2.4	2.3	2.7	2.5	2.8	2.8
100g BAKING TEST						
Loaf volume, cm ³	900	830	770	770	845	775
Evaluation	1	1	1	0	0	4

RHEOLOGICAL GRAPHS PER PRODUCTION REGION

MIXOGRAM

FARINOGRAM

EXTENSOGRAM

ALVEOGRAM

WEIGHTED AVERAGE RESULTS FOR THE LAST THREE SEASONS

Region	2006/2007					2005/2006					2004/2005				
	Protein (12% mb), %	FN, sec	Hlm, kg/hl	Mixo PT, min	<i>n</i>	Protein (12% mb), %	FN, sec	Hlm, kg/hl	Mixo PT, min	<i>n</i>	Protein (12% mb), %	FN, sec	Hlm, kg/hl	Mixo PT, min	<i>n</i>
1	-	-	-	-	-	11.9	413	79.0	3.0	3	12.4	387	77.4	2.8	3
2	11.3	393	77.2	2.6	18	11.8	427	76.3	2.9	18	13.3	390	76.4	2.8	19
3	11.1	362	77.7	2.5	65	11.9	406	77.8	2.7	72	13.6	378	76.7	2.9	62
4	10.4	353	78.9	2.7	17	11.2	398	79.0	2.7	48	12.5	367	79.0	2.8	51
5	11.3	366	76.3	2.5	27	11.0	385	80.1	2.5	19	12.1	349	77.5	2.5	40
6	11.1	359	76.4	2.9	33	11.4	383	80.3	2.6	22	11.6	377	78.3	2.9	21
7	-	-	-	-	-	-	-	-	-	-	11.8	414	82.0	2.3	1
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	11.9	387	80.8	2.2	27	11.3	412	79.7	2.3	28	11.9	433	79.4	2.6	16
11	11.2	389	77.1	2.7	14	11.7	382	78.5	2.6	9	12.0	419	78.9	2.6	11
12	11.1	356	81.3	2.5	4	12.5	375	79.0	2.7	4	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	12.4	346	80.0	2.4	3	13.7	342	75.7	2.5	5	13.2	390	76.7	2.6	5
15	12.0	300	79.7	2.9	13	14.1	312	79.1	2.8	2	13.2	368	79.2	2.5	6
16	12.4	329	78.7	2.5	1	13.4	314	78.3	2.6	3	-	-	-	-	-
17	11.4	365	76.0	2.7	4	12.5	387	78.6	2.8	6	10.9	381	80.5	2.5	3
18	-	-	-	-	-	12.6	385	78.1	2.9	4	11.2	381	78.7	3.0	4
19	11.8	312	78.8	2.4	11	12.3	358	77.1	2.8	11	11.6	376	78.0	2.6	12
20	10.7	360	78.7	3.0	25	11.3	376	79.2	2.9	24	11.1	388	79.7	2.9	28
21	12.2	305	77.5	2.9	12	14.0	350	78.3	3.0	8	13.4	366	77.7	2.9	10
22	13.3	345	77.3	2.6	3	15.4	334	76.8	3.3	7	15.1	400	75.4	2.8	6
23	11.8	322	79.6	2.9	17	14.4	332	77.7	3.0	13	14.1	409	77.0	3.0	15
24	11.7	327	79.0	2.9	27	14.7	340	78.3	2.9	27	14.8	375	76.2	3.0	16
25	10.8	335	78.4	3.3	39	12.8	332	77.6	3.1	25	14.0	375	76.2	3.4	24
26	12.2	320	79.5	3.0	18	14.9	328	76.7	3.1	18	15.0	371	76.0	3.4	26
27	12.7	346	79.8	2.7	8	14.9	267	77.0	3.5	8	15.7	348	75.8	3.5	8
28	12.0	340	78.4	3.0	33	12.9	336	77.4	3.1	31	14.9	332	76.4	3.5	29
29	-	-	-	-	-	-	-	-	-	-	15.5	336	76.0	3.3	1
30	11.6	390	82.7	2.0	4	12.6	401	76.9	2.8	5	13.5	291	75.9	2.9	4
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	12.0	319	79.1	2.7	7	13.0	362	77.9	2.6	9	13.4	400	75.7	2.3	3
33	11.3	357	78.8	2.9	11	12.0	417	79.1	3.0	8	11.6	408	80.2	2.5	17
34	11.8	375	77.9	2.6	17	12.6	415	78.6	2.9	11	12.4	437	78.9	3.5	5
35	11.6	352	79.4	2.9	22	12.4	444	78.6	2.6	17	11.4	384	79.9	2.5	26
36	-	-	-	-	-	12.9	294	77.4	2.8	15	12.8	408	77.4	2.9	8
Ave.	11.4	351	78.4	2.8	480	12.4	375	78.2	2.8	480	13.0	377	77.7	2.9	480

BREAD WHEAT GRADING TABLE 2006/2007

Grade	Minimum			Maximum percentage permissible deviation (m/m)									
				A	B	C	D	E	F	G	H	I	J
	Hectolitre mass, kg	Falling number, seconds	Protein content, %	Heavily frost damaged kernels	Field fungi	Storage fungi	Screenings	Other grain and unthreshed ears	Gravel, stones, turf and glass	Foreign matter plus F	Heat damaged kernels	Damaged kernels plus H	Combined deviations (D+E+G+I)
Grade 1	77	220	12	5	2	0.5	3	1	0.5	1	0.5	2	5
Grade 2	76	220	11	5	2	0.5	3	1	0.5	1	0.5	2	5
Grade 3	74	220	10	5	2	0.5	3	1	0.5	1	0.5	2	5
Grade 4	72	200	9	5	2	0.5	3	1	0.5	1	0.5	2	5
Utility grade	70	150	8	10	2	0.5	10	4	0.5	3	0.5	5	10
Other Wheat	<70	<150	<8	>10	>2	>0.5	>10	>4	>0.5	>3	>0.5	>5	>10
Minimum size of working samples	1 kg	300 g clean	Apparatus instructions	25 g sifted	25 g sifted	25 g sifted	500 g unsifted	50 g sifted	100 g sifted	100 g sifted	100 g sifted	25 g sifted	-

