South African Maize Crop

Quality Report 2009/2010 Season

INDEX

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SOUTH AFRICAN
COMMERCIAL MAIZE QUALITY
2009/2010

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* **The Grain Silo Industry and its members for providing the samples to make this survey possible.**

1. Introduction

The calculated final commercial crop figure for maize for the 2009/2010 season by the National Crop Estimates Committee was 12 815 000 tons. This is 6 % more than the previous season's 12 050 000 tons. The major maize-producing region was the Free State (5 076 000 tons), followed by North West Province (2 868 000 tons) and Mpumalanga (2 745 000 tons). White maize contributed 61 % to the total production, which is 3 % more than the previous season's 58%.

The maize crop quality survey is done annually by the Southern African Grain Laboratory (SAGL).

800 composite samples, proportionally representing white and yellow maize of each production region, were analysed for quality.

The quality attributes which were tested for, include:
a. RSA grading:
All samples were graded according to the following factors, as defined in the South African grading regulation: defective kernels above and below 6.35 mm sieve, total defective kernels, foreign matter, other colour, total deviation and pinked kernels.
b. USA grading according to regulations on all samples to determine the following factors: Grain density expressed as Hectolitre mass, heat damaged, total damaged, broken corn and foreign matter (BCFM) and other colour.
c. Nutritional values (on all samples): Fat, protein and starch.
d. Physical Quality factors (on all samples): Hectolitre mass, 100 kernel mass, kernel size, breakage susceptibility, stress cracks and milling index.
e. Roff milling and whiteness index were done on all white maize samples.
f. Mycotoxin analyses were performed on 90 samples representative of white and yellow maize produced per region.
g. Testing for the presence of Genetically Modified (GM) maize were performed on 90 samples representative of white and yellow maize produced per region.

See methods on pages 55 - 59.

The 800 samples analysed consisted of 458 white maize samples and 342 yellow maize samples.

2. Maize Crop Quality - summary of results

2.1 RSA Grading

The general good quality observed with this particular maize crop quality survey, is reflected by the average grading of best grade, in terms of both the RSA and USA grading standards.

Of the 458 white maize samples analysed, 67 % were graded WM1, 28 % WM2 and 5 % WM3. Of the 342 yellow maize samples analysed, 70 % were graded YM1, 28 % YM2 and 2 % YM3. One white and one yellow maize sample were each graded Class Other Maize (COM). The percentages WM1 and YM1 grades were significantly lower than the past two seasons. Most of the samples were downgraded due to the % defective kernels which consisted mainly of Diplodia infected kernels above the 6.35 mm sieve. Only a few samples were downgraded as a result of the % foreign matter and % other colour maize.

The average percentage total deviation of 7.1 is 1.1 % higher than the weighted average (6.0 %) of the past ten seasons.

2.2 USA Grading

Of the 800 maize samples, 26 % were graded US1, 36 % US2, 16 % US3, 13 % US4, 6 % US5, 1 % mixed grade and 2 % sample grade, according to USA grading regulations. The samples were downgraded mostly due to the % total damaged kernels.

2.3 Nutritional Values

The average fat content of all of these samples was 4.0 %, average protein 8.3 % and average starch content 72.9 %. The average fat content is the same than the ten year average of 4.0 %, the average protein content is 0.5 % lower than the ten year average of 8.8 % and the average starch content of 72.9 % is 1.2 % higher than the ten year average. The nutritional values compared well (within 0.2 %) with the previous season.

Yellow maize had a lower fat content (3.8 %) than white maize (4.2 %), both values are 0.2 % higher than the previous season. The starch content in yellow maize averaged 73.4 % and was higher than in white maize (72.6 %). The average protein content in white maize was 8.4 % and in yellow maize 8.1 %.

From the available data it is clear that the % fat in yellow maize is lower over the past 5 seasons than that in white maize and the % starch higher in yellow maize than in white maize.

The nutritional components, fat, starch and protein were reported as % (g/100g) on a dry base.

2.4 Physical Quality factors

Hectolitre mass is applied as a grading factor in the USA grading regulations. White maize had an average hectolitre mass of 77.9 kg/hl compared to the 76.6 kg/hl of yellow maize. The hectolitre mass varied from 60.2 kg/hl to 84.4 kg/hl. Only 1 % of the samples were below the minimum requirement for USA grade 1 maize of 72.1 kg/hl.

The 100 kernel mass averaged 34.7 g (higher than the previous five seasons). The 100 kernel mass of the yellow maize averaged 33.0 g and 36.0 g in white maize.

Yellow maize kernels were smaller on average than white kernels as observed in Tables 12 to 14. The breakage susceptibility for white maize is similar to the previous season and slightly less susceptible than yellow maize. The % stress cracks varied from 0 – 36 %, averaged 4% and compared well with previous seasons.

The milling index varied from 52.7 to 119.1 and averaged 90.3. The average milling index for yellow maize is lower (88.8) than that of white maize (91.4).

2.5 Roff milling and whiteness index (WI)

The average % extraction of total meal with the Roff mill averaged 77.8 % and varied from 71.3 % to 82.6 % in white maize. This average value is a little lower than the previous season (2008/2009) which had an average of 78.6 %, a minimum of 70.0 % and maximum of 84.9 %.

The whiteness index averaged 27.7 and varied from -3.0 to 38.5 for unsifted maize meal. Sifted maize meal averaged 22.4, with a minimum of -7.5 and maximum of 35.4.

The higher the WI value, the whiter the meal. The main contributing factors causing lower WI values are the percentage defective kernels, the presence of another colour maize like yellow maize as well as cultivar. The sample with the lowest WI value of -3.0 (unsifted) and -7.5 (sifted) had a presence of 5.1 % other colour maize and graded WM2. The second lowest WI sample, 5.8 (unsifted) and -2.7 (unsifted) contained 6.5 % other colour maize and graded WM3. The third lowest WI sample 6.8 (unsifted) and 5.0 (sifted) had 41.3 % total defective kernels present and graded COM.

The whiteness index of the previous season averaged 29.7 and varied from 16.2 to 38.1 for unsifted maize meal. Sifted maize meal averaged 20.5, with a minimum of 3.7 and maximum of 35.0.