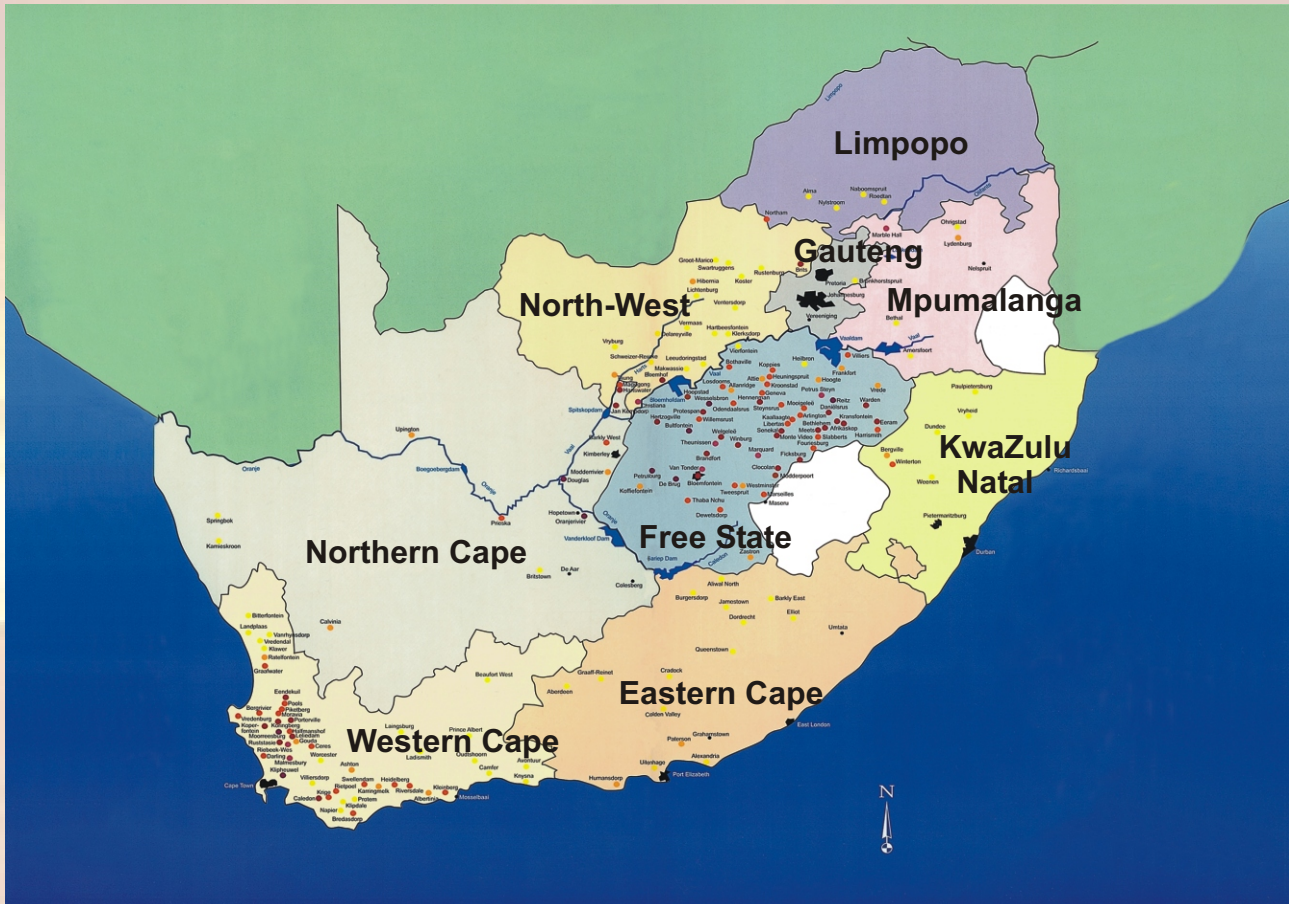
MYCOTOXIN RESULTS FOR THE 2006/2007 SEASON

Region	Class and Grade	Aflatoxin ppb LOD < 5.0	Deoxynivalenol ppm LOD < 0.50	Ochratoxin ppb LOD = 0.47
2	B3	0	1.6	0
3	B3	0	1.6	0
3	B2	0	0.84	0
4	B3	0	1.1	0
5	B2	0	1.6	0
6	B3	0	1.6	0
10	B2	0	2.0	0.76
10	B1	0	1.8	0
11	B2	0	1.5	0
12	B2	0	2.0	0.47
14	B1	0	1.8	1.4
15	UT	0	1.7	0.58
16	B1	0	1.7	0
17	B3	0	0.53	0
19	B1	0	0.67	0
20	B1	0	1.3	0
21	B1	0	1.6	0
22	B1	0	1.4	0
23	B1	0	1.1	0
24	B1	0	1.6	0
25	B2	0	1.6	0
25	B3	0	0.99	0
26	B1	0	0.55	0
27	B1	0	1.8	0
28	B2	0	1.5	0
30	B2	0	2.0	0.77
32	B1	0	0.56	0
33	UT	0	1.7	1.1
34	B1	0	2.4	0
35	B1	0	1.7	0
Average 2006/2007 [max. value]		0.00 [<5]	1.46 [2.40]	0.17 [1.40]
Average 2005/2006 [max. value]		0.43 [7.00]	0.94 [1.50]	0.09 [0.67]
Average 2004/2005 [max. value]		0.17 [5.00]	1.06 [1.80]	0.00 [<0.47]

Please note:

Limit of detection (LOD) means the lowest level that can be detected accurately by the fluorometer. Should the fluorometer give a reading above zero but lower than the limit of detection, the result is reported as 0.

RSA WHEAT PRODUCTION AREAS



WHEAT SEED SOLD BY COMMERCIAL GRAIN SILO OWNERS TO WHEAT PRODUCERS FOR THE 2006 PLANTING SEASON

<u>Cultivar</u>	<u>%</u>	<u>Cultivar</u>	<u>%</u>
SST 027	22.87	Baviaans	0.33
SST 88	17.65	Gariep	0.32
SST 015	11.74	PAN 3118	0.30
SST 57	7.04	PAN 3349	0.275
Duzi	6.99	PAN 3377	0.274
SST 806	6.08	SST 334	0.234
Krokodil	4.41	SST 966	0.130
CRN 826	4.37	Limpopo	0.114
SST 876	4.34	Steenbras	0.107
SST 822	3.22	SST 322	0.087
Elands	2.41	Caledon	0.064
Komati	1.42	PAN 3120	0.056
Kariega	1.32	Marico	0.025
SST 94	0.96	SST 935	0.025
Betta DN	0.74	Matlabas	0.015
Olifants	0.71	PAN 3235	0.011
SST 825	0.67	PAN 3364	0.004
SST 399	0.36	SST 964	0.004
Inia	0.34	PAN 3191	0.001
			<u>100</u>

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

METHODS

GRADING:

Full grading was done in accordance with the Regulations relating to the grading, packing and marking of wheat intended for sale in the Republic of South Africa (No. R. 905 of 10 July 1998 as amended by Nos. R. 1421 of 6 November 1998, R. 876 of 14 September 2001 and R. 979 of 19 July 2002, R. 1210 of 29 August 2003 and Dispensation: Reference No. 21/4/1/1 and Serial No. 791 of 25 July 2003).

Hectolitre mass, screenings, protein and falling number were determined. The determination of deviations relating to wheat kernels comprised foreign matter including gravel, stones, turf and glass; other grain and unthreshed ears; damaged kernels including heat-damaged kernels, immature kernels, insect-damaged kernels and sprouted kernels; heavily frost-damaged kernels; field fungi; storage fungi; ergot; noxious seeds; possible presence of undesirable odours and live insects.

Hectolitre mass means the mass in kilogram per hectolitre. Hectolitre mass provides a measure of the bulk density of the grain and is also useful as a guide to grain soundness and potential milling extraction.

Screenings means all material that passes through a standard sieve. A standard sieve is a hand sieve which consists of a slotted, stainless steel sieve with a thickness of 1,0 mm, mounted in durable plastic, with apertures 1,8 mm wide and 12,7 mm long, which fits into an aluminum pan with a solid bottom, and has a inner diameter of 300 mm and an outer diameter of 302,5 mm.

Damaged kernels means wheat kernels and pieces of wheat kernels -

- (a) which have been damaged by insects;
- (b) which have been distinctly discoloured (orange-brown, dark brown or black) by external heat or as a result of heating caused by internal fermentation in wheat with an excessive moisture content, excluding wheat kernels in respect of which the discolouration is

confined to the germ end;

(c) which are immature and have a distinctly green colour; and

(d) in which germination has proceeded to such an extent that the skin covering the embryo has been broken or the developing rootlets are clearly visible.

THOUSAND KERNEL MASS:

This is the weight in grams of one thousand kernels of grain and provides a measure of grain size and density. This determination does not include kernels that are broken or chipped.

FALLING NUMBER MILLING:

At least 300 g of wheat is cleaned by using the standard 1,8 mm sieve and by removing coarser impurities by hand. The sample is then milled on the falling number hammer mill fitted with a 0,8 mm screen.

PROTEIN:

The Dumas combustion analysis technique is used, according to AACC method 46-30, 1999.

This method prescribes a generic combustion method for the determination of crude protein. Combustion at high temperature in pure oxygen sets nitrogen free, which is measured by thermal conductivity detection. The total nitrogen content of the flour sample is determined and converted to equivalent protein by multiplication with a factor of 5.7 to obtain the protein content.

FALLING NUMBER:

This method is based upon the rapid gelatinization of an aqueous suspension of meal or flour in a boiling water bath and subsequent measurement of the liquefaction of the starch paste by the alpha-amylase in the sample. The method measures the alpha-amylase activity.

ICC Standard No.107/1, 1995 is used to determine the falling number. Only the altitude-corrected value is reported.

QUADROMAT MILLING:

Cleaned wheat samples are conditioned by adding 3 ml water per 100 g wheat, 18 hours prior to milling. The samples are then milled on the Quadromat junior laboratory mill.

MIXOGRAPH:

A 35 g mixograph is used. The amount of water added to the flour is adjusted according to the flour protein content. Industry Accepted Method 020 based on AACC method 54-40A, 1999 is followed.

Mixogram peak time is the time measured in minutes that a dough takes to reach its maximum consistency or first indication of dough weakening. The peak time is a measure of optimum dough development and thus a measure of protein quality.

Mixogram tail height at 6 minutes is the distance in millimetres measured from the base line of the paper at 6 minutes to the graph centre point at 6 minutes. This figure is an indication of the weakening effect of the dough. Higher values indicate flours that are more tolerant to mixing.

BÜHLER MILLING:

Cleaned wheat samples are damped to between 15,0 % and 16,0 % moisture according to the wheat moisture and kernel hardness and allowed to stand for 20 hours. Samples are then milled on a standard Bühler MLU 202 mill and passed through a bran finisher.

BÜHLER EXTRACTION:

The extraction represents the flour yield after milling plus flour obtained from bran that passed through a bran finisher. Flour extraction is calculated from the mass of the total products. Bühler MLU 202 mill set for South African wheat, mill settings and sieve sizes deviate from AACC method 26-21A, 1999.

COLOUR:

The Kent Jones colour is determined by following FTP Method No. 0007/3, 7/1991.

This method determines the influence of the branny material present in flour by measuring reflectance with a light source in the green band of the light spectrum. The lower the Kent Jones colour, the brighter the flour.

FARINOGRAPH:

AACC method 54-21, 1999 constant flour weight procedure is followed, using 300 g of flour on a 14 % moisture basis.

The **farinograph** measures and records the resistance of a dough to mixing, as it is formed from flour and water, developed and broken down. The dough is subjected to a prolonged, relatively gentle mixing action at a constant temperature.

The **water absorption** is the amount of water required for a dough to reach a definite consistency (500 Brabender units). The amount of water added to the flour is expressed as a percentage of the flour mass and reported on a 14 % moisture basis.

The **development time** is the time from the beginning of water addition until the dough reaches its optimum consistency and the point immediately before the first indication of weakening. A long mixing time can be associated with flours that have a high percentage of gluten-forming proteins.

The **stability** is the time during which the top of the curve intercepts a horizontal line through the centre of the curve. This gives an indication of the dough's tolerance to mixing: the longer the stability, the longer the mixing time that the dough can withstand. A dough with a longer stability can also withstand a longer fermentation period.

The **mixing tolerance index value** is the difference, in Brabender units, between the top of the curve at the peak and the top of the curve measured 5 minutes after the peak is reached. The value gives an indication of the extent to which breakdown of the dough occurs. The higher the value, the more and the quicker the breakdown of the dough occurs. This value is similar to the mixogram tail height.

EXTENSOGRAPH:

ICC Standard No. 114/1, 1992 is followed.

The **strength** gives an indication of the total force (work) needed to stretch the dough and is represented by the area under the curve.