2.6 Mycotoxins

The percentage Fusarium infected kernels ranged from 0 to 3.7 % and averaged 0.8 %. The percentage Diplodia infected kernels ranged from 0 to 10.8 % and averaged 1.6 %.

The average mycotoxin levels were more or less the same than in previous seasons. The total Fumonisin level averaged 251 µg/kg (ppb) and ranged from 0 to 4 035 µg/kg. The Deoxynivalenol level averaged 206 µg/kg and ranged from 0 to 1 845 µg/kg. No Aflatoxin, Ochratoxin A, Zearalenone or T - 2 Toxin were found in the samples.

2.7 Genetic Modification (GM)

The SAGL screened 90 (11 %) of the crop samples to test for the presence of MON810 (*Bt* maize event) and NK603 (RUR).

The methodology applied by the SAGL is a quantitative enzyme-linked immunosorbent assay (ELISA). The SAGL does however not report quantities recorded below the limit of detection and above the value of the reference standards used, since this falls outside the linear range of the method. The crop quality samples received by the SAGL are composite samples per class and grade, made up of individual deliveries to the silos.

The limit of detection for the MON810 methodology used is 0.15 %. The highest reference standard is 2.0 % and quantitation values can only be guaranteed up to 2.0 %. Ninety-six percent of the samples tested positive for MON810 with values larger than 0.15 % (LOD).

The limit of detection for the NK603 methodology used is 0.25 %. The highest reference standard is 1.8 % and quantitation values can only be guaranteed up to 1.8 %. Sixty one percent of the samples tested positive with values larger than 0.2 % (LOD).

3. Production regions

The RSA is divided into 36 grain production regions.

Regions 1 to 9 are winter rainfall areas (Western Cape), as well as the Eastern Cape and Karoo where very little commercial maize is being produced.

Region 10 is Griqualand West and region 11 Vaalharts. Region 34 falls within Gauteng, region 35 within the Limpopo Province and region 36 within KwaZulu-Natal.

The main production regions are:
a) Regions 12 to 20 which are all within the North West province,
b) Regions 21 to 28 in the Free State,
c) Regions 29 to 33 in Mpumalanga.

The contribution of the three main production areas was as follow:
a) The Free State contributed 40 % of which 63 % was white maize and 37 % yellow maize.
b) North West contributed 22 % of which 82 % was white maize and 18 % yellow maize.
c) Mpumalanga contributed 21 %, white and yellow maize each contributed 50 % to this total.

These contributions of the three main production areas made up 83% of the total maize production in the RSA.

See chart for the different provinces and the list of Grain Production regions, Grain Handlers and silos (pages 12 - 15).

South African Provinces

3.1 Main production regions – summary of results

The maize quality of the three main maize producing provinces differed in some aspects, however significant differences were not observed.

The weighted average percentage total deviation for the Free State was 7.4 %. North West averaged 7.5 % and Mpumalanga 7.0 %, this is higher than the previous season's 4.4 %, 4.9 % and 4.5 % respectively.

The maize produced in the Free State averaged a hectolitre mass of 77.1 kg/hl, North West 77.8 kg/hl and Mpumalanga 77.4 kg/hl. The Free State and Mpumalanga values compared to the previous season, North West averaged 0.3 kg/hl higher than in 2008/2009.

North West gave the highest average protein of 8.5 %, followed by the Free State and Mpumalanga both with 8.2 %. All three provinces gave an average fat content of between 4.0 % and 4.1 %. The starch content in these three production areas averaged between 72.8 % and 73.1 %.

The 100 kernel mass for the Free State averaged 34.3 g, North West 34.9 g and Mpumalanga 35.1 g.

The North West province had the "largest" kernel size with an average of 22.9 % of the maize having kernels > 10 mm (Mpumalanga 21.9 % and the Free State 21.3 %).

Stress cracks in the Free State averaged 5 %, Mpumalanga 4 % and North West 3 %.

The average milling index in the Free State was 89.5, in Mpumalanga 91.3 and 91.1 in North West.

The average percentage breakage susceptibility of maize kernels passing through the 6.35 mm sieve, averaged 2.1 % in the Free State, North West 1.5 % and Mpumalanga 1.6 %.

The white maize from North West gave an average whiteness index of 27.7 (unsifted) and 23.3 (sifted). The Free State had an average of 27.3 (unsifted) and 21.8 (sifted) and Mpumalanga 28.0 (unsifted) and 22.0 (sifted).

The % extraction total meal with the Roff mill averaged 78.2 % in North West, 78.1 % in the Free State and 77.0 % in Mpumalanga.

4. Imported Maize (2008/2009)

Seven imported maize samples were analysed, 4 samples from Argentina and 3 samples from Brazil. 2 of these samples were graded YM1 and 5 YM2.

The major downgrading factor of imported maize to YM2 was the high percentage of defective kernels below the 6.35 mm sieve.

The imported maize had an average hectolitre mass of 76.2 kg/hl (Argentina) and 77.1 kg/hl (Brazil). RSA yellow maize had an average hectolitre mass of 76.6 kg/hl.

The 100 kernel mass of RSA maize was higher than the imported maize. The average 100 kernel mass of RSA yellow maize was 34.2 g compared to the imported maize, 28.2 g (Argentina) and 31.0 g (Brazil).

The percentage stress cracks on imported maize was higher than in RSA maize. Argentina maize had the highest % breakage susceptibility and % stress cracks.

The imported maize had smaller kernels than the 2008/2009 and 2009/2010 local crop.

The average weighted fat content of 4.2 and 4.6 % of the imported maize were higher than the average RSA yellow maize fat content of 3.8 %. Argentina averaged 8.6 % protein while Brazil averaged 5.1 % and RSA 8.3 %. The starch percentages of the imported maize were slighly higher than the RSA maize.

The mycotoxin and GMO analyses were done on a composite sample of the 4 imported samples received from Argentina and a composite sample of the 3 imported samples received from Brazil. The imported maize from Argentina tested negative for GMO-MON810 and positive for NK603(Roundup Ready) while the imported maize from Brazil tested positive for GMO-MON810 and negative for NK603(Roundup Ready). 90% of the RSA maize tested positive for both.

In both the imported maize and RSA maize no residues of total Aflatoxin were detected.