The **maximum height** gives an indication of the dough's resistance to stretching and is measured as the mean of the maximum heights of the curves of the two test pieces.

The **extensibility** is the mean length at the base of the 2 curves and indicates the stretchability of the dough.

ALVEOGRAPH:

ICC Standard No.121,1992 is followed.

The **alveograph** measures the resistance of the dough to stretching and also how extensible the dough is. The **alveograph** stretches the dough in more than one direction (as is happening during proofing), whereas the extensograph stretches the dough in only one direction.

Strength: The area under the curve gives an indication of the dough strength.

Stability (P): Obtained by multiplying the maximum height of the curve with a constant factor of 1.1. This value is an indication of the resistance of the dough to extension.

Distensibility (L): The length of the curve, measured along the base line, gives an indication of the extensibility of the dough and also predicts the handling characteristics of the dough.

P/L-value: This ratio is obtained by dividing the P-value by the L-value, thus providing an

approximate indication of the shape of the curve that combines stability and extensibility.

100 g BAKING TEST:

This procedure, according to Industry Accepted Method 022 based on AACC Method 10-10B, 1999, provides an optimized bread-making method for evaluating bread wheat flour quality and a variety of dough ingredients by a straight-dough method in which all ingredients are incorporated in the initial mixing step.

Keys for the evaluation of the 100g Baking test:

- 0 - *Excellent*
- 1 - *Very Good*
- 2 - *Good*
- 3 - *Questionable*
- 4 - *Poor*
- 5 - *Very Poor*
- 6 - *Extremely Poor*

Please note:

This 100 g Baking test evaluation does not give an indication of the baking quality of the flour, but refers to the relationship between the protein content and the bread volume.

MYCOTOXIN ANALYSES

Mycotoxins are natural contaminants of food and feedstuffs with serious implications for public health and economics, in particular with relation to the international food trade.

The mycotoxin analyses were carried out in accordance with the Vicam immunoaffinity column technique using the different Vicam instruction manuals for the different mycotoxins. Detection of the toxins was done on a fluorometer. Thirty samples of the 480 wheat crop samples were tested for aflatoxin, deoxynivalenol and ochratoxin.

Fungi	Toxin	Method reference
<i>Aspergillus flavus</i>	Aflatoxin	Vicam Aflatest Instruction Manual May 5, 1999
<i>Aspergillus ochraceus</i> and several species of <i>Penicillium sp.</i>	Ochratoxin	Vicam Ochratest Instruction Manual November 1, 2005
<i>Fusarium graminearum</i>	Deoxynivalenol (DON)	Vicam DON FQ Instruction Manual November 1, 2004

2005/2006 IMPORTED WHEAT QUALITY - ARGENTINA (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Argentina							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	4	15	19	-	9	1	48	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	13.57	11.47	11.34	-	11.26	11.72	11.56	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	12.0	11.9	12.1	-	12.0	13.1	12.0	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	388	389	377	-	383	328	382	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	36.1	38.1	36.3	-	37.4	39.1	37.1	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	78.0	77.5	76.5	-	77.5	75.0	77.1	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	1.69	2.11	2.24	-	3.66	2.39	2.42	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	0.00	0.03	0.00	-	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	0.20	0.09	0.09	-	0.36	0.10	0.15	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	0.42	0.14	0.18	-	0.88	0.24	0.32	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	0.08	0.01	0.03	-	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	0.04	0.05	0.01	-	0.03	0.00	0.03	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	0.08	0.19	0.05	-	0.44	0.08	0.17	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	0.00	0.02	0.24	-	0.02	0.00	0.10	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	0.00	0.03	0.10	-	0.03	0.00	0.05	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	0.20	0.28	0.18	-	0.51	0.08	0.27	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	2.84	2.31	2.56	-	4.91	2.81	2.96	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	0.16	0.05	0.04	-	0.07	0.16	0.06	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	0.02	0.04	0.04	-	0.05	0.00	0.04	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	0.00	0.05	0.00	-	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	0	0	-	0	0	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	0	0	-	0	0	0	0	0	0	0	0	0	0
Live insects	No	No	No	-	No	No	No	No	No	No	No	No	No	No
Undesirable odour	No	No	No	-	No	No	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	4	15	19	-	9	1	48	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	74.0	75.0	73.8	-	71.7	73.8	73.8	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-0.5	0.5	0.2	-	0.1	1.0	0.2	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	62.5	60.5	60.0	-	59.9	60.3	60.4	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	928	756	754	-	718	785	763	951	912	874	820	895	970	906
Evaluation	1	2	2	-	3	2	2	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	64.2	62.8	60.8	-	60.9	59.1	61.7	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	4.9	2.0	2.1	-	1.9	1.8	2.3	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	13.0	3.8	3.7	-	4.5	2.9	4.7	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	26	54	58	-	59	62	54	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Argentina							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	4	15	19	-	9	1	48	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	52.5	37.0	37.4	-	36.2	38.2	38.3	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	119	128	118	-	128	107	123	84	82	80	86	80	73	82
Distensibility (L), mm	82	49	54	-	46	61	54	117	106	102	93	111	133	109
P/L	1.63	2.78	2.40	-	2.94	1.74	2.54	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	123	90	96	-	91	99	95	117	105	98	96	110	137	108
Max. height, BU	428	418	435	-	444	450	431	372	356	357	354	377	425	366
Extensibility, mm	199	145	152	-	141	154	152	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	3.5	4.1	4.2	-	4.4	4.3	4.1	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	63.2	60.1	60.1	-	60.0	60.3	60.3	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	0.79 [5.00]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.73 [1.80]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	0.34 [1.70]							0.09 [0.67]						
No. of samples	19							30						