The maize from Argentina contained 0.80 ppm (mg/kg) Fumonisin and the Brazilian maize 1.90 ppm. South African values ranged from 0.25 ppm (YM1) to 1.48 ppm (YM2).

There was no significant difference between the average values of Ochratoxin A, Zearalenone and Deoxynivalenol (DON) of imported maize and RSA YM2 as the values were very low or not detected.

The quality of the imported maize for the 2008/2009 season are given on pages 61 - 62.

South African Grain Information Service
Suid- Afrikaanse Graan Inligtingsdiens
Association incorporated under section 21 / Vereniging ingelyf kragtens artikel 21 (Reg No. 1997/019186/08)

MAIZE IMPORTS EXPORTS

2009/10 Season

Progressive: 2009/05/02 - 2010/04/30

Updated: 2010/06/25

WHITE MAIZE

Imported from:	Total Tons	Destined for:		
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	0	0	0	0
Africa	0	0	0	0
	0	0	0	0
Less: RSA for RSA	0	0	n/a	n/a
Total Imports	**0**	**0**	**0**	**0**

Exported from:	Total Tons	Destined for:		
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	1408048	0	1407016	1032
Africa	0	0	0	0
	1408048	0	1407016	1032
Less: RSA for RSA	0	0	n/a	n/a
Total Exports	**1408048**	**0**	**1407016**	**1032**

YELLOW MAIZE

Imported from:	Total Tons	Destined for:		
		RSA	Africa	Overseas
Overseas	27357	27357	0	0
RSA	0	0	0	0
Africa	0	0	0	0
	27357	27357	0	0
Less: RSA for RSA	0	0	n/a	n/a
Total Imports	**27357**	**27357**	**0**	**0**

Exported from:	Total Tons	Destined for:		
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	261608	0	164630	96978
Africa	0	0	0	0
	261608	0	164630	96978
Less: RSA for RSA	0	0	n/a	n/a
Total Exports	**261608**	**0**	**164630**	**96978**

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MAIZE IMPORTS / EXPORTS

2010/11 Season
Progressive: 2010/05/01 - 2011/02/18
Updated: 2011/02/25

WHITE MAIZE

Imported from:	**Total Tons**	**Destined for:**		
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	0	0	0	0
Africa	0	0	0	0
	0	0	0	0
Less: RSA for		0	0	n/a
	0	**0**	**0**	**0**

Exported from:	**Total Tons**			
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	636402	0	510296	126106
Africa	0	0	0	0
	636402	0	510296	126106
Less: RSA for	0	0	n/a	n/a
	636402	**0**	**510296**	**126106**

YELLOW MAIZE

Imported from:	**Total Tons**			
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	0	0	0	0
Africa	0	0	0	0
	0	0	0	0
Less: RSA for		0	0	n/a
	0	**0**	**0**	**0**

Exported from:	**Total Tons**			
		RSA	Africa	Overseas
Overseas	0	0	0	0
RSA	844865	0	105417	739448
Africa	0	0	0	0
	844865	0	105417	739448
Less: RSA for	0	0	n/a	n/a
	844865	**0**	**105417**	**739448**

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MAIZE IMPORTS / EXPORTS PER COUNTRY

2009/10 Season

Progressive: 2009/05/02 - 2010/04/30

Updated: 2010/06/25

WHITE MAIZE

COUNTRY	AFRICA Tons	COUNTRY	OVERSEAS Tons
Botswana	143652	Madagascar	1032
Cameroon	728		
Chad	989		
Congo	68		
Kenya	837315		
Lesotho	114454		
Mozambique	108541		
Namibia	75737		
Swaziland	24413		
Zimbabwe	101119		
	1407016		**1032**

YELLOW MAIZE

COUNTRY	AFRICA Tons	COUNTRY	OVERSEAS Tons
Botswana	27924	Iran	36803
Cameroon	2280	Madagascar	7450
Kenya	14997	Mauritius	86
Lesotho	3095	Malaysia	41933
Mozambique	24996	Seychelles	598
Namibia	24792	Kuwait	10108
Swaziland	51615		
Senegal	10897		
Zimbabwe	4034		
	164630		**96978**

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MAIZE IMPORTS / EXPORTS PER COUNTRY

2010/11 Season

Progressive: 2010/05/01 - 2011/02/18

Updated: 2011/02/25

WHITE MAIZE

COUNTRY	AFRICA Tons	COUNTRY	OVERSEAS Tons
Botswana	126586		
Cameroon	10477		
Chad	3182		
Guiniea	5000		
Kenya	40677		
Lesotho	96910		
Mozambique	59996		
Namibia	52974		
Nigeria	12500		
Somalia	27346		
Swaziland	41433		
Zimbabwe	33215		
		Italy	24407
		Korea	101699
	510296		**126106**

YELLOW MAIZE

COUNTRY	AFRICA Tons	COUNTRY	OVERSEAS Tons
Botswana	13372		
Cameroon	4796		
Lesotho	2832		
Mozambique	19734		
Namibia	16886		
Senegal	4330		
Swaziland	43287		
Zimbabwe	180		
		Japan	97880
		Korea	466799
		Kuwait	81798
		Madagascar	6427
		Mauritius	9585
		Spain	26039
		Taiwan	50920
	105417		**739448**