2005/2006 IMPORTED WHEAT QUALITY - AUSTRALIA (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Australia							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	8	-	-	-	-	-	8	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	12.79	-	-	-	-	-	12.79	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	10.1	-	-	-	-	-	10.1	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	486	-	-	-	-	-	486	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	37.2	-	-	-	-	-	37.2	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	80.9	-	-	-	-	-	80.9	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	1.32	-	-	-	-	-	1.32	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	0.08	-	-	-	-	-	0.08	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	0.10	-	-	-	-	-	0.10	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	0.06	-	-	-	-	-	0.06	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	0.00	-	-	-	-	-	0.00	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	0.00	-	-	-	-	-	0.00	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	0.00	-	-	-	-	-	0.00	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	0.06	-	-	-	-	-	0.06	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	1.14	-	-	-	-	-	1.14	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	0.04	-	-	-	-	-	0.04	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	0.02	-	-	-	-	-	0.02	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	-	-	-	-	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	-	-	-	-	-	0	0	0	0	0	0	0	0
Live insects	No	-	-	-	-	-	No	No	No	No	No	No	No	No
Undesirable odour	No	-	-	-	-	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	8	-	-	-	-	-	8	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	73.9	-	-	-	-	-	73.9	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-2.4	-	-	-	-	-	-2.4	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	61.9	-	-	-	-	-	61.9	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	871	-	-	-	-	-	871	951	912	874	820	895	970	906
Evaluation	1	-	-	-	-	-	1	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	65.0	-	-	-	-	-	65.0	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	5.7	-	-	-	-	-	5.7	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	10.2	-	-	-	-	-	10.2	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	28	-	-	-	-	-	28	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Australia							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	8	-	-	-	-	-	8	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	51.7	-	-	-	-	-	51.7	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	122	-	-	-	-	-	122	84	82	80	86	80	73	82
Distensibility (L), mm	85	-	-	-	-	-	85	117	106	102	93	111	133	109
P/L	1.48	-	-	-	-	-	1.48	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	108	-	-	-	-	-	108	117	105	98	96	110	137	108
Max. height, BU	394	-	-	-	-	-	394	372	356	357	354	377	425	366
Extensibility, mm	188	-	-	-	-	-	188	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	2.8	-	-	-	-	-	2.8	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	61.9	-	-	-	-	-	61.9	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	3.00 [6.00]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.32 [0.64]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	0.73 [0.79]							0.09 [0.67]						
No. of samples	2							30						

2005/2006 IMPORTED WHEAT QUALITY - CANADA (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Canada							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	4	1	-	-	-	-	5	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	13.16	11.98	-	-	-	-	12.92	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	12.7	11.8	-	-	-	-	12.5	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	388	382	-	-	-	-	387	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	31.3	34.6	-	-	-	-	32.0	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	79.5	77.3	-	-	-	-	79.1	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	2.73	1.86	-	-	-	-	2.56	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	0.00	0.00	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	0.10	0.30	-	-	-	-	0.14	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	0.36	0.20	-	-	-	-	0.32	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	0.04	0.00	-	-	-	-	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	0.00	0.00	-	-	-	-	0.00	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	0.14	0.10	-	-	-	-	0.13	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	0.22	0.00	-	-	-	-	0.18	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	0.14	0.06	-	-	-	-	0.12	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	0.32	0.16	-	-	-	-	0.29	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	3.51	2.52	-	-	-	-	3.31	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	0.04	0.10	-	-	-	-	0.05	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	0.12	0.00	-	-	-	-	0.10	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	0.00	0.00	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	0	-	-	-	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	0	-	-	-	-	0	0	0	0	0	0	0	0
Live insects	No	No	-	-	-	-	No	No	No	No	No	No	No	No
Undesirable odour	No	No	-	-	-	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	4	1	-	-	-	-	5	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	74.1	73.6	-	-	-	-	74.0	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-1.5	0.4	-	-	-	-	-1.1	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	62.7	60.9	-	-	-	-	62.3	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	895	795	-	-	-	-	875	951	912	874	820	895	970	906
Evaluation	2	2	-	-	-	-	2	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	62.9	62.2	-	-	-	-	62.8	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	4.8	2.0	-	-	-	-	4.2	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	11.1	12.7	-	-	-	-	11.4	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	26	42	-	-	-	-	29	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Canada							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	4	1	-	-	-	-	5	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	51.5	48.9	-	-	-	-	51.0	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	113	132	-	-	-	-	117	84	82	80	86	80	73	82
Distensibility (L), mm	84	62	-	-	-	-	79	117	106	102	93	111	133	109
P/L	1.38	2.13	-	-	-	-	1.53	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	112	103	-	-	-	-	110	117	105	98	96	110	137	108
Max. height, BU	398	475	-	-	-	-	418	372	356	357	354	377	425	366
Extensibility, mm	196	151	-	-	-	-	185	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	3.3	4.4	-	-	-	-	3.5	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	62.7	60.9	-	-	-	-	62.3	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	1.67 [5.00]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.45 [0.79]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	0.73 [1.70]							0.09 [0.67]						
No. of samples	3							30						

2005/2006 IMPORTED WHEAT QUALITY - FRANCE (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	France							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	-	1	-	-	1	-	2	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	-	11.03	-	-	11.21	-	11.12	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	-	12.3	-	-	11.7	-	12.0	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	-	409	-	-	475	-	442	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	-	40.8	-	-	38.4	-	39.6	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	-	76.6	-	-	77.5	-	77.1	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	-	2.72	-	-	3.27	-	3.00	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	-	0.00	-	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	-	0.06	-	-	0.04	-	0.05	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	-	0.34	-	-	0.08	-	0.21	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	-	0.08	-	-	0.00	-	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	-	0.00	-	-	0.00	-	0.00	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	-	0.46	-	-	0.24	-	0.35	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	-	0.00	-	-	0.08	-	0.04	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	-	0.00	-	-	0.00	-	0.00	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	-	0.54	-	-	0.24	-	0.39	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	-	3.66	-	-	3.63	-	3.65	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	-	0.08	-	-	0.08	-	0.08	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	-	0.08	-	-	0.00	-	0.04	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	-	0.00	-	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	-	0	-	-	0	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	-	0	-	-	0	-	0	0	0	0	0	0	0	0
Live insects	-	No	-	-	No	-	No	No	No	No	No	No	No	No
Undesirable odour	-	No	-	-	No	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	-	1	-	-	1	-	2	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	-	75.1	-	-	74.3	-	74.7	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-	-0.2	-	-	-0.1	-	-0.2	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	-	56.5	-	-	57.8	-	57.2	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	-	760	-	-	760	-	760	951	912	874	820	895	970	906
Evaluation	-	1	-	-	1	-	1	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	-	58.0	-	-	60.6	-	59.3	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	-	1.7	-	-	1.7	-	1.7	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	-	4.6	-	-	4.0	-	4.3	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	-	50	-	-	55	-	53	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	France							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	-	1	-	-	1	-	2	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	-	39.4	-	-	43.0	-	41.2	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	-	105	-	-	121	-	113	84	82	80	86	80	73	82
Distensibility (L), mm	-	66	-	-	62	-	64	117	106	102	93	111	133	109
P/L	-	1.60	-	-	1.95	-	1.78	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	-	113	-	-	104	-	109	117	105	98	96	110	137	108
Max. height, BU	-	475	-	-	445	-	460	372	356	357	354	377	425	366
Extensibility, mm	-	162	-	-	159	-	161	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	-	4.4	-	-	3.8	-	4.1	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	-	59.5	-	-	59.8	-	59.7	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	< 5 [<5]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.98 [0.98]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	2.10 [2.10]							0.09 [0.67]						
No. of samples	1							30						