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MAIZE - WHITE '000 t

Updated: 22 Feb

May - Apr	1997/98	1998/99	199/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Projection Months: 12	2010/11 Actual May-Jan 9
Opening stock	838.0	947.0	513.0	609.0	1273.0	559.0	1718.0	2123.0	2402.0	2301.0	1630.0	618.0	762.0	1362.0	1362.0
Prod deliveries (a)	5183.0	4412.0	4652.0	6440.0	4636.0	5576.0	5845.0	5647.0	6108.0	4392.0	4309.0	7190.0	6737.0		7406.0
Crop estimate (b)	4614.0	4383.0	4391.0	6155.0	4109.8	5537.4	6365.6	5805.0	6540.7	4187.4	4315.0	7480.0	6775.0	6364.0	
Imports	5.0	0.0	0.0	0.0	47.0	274.0	33.0	0.0	0.0	1.0	46.0	0.0	0.0	0.0	0.0
Surplus	0.0	17.0	0.0	0.0	0.0	0.0	40.0	0.0	4.0	20.0	19.0	25.0	48.0	22.0	22.0
Available	**6026.0**	**5376.0**	**5165.0**	**7049.0**	**5956.0**	**6409.0**	**7636.0**	**7770.0**	**8514.0**	**6714.0**	**6004.0**	**7833.0**	**7547.0**	**7748.0**	**8790.0**
Processed	3584.0	3586.0	3687.0	4342.0	4202.0	3679.0	4212.0	4313.0	4186.0	4385.0	4751.0	4920.0	4562.0	5739.0	4304.0
-human	3316.0	3255.0	3235.0	3377.0	3630.0	3459.0	3467.0	3478.0	3559.0	3526.0	3552.0	4197.0	4132.0	4181.0	3136.0
-animal	268.0	331.0	452.0	783.0	446.0	105.0	641.0	733.0	543.0	787.0	1142.0	661.0	362.0	1498.7	1124.0
-gristing	n/a	n/a	n/a	182.0	126.0	115.0	104.0	102.0	84.0	72.0	57.0	62.0	68.0	59.0	44.0
-bio-fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producers	87.0	0.0	0.0	349.0	164.0	144.0	144.0	107.0	101.0	112.0	107.0	111.0	81.0	84.0	84.0
End consumers	0.0	0.0	222.0	96.0	64.0	40.0	76.0	181.0	71.0	80.0	69.0	45.0	62.0	137.0	137.0
Net receipts(-)/dispatch(+)	0.0	0.0	0.0	7.0	43.0	11.0	12.0	17.0	11.0	27.0	28.0	28.0	10.0	24.0	24.0
Deficit	0.0	0.0	58.0	121.0	112.0	0.0	0.0	38.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports	1119.0	1108.0	594.0	861.0	812.0	817.0	1069.0	712.0	1844.0	480.0	431.0	1963.0	1470.0	551.0	551.0
Utilised:	**4790.0**	**4694.0**	**4561.0**	**5776.0**	**5397.0**	**4691.0**	**5513.0**	**5368.0**	**6213.0**	**5084.0**	**5386.0**	**7067.0**	**6185.0**	**6535.0**	**5100.0**
Stock	**1236.0**	**682.0**	**604.0**	**1273.0**	**559.0**	**1718.0**	**2123.0**	**2402.0**	**2301.0**	**1630.0**	**618.0**	**766.0**	**1362.0**	**1213.0**	**3690.0**
- processed p/month	298.7	298.8	307.3	361.8	350.2	306.6	351.0	359.4	348.8	365.4	395.9	410.0	380.2	478.3	478.2
- months' stock	4.1	2.3	2.0	3.5	1.6	5.6	6.0	6.7	6.6	4.5	1.6	1.9	3.6	2.5	7.7

(a)1998/1999 and 1999/2000 Includes storage on behalf of producers

(b)Estimates of Department of Agriculture's (DAFF) Crop Estimates Committee

Last report:
24 Feb 2011

South African Grain Information Service
Suid- Afrikaanse Graan Inligtingsdiens

Association incorporated under section 21 / Vereniging ingelyf kragtens artikel 21 (Reg No. 1997/019186/08)

MAIZE -YELLOW '000 t

Updated: 22 Feb 2011

May - Apr	1997/98	1998/99	199/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Projection Months: 12	**2010/11** Actual May-Jan 9
Opening stock	445.0	1002.0	334.0	374.0	842.0	643.0	992.0	501.0	746.0	868.0	440.0	431.0	819.0	769.0	769.0
Prod deliveries (a)	4549.0	2442.0	2423.0	3969.0	3300.0	3734.0	2564.0	3446.0	3947.0	2315.0	2573.0	4701.0	4892.0		4349.0
Crop estimate (b)	3874.0	2699.0	2625.0	3986.0	3115.4	4194.4	3025.9	3677.0	4909.3	2430.6	2810.0	5220.0	5275.0	4680.0	
Imports	104.0	98.0	569.0	0.0	348.0	651.0	408.0	219.0	360.0	930.0	1074.0	27.0	27.0	0.0	0.0
Surplus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	10.0	5.0	20.0	0.0	17.0
Available	**5098.0**	**3542.0**	**3326.0**	**4343.0**	**4490.0**	**5028.0**	**3964.0**	**4166.0**	**5053.0**	**4125.0**	**4097.0**	**5164.0**	**5758.0**	**5449.0**	**5135.0**
Processed	2799.0	2755.0	2675.0	2510.0	2949.0	3304.0	3031.0	2970.0	3276.0	3275.0	3279.0	3683.0	4103.0	3126.3	2345.0
-human	94.0	126.0	191.0	212.0	247.0	249.0	245.0	262.0	266.0	290.0	257.0	326.0	346.0	340.0	255.0
-animal	2705.0	2629.0	2484.0	2285.0	2700.0	3050.0	2775.0	2694.0	2994.0	2976.0	3016.0	3350.0	3739.0	2769.3	2077.0
-gristing	n/a	n/a	n/a	13.0	2.0	5.0	11.0	14.0	16.0	9.0	6.0	7.0	18.0	17.0	13.0
-bio-fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producers	124.0	0.0	0.0	151.0	161.0	157.0	155.0	148.0	214.0	129.0	110.0	162.0	210.0	128.0	128.0
End consumers	0.0	0.0	201.0	171.0	150.0	166.0	148.0	170.0	269.0	155.0	161.0	175.0	316.0	244.0	244.0
Net receipts(-)/dispatch(+)	0.0	0.0	0.0	-5.0	20.0	24.0	13.0	1.0	17.0	9.0	14.0	22.0	41.0	15.0	15.0
Deficit	0.0	115.0	21.0	47.0	44.0	14.0	0.0	11.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports	802.0	280.0	58.0	627.0	523.0	371.0	116.0	120.0	393.0	117.0	102.0	303.0	319.0	875.0	875.0
Utilised:	**3725.0**	**3150.0**	**2955.0**	**3501.0**	**3847.0**	**4036.0**	**3463.0**	**3420.0**	**4185.0**	**3685.0**	**3666.0**	**4345.0**	**4989.0**	**4388.3**	**3607.0**
Stock	**1373.0**	**392.0**	**371.0**	**842.0**	**643.0**	**992.0**	**501.0**	**746.0**	**868.0**	**440.0**	**431.0**	**819.0**	**769.0**	**1060.7**	**1528.0**
- processed p/month	233.3	229.6	222.9	209.2	245.8	275.3	252.6	247.5	273.0	272.9	273.3	306.9	4103.0	260.5	260.6
- months' stock	5.9	1.7	1.7	4.0	2.6	3.6	2.0	3.0	3.2	1.6	1.6	2.7	0.2	4.1	5.9