2005/2006 IMPORTED WHEAT QUALITY - GERMANY (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Germany							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	7	18	11	3	14	-	53	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	13.50	11.63	11.74	12.06	11.88	-	11.99	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	12.3	12.4	12.1	12.5	12.6	-	12.4	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	345	349	312	341	298	-	327	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	32.6	41.9	38.9	40.6	40.7	-	39.6	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	79.4	77.5	75.6	73.8	74.9	-	76.5	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	2.39	2.28	2.23	2.41	3.15	-	2.52	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	0.23	0.11	0.22	0.37	0.43	-	0.25	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	0.31	0.19	0.29	0.67	0.32	-	0.29	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	0.00	0.00	0.00	0.01	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	0.10	0.06	0.09	0.04	0.03	-	0.06	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	0.22	0.15	0.17	0.00	0.18	-	0.16	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	0.00	0.09	0.09	0.01	0.16	-	0.09	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	0.17	0.08	0.09	0.03	0.16	-	0.11	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	0.55	0.26	0.34	0.08	0.37	-	0.33	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	3.41	2.84	3.08	2.81	4.34	-	3.36	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	0.07	0.04	0.05	0.08	0.13	-	0.07	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	0.02	0.02	0.02	0.01	0.03	-	0.02	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	0	0	0	0	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	0	0	0	0	-	0	0	0	0	0	0	0	0
Live insects	No	No	No	No	No	-	No	No	No	No	No	No	No	No
Undesirable odour	No	No	No	No	No	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	7	18	11	3	14	-	53	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	73.9	74.3	73.3	73.5	73.3	-	73.7	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-0.5	0.6	0.4	0.2	0.7	-	0.4	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	62.5	60.0	59.9	60.6	59.8	-	60.3	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	935	764	792	827	797	-	805	951	912	874	820	895	970	906
Evaluation	1	2	1	1	1	-	1	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	61.1	61.0	59.6	59.8	60.2	-	60.4	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	4.2	1.9	2.0	2.1	2.0	-	2.2	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	10.7	4.0	4.0	5.8	5.0	-	5.3	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	31	56	57	48	54	-	52	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Germany							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	7	18	11	3	14	-	53	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	48.0	37.5	37.3	35.7	38.0	-	38.9	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	96	117	102	96	107	-	107	84	82	80	86	80	73	82
Distensibility (L), mm	93	55	67	71	65	-	66	117	106	102	93	111	133	109
P/L	1.06	2.26	1.63	1.44	1.76	-	1.79	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	122	90	92	108	90	-	96	117	105	98	96	110	137	108
Max. height, BU	452	419	409	432	404	-	418	372	356	357	354	377	425	366
Extensibility, mm	189	147	155	168	155	-	158	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	3.6	4.0	4.2	4.4	4.1	-	4.1	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	62.6	60.2	60.3	60.5	60.3	-	60.6	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	0.31 [5.00]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.83 [1.70]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	0.33 [1.40]							0.09 [0.67]						
No. of samples	15							30						

2005/2006 IMPORTED WHEAT QUALITY - UKRAINE (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Ukraine							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	-	5	4	1	6	-	16	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	-	11.49	10.59	9.68	10.99	-	10.97	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	-	12.4	12.0	12.0	11.9	-	12.1	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	-	321	295	413	369	-	338	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	-	39.6	37.0	35.7	36.3	-	37.5	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	-	78.2	76.5	76.8	76.5	-	77.0	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	-	2.29	1.60	1.30	3.09	-	2.35	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	-	0.13	0.36	0.31	0.44	-	0.31	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	-	0.34	0.14	0.00	1.18	-	0.58	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	-	0.00	0.02	0.00	0.17	-	0.07	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	-	0.02	0.05	0.00	0.03	-	0.03	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	-	0.16	0.06	0.01	0.28	-	0.17	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	-	0.00	0.00	1.62	0.40	-	0.25	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	-	0.13	0.08	0.00	0.26	-	0.16	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	-	0.32	0.21	0.00	0.74	-	0.43	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	-	3.07	2.28	0.01	5.05	-	3.43	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	-	0.03	0.02	0.00	0.00	-	0.02	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	-	0.03	0.02	0.02	0.00	-	0.02	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	-	0	0	0	0	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	-	0	0	0	0	-	0	0	0	0	0	0	0	0
Live insects	-	No	No	No	No	-	No	No	No	No	No	No	No	No
Undesirable odour	-	No	No	No	No	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	-	5	4	1	6	-	16	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	-	73.3	73.0	72.9	73.8	-	73.4	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-	-0.4	-0.3	-0.7	0.1	-	-0.2	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	-	60.0	59.2	56.2	59.7	-	59.5	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	-	787	770	700	741	-	760	951	912	874	820	895	970	906
Evaluation	-	1	0	0	2	-	1	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	-	59.0	58.4	52.6	59.1	-	58.5	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	-	1.9	2.0	1.2	1.8	-	1.9	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	-	4.8	3.2	1.8	4.7	-	4.2	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	-	55	63	81	55	-	59	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	Ukraine							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	-	5	4	1	6	-	16	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S) , cm ²	-	35.5	33.4	17.9	36.5	-	34.3	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	-	102	98	41	100	-	96	84	82	80	86	80	73	82
Distensibility (L), mm	-	58	57	97	54	-	59	117	106	102	93	111	133	109
P/L	-	1.78	1.74	0.43	1.86	-	1.72	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	-	112	103	68	85	-	97	117	105	98	96	110	137	108
Max. height, BU	-	507	450	355	393	-	441	372	356	357	354	377	425	366
Extensibility, mm	-	152	157	127	144	-	149	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	-	4.3	4.9	4.6	4.5	-	4.5	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	-	60.0	59.2	58.2	59.7	-	59.6	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	2.50 [10.00]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.81 [1.60]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	0.56 [1.30]							0.09 [0.67]						
No. of samples	4							30						

2005/2006 IMPORTED WHEAT QUALITY - USA (1 Oct 2005 to 30 Sep 2006)

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	USA							RSA Crop Average						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	2	4	8	1	8	-	23	178	104	85	21	69	23	480
WHEAT														
GRADING														
Protein (12% mb), %	13.48	12.13	11.77	11.64	11.74	-	11.96	13.37	12.04	11.34	10.44	12.30	13.07	12.43
Moisture, %	10.9	12.1	12.2	12.3	11.9	-	12.0	11.2	11.2	11.0	10.9	10.9	11.2	11.1
Falling number, sec	336	384	350	326	362	-	358	370	384	385	357	374	364	375
1000 Kernel mass (13% mb), g	30.2	39.1	41.0	40.6	39.6	-	39.2	35.5	37.0	36.6	37.8	34.4	32.6	35.8
Hlm (dirty), kg/hl	80.2	77.1	76.6	73.9	76.1	-	76.7	78.8	78.3	78.2	78.7	77.4	75.6	78.2
Screenings (<1,8mm), %	1.85	2.34	1.87	2.26	2.88	-	2.32	1.41	1.55	1.52	1.38	2.87	1.89	1.69
Gravel, stones, turf and glass, %	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
Foreign matter, %	0.80	0.27	0.41	0.96	0.77	-	0.57	0.09	0.11	0.12	0.11	0.12	0.27	0.12
Other grain & unthreshed ears, %	0.01	0.08	0.35	0.80	0.85	-	0.47	0.27	0.30	0.34	0.30	0.50	0.37	0.33
Heat damaged kernels, %	0.01	0.04	0.00	0.00	0.00	-	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Immature kernels, %	0.00	0.08	0.01	0.00	0.00	-	0.02	0.16	0.09	0.07	0.05	0.07	0.16	0.11
Insect damaged kernels, %	0.00	0.18	0.15	0.00	0.35	-	0.20	0.29	0.41	0.45	0.44	0.65	5.85	0.67
Heavily frost damaged kernels, %	0.00	0.85	0.58	0.00	0.00	-	0.35	0.00	0.03	0.00	0.00	0.00	0.04	0.01
Sprouted kernels, %	0.00	0.10	0.11	0.00	0.03	-	0.07	0.03	0.06	0.02	0.02	0.17	0.56	0.08
Total damaged kernels, %	0.01	0.40	0.27	0.00	0.38	-	0.29	0.48	0.56	0.57	0.51	0.90	6.89	0.88
Combined deviations, %	2.66	3.09	2.89	4.02	4.88	-	3.64	2.26	2.50	2.54	2.30	4.39	7.96	2.95
Field fungi, %	0.01	0.02	0.06	0.36	0.17	-	0.10	0.08	0.11	0.12	0.08	0.10	0.25	0.11
Storage fungi, %	0.10	0.00	0.01	0.08	0.05	-	0.03	0.01	0.01	0.01	0.00	0.01	0.02	0.01
Ergot, %	0.00	0.15	0.09	0.00	0.00	-	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	0	0	0	0	-	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	0	0	0	0	-	0	0	0	0	0	0	0	0
Live insects	No	No	No	No	No	-	No	No	No	No	No	No	No	No
Undesirable odour	No	No	No	No	No	-	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	2	4	8	1	8	-	23	30	22	19	11	14	4	100
BÜHLER EXTRACTION, %	72.5	71.9	72.0	73.4	73.4	-	72.6	75.4	75.9	75.4	75.6	75.2	74.6	75.5
FLOUR														
Colour, KJ	-1.2	-0.2	-0.3	0.4	-0.2	-	-0.3	-1.8	-1.9	-1.9	-1.8	-1.4	-0.3	-1.8
100g BAKING TEST														
Baking water absorption, %	61.6	61.4	60.2	60.2	60.1	-	60.5	62.3	61	60.9	60.9	61.2	63.3	61.5
Loaf volume, cm3	930	769	777	825	822	-	807	951	912	874	820	895	970	906
Evaluation	0	3	2	0	1	-	2	0	0	0	1	0	1	0
FARINOGRAM														
Water absorption, %	61.0	63.1	61.5	59.2	58.7	-	60.7	63.1	62.6	61.6	61.7	61.9	62.0	62.3
Development time, min	3.4	2.2	2.4	1.9	2.1	-	2.3	6.0	4.9	4.2	4.1	4.7	5.8	5.0
Stability, mm	10.7	4.7	3.9	3.4	4.6	-	4.8	10.7	9.0	8.5	7.5	9.1	10.7	9.3
Mixing tolerance index, BU	22	54	61	56	56	-	54	33	37	36	43	35	32	36

2005/2006 Imported Wheat Quality Versus 2005/2006 RSA Season

Country of origin	USA							RSA Crop Average						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	2	4	8	1	8	-	23	30	22	19	11	14	4	100
ALVEOGRAM														
Strength (S), cm ²	51.3	38.6	33.7	36.1	37.4	-	37.4	44.5	39.9	36.9	37.6	39.6	46.7	40.7
Stability (P), mm	95	118	109	94	99	-	105	84	82	80	86	80	73	82
Distensibility (L), mm	118	58	55	78	66	-	66	117	106	102	93	111	133	109
P/L	0.81	2.06	2.06	1.21	1.52	-	1.72	0.73	0.79	0.84	1.16	0.75	0.57	0.81
EXTENSOGRAM														
Strength, cm ²	133	95	89	103	115	-	104	117	105	98	96	110	137	108
Max. height, BU	455	399	388	435	468	-	425	372	356	357	354	377	425	366
Extensibility, mm	198	160	157	161	169	-	165	213	199	186	175	198	218	199
MIXOGRAM														
Peak time, min	3.3	3.8	3.9	4.3	4.5	-	4.1	2.4	2.5	2.5	2.6	2.5	2.5	2.5
Absorption, %	62.1	61.1	60.6	60.2	60.3	-	60.7	62.5	61.4	60.8	60.8	61.5	63.9	61.7
MYCOTOXINS														
Aflatoxin, ppb [max. value]	0.00 [<5]							0.43 [7.00]						
Deoxynivalenol, ppm [max. value]	0.50 [1.20]							0.94 [1.50]						
Ochratoxin A, ppb [max. value]	5.66 [41.00]							0.09 [0.67]						
No. of samples	8							30						