(a) 1998/1999 and 1999/2000 Includes storage on behalf of producers

(b) Estimates of Department of Agriculture's (DAFF) Crop Estimates Committee

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South African Grain Information Service
Suid- Afrikaanse Graan Inligtingsdiens
Association incorporated under section 21 / Vereniging ingelyf kragtens artikel 21 (Reg No. 1997/019186/08)

MAIZE - TOTAL '000 t

Updated: 22 Feb 2011

May - Apr	1997/98	1998/99	199/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Projection Months: 12	**2010/11** Actual May-Jan 9
Opening stock	1283.0	1949.0	847.0	983.0	2115.0	1202.0	2710.0	2624.0	3148.0	3169.0	2070.0	1049.0	1581.0	2131.0	2131.0
Prod deliveries (a)	9732.0	6854.0	7075.0	10409.0	7936.0	9310.0	8409.0	9093.0	10055.0	6707.0	6882.0	11891.0	11629.0		11755.0
Crop estimate (b)	8488.0	7082.0	7016.0	10141.0	7225.2	9731.8	9391.5	9482.0	11450.0	6618.0	7125.0	12700.0	12050.0	11044.0	0.0
	109.0	98.0	569.0	0.0	395.0	925.0	441.0	219.0	360.0	931.0	1120.0	27.0	27.0	0.0	0.0
Surplus	0.0	17.0	0.0	0.0	0.0	0.0	40.0	0.0	4.0	32.0	29.0	30.0	68.0	22.0	39.0
Available	**11124.0**	**8918.0**	**8491.0**	**11392.0**	**10446.0**	**11437.0**	**11600.0**	**11936.0**	**13567.0**	**10839.0**	**10101.0**	**12997.0**	**13305.0**	**13197.0**	**13925.0**
Processed	6383.0	6341.0	6362.0	6852.0	7151.0	6983.0	7243.0	7283.0	7462.0	7660.0	8030.0	8603.0	8665.0	8865.0	6649.0
-human	3410.0	3381.0	3426.0	3589.0	3877.0	3708.0	3712.0	3740.0	3825.0	3816.0	3809.0	4523.0	4478.0	4521.0	3391.0
-animal	2973.0	2960.0	2936.0	3068.0	3146.0	3155.0	3416.0	3427.0	3537.0	3763.0	4158.0	4011.0	4101.0	4268.0	3201.0
-gristing	n/a	n/a	n/a	195.0	128.0	120.0	115.0	116.0	100.0	81.0	63.0	69.0	86.0	76.0	57.0
-bio-fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Producers	211.0	0.0	0.0	500.0	325.0	301.0	299.0	255.0	315.0	241.0	217.0	273.0	291.0	212.0	212.0
End consumers	0.0	0.0	423.0	267.0	214.0	206.0	224.0	351.0	340.0	235.0	230.0	220.0	378.0	381.0	381.0
Net receipts(-)/dispatch(+)	0.0	0.0	0.0	2.0	63.0	35.0	25.0	18.0	28.0	36.0	42.0	50.0	51.0	39.0	39.0
Deficit	0.0	115.0	79.0	168.0	156.0	14.0	0.0	49.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0
Exports	1921.0	1388.0	652.0	1488.0	1335.0	1188.0	1185.0	832.0	2237.0	597.0	533.0	2266.0	1789.0	1426.0	1426.0
Utilised:	**8515.0**	**7844.0**	**7516.0**	**9277.0**	**9244.0**	**8727.0**	**8976.0**	**8788.0**	**10398.0**	**8769.0**	**9052.0**	**11412.0**	**11174.0**	**10923.3**	**8707.0**
Stock	**2609.0**	**1074.0**	**975.0**	**2115.0**	**1202.0**	**2710.0**	**2624.0**	**3148.0**	**3169.0**	**2070.0**	**1049.0**	**1585.0**	**2131.0**	**2273.7**	**5218.0**
- processed p/month	531.9	528.4	530.2	571.0	595.9	581.9	603.6	606.9	621.8	638.3	669.2	716.9	722.1	738.8	738.8
- months' stock	4.9	2.0	1.8	3.7	2.0	4.7	4.3	5.2	5.1	3.2	3.2	4.6	3.0	6.6	13.6

(a) 1998/1999 and 1999/2000 Includes storage on behalf of producers

(b) Estimates of Department of Agriculture's (DAFF) Crop Estimates Committee

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Grain Production Regions

Grain Handlers with specific silos are given with each region.

Region 10: Griqualand West Region

GWK	Douglas	*GWK*	Prieska
GWK	Rietrivier	*GWK*	Marydale
GWK	Modderrivier	*OVK*	Oranjerivierstasie
OVK	Havenga Brug		

Region 11: Vaalharts Region

Senwes	Hartswater	*Senwes*	Jan Kemp
Senwes	Magogong	*GWK*	Barkly-Wes

Region 12: North West Western Region

NWK	Blaauwbank	*NWK*	Buhrmannsdrif
NWK	Kameel	*NWK*	Madibogo
NWK	Mafikeng	*NWK*	Mareetsane
Suidwes Landbou	Kameel	*Suidwes Landbou*	Vryburg

Region 13: North West Central Region (Sannieshof)

NWK	Biesiesvlei	*NWK*	Bossies
NWK	Gerdau	*NWK*	Oppaslaagte
NWK	Sannieshof		

Region 14: North West Southern Region

NWK	Barberspan	*NWK*	Delareyville
NWK	Excelsior	*NWK*	Geysdorp
NWK	Migdol	*NWK*	Nooitgedacht
NWK	Taaibospan	*Suidwes Landbou*	Amalia
Suidwes Landbou	Hallat's Hope	*Suidwes Landbou*	Migdol
Suidwes Landbou	Schweizer-Reneke		

Region 15: North West South Eastern Region

Suidwes Landbou	Bloemhof	*Suidwes Landbou*	Christiana
Suidwes Landbou	Hertzogville	*Suidwes Landbou*	Hoopstad
Suidwes Landbou	Kingswood		

Region 16: North West Central Eastern Region

Senwes	Regina	*Senwes*	Klerksdorp
Suidwes Landbou	Bamboesspruit	*Suidwes Landbou*	Leeudoringstad
Suidwes Landbou	Makwassie	*Suidwes Landbou*	Strydpoort
Suidwes Landbou	Wolmaranstad		

Region 17: North West Central Northern Region (Ottosdal)

NWK	Boschpoort	*NWK*	Rostrataville
NWK	Ottosdal	*NWK*	Kleinharts

Grain Production Regions (continue)

Grain Handlers with specific silos are given with each region.

Region 17: North West Central Northern Region (Ottosdal) (continue)

NWK	Vermaas	*Senwes*	Hartbeesfontein
Senwes	Melliodora	*Senwes*	Werda

Region 18: North West Central Region (Ventersdorp)

NWK	Bodenstein	*NWK*	Coligny
Senwes	Buckingham	*Senwes*	Makokskraal
Senwes	Ventersdorp	*Senwes*	Enselspruit
Senwes	Potchefstroom		

Region 19: North West Central Region (Lichtenburg)

NWK	Grootpan	*NWK*	Halfpad
NWK	Hibernia	*NWK*	Lichtenburg
NWK	Lottiehalte	*NWK*	Lusthof

Region 20: North West Eastern Region

Prodsure	Battery	*Prodsure*	Brits
Prodsure	Rustenburg	*Prodsure*	Pretoria-West
NWK	Boons	*NWK*	Koster
NWK	Derby	*NWK*	Syferbult
NWK	Swartruggens	*NWK*	Groot Marico

Region 21: Free State North Western Region (Viljoenskroon)

Senwes	Attie	*Senwes*	Groenebloem
Senwes	Heuningspruit	*Senwes*	Koppies
Senwes	Rooiwal	*Senwes*	Vierfontein
Senwes	Viljoenskroon	*Senwes*	Vredefort
Senwes	Weiveld		

Region 22: Free State North Western Region (Bothaville)

Senwes	Allanrigde	*Senwes*	Bothaville
Senwes	Mirage	*Senwes*	Odendaalsrus
Senwes	Schoonspruit	*Senwes*	Schuttesdraai

Region 23: Free state North Western Region (Bultfontein)

Senwes	Bultfontein	*Senwes*	Losdoorns
Senwes	Protespan	*Senwes*	Tierfontein
Senwes	Wesselsbron	*Senwes*	Willemsrust

Region 24: Free State Central Region

Senwes	Bloemfontein	*Senwes*	Brandfort
Senwes	De Brug	*Senwes*	Geneva
Senwes	Hennenman	*Senwes*	Koffiefontein

Grain Production Regions (continue)

Grain Handlers with specific silos are given with each region.

Region 24: Free State Central Region (continue)

Senwes	Kroonstad	*Senwes*	Petrusburg
Senwes	Theunissen	*Senwes*	Van Tonder
Senwes	Welgeleë	*Senwes*	Winburg
Senwes	Bainsvlei		

Region 25: Free State South Western Region

OVK	Marseilles	*OVK*	Modderpoort
OVK	Tweespruit	*OVK*	Westminster
OVK	Zastron	*OVK*	Clocolan
OVK	Ficksburg	*OVK*	Fouriesburg
OVK	Havenga Brug	*Afgri*	Bethlehem
Afgri	Slabberts	*Senwes*	De Wetsdorp

Region 26: Free State South Eastern Region

Senwes	Arlington	*Senwes*	Steynsrus
Afgri	Libertas	*Afgri*	Marquard
Afgri	Monte Video	*Afgri*	Senekal
Afgri	Kaallaagte	*Afgri*	Meets

Region 27: Free State Northern Region

Senwes	Gottenburg	*Senwes*	Heilbron
Senwes	Hoogte	*Senwes*	Mooigeleë
Senwes	Wolwehoek	*VKB*	Petrus Steyn

Region 28: Free State Eastern Region

Afgri	Afrikaskop	*Afgri*	Eeram
Afgri	Harrismith	*Afgri*	Kransfontein
VKB	Cornelia	*VKB*	Daniëlsrus
VKB	Frankfort	*VKB*	Jim Fouché
VKB	Reitz	*VKB*	Tweeling
VKB	Villiers	*VKB*	Warden
VKB	Windfield	*VKB*	Ascent
VKB	Robbertdrif	*VKB*	Vrede
VKB	Memel		

Region 29: Mpumalanga Southern Region

Afgri	Balfour	*Afgri*	Greylingstad
Afgri	Grootvlei	*Afgri*	Harvard
Afgri	Holmdene	*Afgri*	Leeuspruit
Afgri	Platrand	*Afgri*	Standerton
Afgri	Val		

Region 30: Mpumalanga Eastern Region

Afgri	Amersfoort	*Afgri*	Badplaas
Afgri	Carolina	*Afgri*	Davel

Grain Production Regions (continue)

Grain Handlers with specific silos are given with each region.