RSA WHEAT CROP QUALITY

RSA Crop Quality 2004/2005 and 2006/2007 Seasons

Country of origin	RSA Crop Average 2004/2005							RSA Crop Average 2006/2007						
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
Class and Grade bread wheat														
No. of samples	189	109	76	20	73	13	480	135	130	104	42	64	5	480
WHEAT														
GRADING														
Protein (12% mb), %	13.39	12.43	12.80	11.80	12.92	14.07	12.96	12.73	11.48	10.73	9.84	10.93	11.00	11.45
Moisture, %	10.8	10.9	10.8	10.9	10.8	11.1	10.9	10.5	10.4	10.5	12.6	10.5	10.8	10.7
Falling number, sec	380	377	380	370	370	373	377	347	362	357	332	346	260	351
1000 Kernel mass (13% mb), g	35.3	35.9	34.8	36.8	33.7	31.5	35.1	36.4	37.8	37.9	37.9	36.4	35.7	37.2
Hlm (dirty), kg/hl	78.9	78.1	76.8	77.2	76.2	72.2	77.7	79.3	78.9	77.7	77.8	77.0	75.8	78.4
Screenings (<1,8mm), %	1.35	1.55	1.77	1.61	3.26	4.63	1.85	1.44	1.47	1.72	1.52	3.45	3.39	1.81
Gravel, stones, turf and glass, %	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Foreign matter, %	0.12	0.16	0.14	0.11	0.23	0.33	0.15	0.07	0.08	0.09	0.10	0.10	0.08	0.08
Other grain & unthreshed ears, %	0.31	0.34	0.37	0.26	0.59	1.06	0.39	0.26	0.29	0.35	0.36	0.55	0.22	0.33
Heat damaged kernels, %	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Immature kernels, %	0.09	0.06	0.08	0.03	0.06	0.04	0.07	0.07	0.06	0.05	0.04	0.02	0.02	0.05
Insect damaged kernels, %	0.39	0.43	0.35	0.50	0.86	0.58	0.47	0.39	0.43	0.54	0.57	0.66	4.14	0.53
Heavily frost damaged kernels, %	0.00	0.00	0.00	0.00	0.00	2.07	0.06	0.03	0.02	0.03	0.00	0.01	0.30	0.03
Sprouted kernels, %	0.03	0.03	0.03	0.06	0.02	0.09	0.03	0.05	0.06	0.05	0.05	0.13	2.12	0.09
Total damaged kernels, %	0.52	0.52	0.46	0.60	0.94	0.70	0.58	0.50	0.55	0.64	0.66	0.82	6.28	0.66
Combined deviations, %	2.27	2.57	2.74	2.57	5.01	6.71	2.96	2.27	2.40	2.80	2.64	4.94	9.96	2.89
Field fungi, %	0.16	0.18	0.22	0.25	0.15	0.37	0.18	0.08	0.12	0.11	0.14	0.19	0.10	0.12
Storage fungi, %	0.02	0.03	0.03	0.03	0.03	0.02	0.03	0.01	0.01	0.03	0.04	0.02	0.02	0.02
Ergot, %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Noxious seeds (Crotalaria sp, Datura sp..)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Noxious seeds (Argemone mexicana..)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Live insects	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Undesirable odour	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	24	25	21	10	-	-	100	26	25	21	11	15	2	100
BÜHLER EXTRACTION, %	74.9	74.5	74.7	74.0	-	-	74.6	75.2	75.4	75.6	74.7	74.6	72.3	75.1
FLOUR														
Colour, KJ	-1.2	-1.2	-1.2	-1.3	-	-	-1.2	-1.1	-1.3	-1.4	-1.5	-0.8	-1.0	-1.2
100g BAKING TEST														
Baking water absorption, %	62.3	61.9	61.3	61.2	-	-	61.8	61.7	60.3	59.6	58.7	59.8	60.5	60.3
Loaf volume, cm3	949	922	918	934	-	-	930	893	824	794	718	776	788	816
Evaluation	1	1	0	1	-	-	1	1	1	1	2	1	2	1
FARINOGRAM														
Water absorption, %	61.6	61.2	60.5	60.5	-	-	61.0	63.0	61.7	60.5	60.0	60.5	61.5	61.4
Development time, min	5.2	5.0	4.9	5.5	-	-	5.1	4.6	3.7	2.9	2.1	2.7	2.4	3.4
Stability, mm	9.4	9.2	8.9	11.0	-	-	9.4	7.2	6.3	5.7	4.5	5.6	6.2	6.1
Mixing tolerance index, BU	41	43	46	40	-	-	43	45	50	52	62	53	47	51

RSA Crop Quality of 2004/2005 and 2006/2007 Seasons

Country of origin	RSA Crop Average 2004/2005							RSA Crop Average 2006/2007						
Class and Grade bread wheat	B1	B2	B3	B4	UT	COW	Average	B1	B2	B3	B4	UT	COW	Average
No. of samples	24	25	21	10	-	-	80	26	25	21	11	15	2	100
ALVEOGRAM														
Strength (S) , cm ²	40.5	39.5	37.7	41.7	-	-	39.6	42.3	37.5	33.7	32.0	33.9	38.0	36.8
Stability (P), mm	75	75	72	74	-	-	74	88	87	82	87	80	95	85
Distensibility (L), mm	130	122	124	127	-	-	126	110	100	95	80	99	93	99
P/L	0.59	0.65	0.60	0.63	-	-	0.62	0.82	0.93	0.92	1.25	0.90	1.20	0.93
EXTENSOGRAM														
Strength, cm ²	116	118	109	121	-	-	115	94	80	75	72	80	98	82
Max. height, BU	401	416	393	424	-	-	406	331	323	315	328	327	383	326
Extensibility, mm	201	193	189	190	-	-	194	195	173	164	152	168	175	174
MIXOGRAM														
Peak time, min	2.5	2.6	2.7	2.8	-	-	2.6	2.4	2.5	2.6	2.9	2.7	2.9	2.6
Absorption, %	62.7	62.1	62.0	62.6	-	-	62.3	62.1	60.6	59.8	59.0	60.0	60.2	60.5
MYCOTOXINS														
Aflatoxin, ppb [max. value]	0.17 [5.00]							0.00 [<5]						
Deoxynivalenol, ppm [max. value]	1.06 [1.80]							1.46 [2.40]						
Ochratoxin A, ppb [max. value]	0.00 [<0.47]							0.17 [1.40]						
No. of samples	30							30						