Region 30: Mpumalanga Eastern Region (continue)

Afgri	Ermelo	*Afgri*	Estancia
Afgri	Lothair	*Afgri*	Maizefield
Afgri	Morgenzon	*Afgri*	Overvaal
TWK	Mkondo	*TWK*	Panbult

Region 31: Mpumalanga Central Region

Afgri	Bethal	*Afgri*	Devon
Afgri	Kinross	*Afgri*	Leandra
Afgri	Trichardt		

Region 32: Mpumalanga Western Region

Afgri	Argent	*Afgri*	Dryden
Afgri	Endicott	*Afgri*	Eloff
Afgri	Hawerklip	*Afgri*	Kendal
Afgri	Ogies		

Region 33: Mpumalanga Northern Region

Afgri	Driefontein	*Afgri*	Lydenburg
Afgri	Marble Hall	*Afgri*	Middelburg
Afgri	Stoffberg	*Afgri*	Pan
Afgri	Arnot	*Afgri*	Wonderfontein

Region 34: Gauteng Region

Afgri	Bloekomspruit	*Afgri*	Glenroy
Afgri	Goeie Hoek	*Afgri*	Kaalfontein
Afgri	Nigel	*Afgri*	Bronkhorstspruit
Senwes	Middelvlei	*Senwes*	Oberholzer
Senwes	Raathsvlei		Randfontein

Region 35: Limpopo Region

Prodsure	Northam	*NTK*	Alma
NTK	Lehau	*NTK*	Naboomspruit
NTK	Nylstroom	*NTK*	Pienaarsrivier
NTK	Pietersburg	*NTK*	Potgietersrus
NTK	Roedtan	*NTK*	Settlers
NTK	Tzaneen	*NTK*	Nutfield
NTK	Warmbad	*NTK*	Vaalwater
NTK	Crecy	*NTK*	Immerpan

Region 36: KwaZulu-Natal Region

Afgri	Bergville	*Afgri*	Bloedrivier
Afgri	Dannhauser	*Afgri*	Dundee
Afgri	Mizpah	*Afgri*	Paulpietersburg
Afgri	Vryheid	*Afgri*	Winterton
	Dalton		

TABLE 1: COMMERCIAL WHITE AND YELLOW MAIZE - FINAL PRODUCTION ESTIMATES FOR THE 2009/10 SEASON COMPARED TO THE 2008/09 SEASON

PROVINCES	FINAL ESTIMATE 2009/10			% difference between 2008/09 and 2009/10	FINAL ESTIMATE 2008/09		
	White Tons	Yellow Tons	Total Tons		White Tons	Yellow Tons	Total Tons
Western Cape	3 500	14 000	17 500	-65	15 000	35 000	50 000
Northern Cape	23 000	586 000	609 000	1	28 750	576 000	604 750
Free State	3 174 000	1 902 000	5 076 000	15	2 627 250	1 794 000	4 421 250
Eastern Cape	14 500	66 000	80 500	-8	15 900	71 500	87 400
KwaZulu-Natal	272 000	252 000	524 000	2	248 000	264 600	512 600
Mpumalanga	1 370 000	1 375 000	2 745 000	-1	1 290 000	1 493 400	2 783 400
Limpopo	130 000	80 000	210 000	-14	171 600	72 000	243 600
Gauteng	493 000	192 000	685 000	35	358 800	150 000	508 800
North West	2 350 000	518 000	2 868 000	13	2 016 000	513 000	2 529 000
Total RSA	7 830 000	4 985 000	12 815 000	9	6 771 300	4 969 500	11 740 800
% of crop	61	39			58	42	
Figures obtained from the National Crop Estimates Committee							

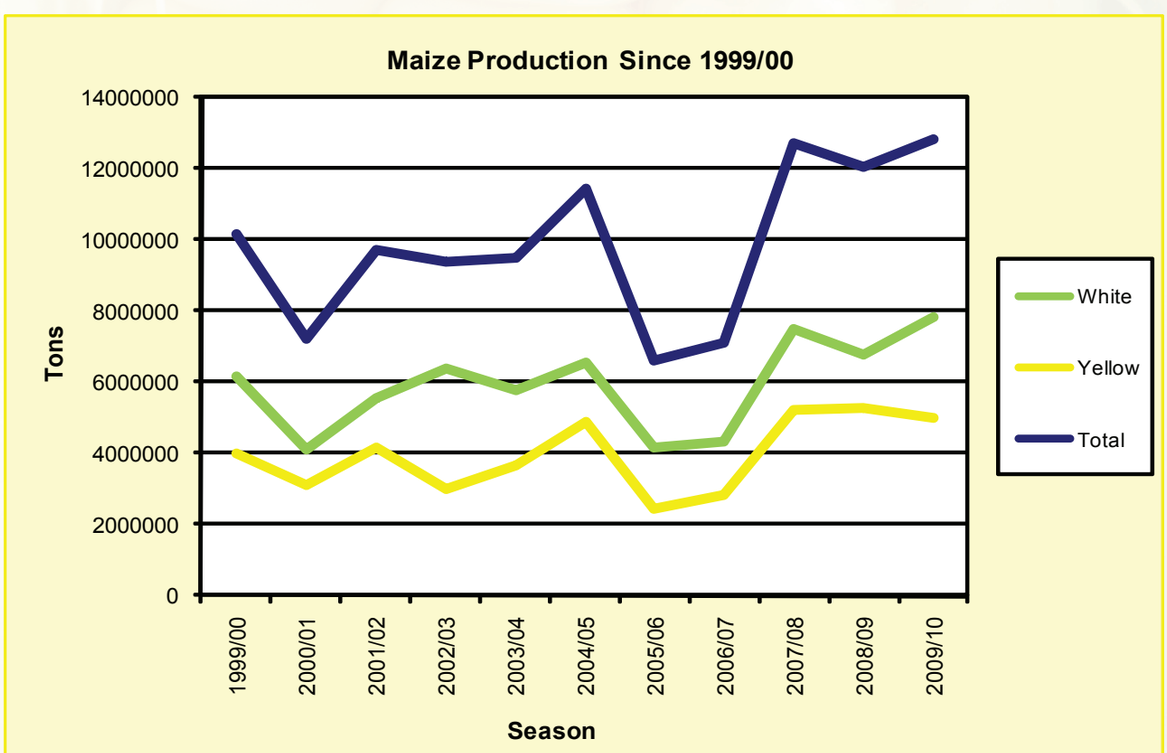


TABLE 2: RSA GRADING OF WHITE MAIZE (2009/2010)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Other Colour			% Total Deviation			% Pinked Kernels			% Diplodia Kernels			% Fusarium Kernels			% Cobrot Kernels		
		Above 6.35 mm sieve			Below 6.35 mm sieve																										
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1																														
1	Region 11	2.8	2.8	2.8	1.2	1.2	1.2	4.0	4.0	4.0	0.2	0.2	0.2	0.0	0.0	0.0	4.2	4.2.	4.2	0.0	0.0	0.0	0.2	0.2	0.2	0.5	0.5	0.5	0.2	0.2	0.2
8	Region 12	3.9	2.3	5.5	1.1	0.4	1.7	5.0	3.4	6.6	0.2	0.1	0.2	0.2	0.0	1.3	5.3	3.5	8.0	0.0	0.0	0.0	1.2	0.4	2.3	0.7	0.2	1.1	0.1	0.0	0.4
6	Region 13	3.7	3.3	4.3	1.4	0.5	2.1	5.1	4.1	6.0	0.1	0.1	0.2	0.1	0.0	0.4	5.3	4.2	6.2	0.0	0.0	0.0	1.2	0.9	1.5	0.5	0.4	0.7	0.0	0.0	0.2
11	Region 14	3.1	1.8	4.2	0.9	0.2	1.7	4.0	2.1	5.9	0.1	0.0	0.2	0.1	0.0	0.5	4.2	2.1	6.1	0.0	0.0	0.0	0.7	0.0	1.7	0.3	0.0	0.8	0.2	0.0	0.6
13	Region 15	3.7	1.0	5.5	1.4	0.4	3.2	5.1	1.3	6.2	0.2	0.0	0.2	0.0	0.0	0.2	5.3	1.4	6.5	0.0	0.0	0.0	0.9	0.0	1.4	0.4	0.0	1.2	0.2	0.0	0.7
18	Region 16	3.7	2.5	5.4	1.1	0.5	2.6	4.8	3.0	6.4	0.1	0.0	0.3	0.1	0.0	0.3	5.0	3.0	6.8	0.0	0.0	0.0	1.0	0.6	1.7	0.4	0.0	0.8	0.1	0.0	0.8
10	Region 17	3.7	2.5	4.8	1.2	0.3	1.7	4.9	3.5	6.4	0.2	0.1	0.3	0.1	0.0	0.4	5.2	3.9	6.9	0.0	0.0	0.0	1.0	0.0	1.7	0.7	0.2	0.9	0.1	0.0	0.5
8	Region 18	3.3	2.0	4.1	1.1	0.2	1.9	4.3	2.2	5.6	0.1	0.1	0.2	0.2	0.0	0.6	4.6	2.3	6.4	0.0	0.0	0.0	0.9	0.0	1.7	0.6	0.3	1.1	0.1	0.0	0.2
5	Region 19	3.5	2.8	4.0	1.4	0.8	2.3	4.9	4.7	5.1	0.1	0.1	0.2	0.0	0.0	0.2	5.1	4.8	5.5	0.0	0.0	0.0	1.2	0.6	1.7	0.5	0.4	0.6	0.0	0.0	0.2
5	Region 20	4.4	3.9	5.3	1.2	0.3	2.0	5.6	4.7	6.3	0.1	0.0	0.1	0.1	0.0	0.5	5.8	4.8	6.6	0.0	0.0	0.0	1.6	1.3	1.8	0.8	0.5	0.9	0.1	0.0	0.5
25	Region 21	3.2	1.5	5.9	1.4	0.5	3.0	4.6	3.2	6.9	0.1	0.0	0.2	0.2	0.0	0.9	5.0	3.3	7.6	0.0	0.0	0.0	0.7	0.0	2.2	0.7	0.2	1.0	0.1	0.0	0.5
6	Region 22	4.3	3.8	4.7	1.0	0.5	1.9	5.3	4.5	6.2	0.1	0.1	0.2	0.2	0.0	0.6	5.6	5.0	6.5	0.0	0.0	0.0	1.3	0.9	1.7	0.8	0.4	1.3	0.2	0.0	0.6
21	Region 23	3.8	2.2	5.8	1.2	0.2	2.8	5.0	2.4	6.9	0.2	0.1	0.2	0.1	0.0	0.4	5.2	2.6	7.0	0.0	0.0	0.0	1.0	0.0	2.0	0.8	0.4	1.5	0.1	0.0	0.6
20	Region 24	3.6	1.7	5.7	1.6	0.6	3.9	5.2	2.6	7.0	0.1	0.0	0.2	0.1	0.0	0.2	5.4	2.7	7.4	0.0	0.0	0.0	0.8	0.2	1.7	0.6	0.2	1.2	0.1	0.0	0.4
14	Region 25	3.7	2.2	5.5	1.4	0.3	2.5	5.1	3.4	6.5	0.1	0.0	0.2	0.1	0.0	0.5	5.3	3.4	6.7	0.0	0.0	0.0	1.0	0.5	1.7	0.7	0.3	1.3	0.2	0.0	1.3
12	Region 26	3.2	1.7	6.4	1.3	0.2	2.7	4.2	2.5	6.6	0.2	0.1	0.3	0.2	0.0	0.8	4.6	2.7	7.6	0.0	0.0	0.0	0.9	0.4	1.3	0.5	0.0	0.8	0.1	0.0	0.4
2	Region 27	3.2	2.8	3.7	1.8	0.7	2.9	5.0	4.4	5.7	0.1	0.1	0.1	0.1	0.0	0.2	5.3	4.5	6.0	0.0	0.0	0.0	0.6	0.0	1.3	0.8	0.4	1.1	0.0	0.0	0.0
25	Region 28	3.1	1.7	5.0	1.2	0.4	2.0	4.3	2.9	6.5	0.1	0.0	0.2	0.1	0.0	0.4	4.6	3.0	6.9	0.0	0.0	0.0	0.9	0.3	1.6	0.5	0.0	1.0	0.2	0.0	0.6
26	Region 29	3.0	1.7	5.5	1.4	0.9	2.8	4.4	2.9	6.5	0.1	0.0	0.3	0.2	0.0	0.7	4.7	3.0	7.2	0.0	0.0	0.0	0.9	0.4	1.8	0.6	0.2	1.1	0.1	0.0	1.4
14	Region 30	2.5	1.2	3.4	1.2	0.5	1.9	3.6	1.7	5.1	0.1	0.0	0.1	0.1	0.0	0.4	3.8	1.8	5.6	0.0	0.0	0.0	0.6	0.0	1.3	0.5	0.0	0.9	0.0	0.0	0.2
5	Region 31	3.9	3.0	5.2	1.4	1.1	1.6	5.3	4.2	6.8	0.1	0.1	0.1	0.3	0.0	0.4	5.7	4.7	7.3	0.0	0.0	0.0	1.3	0.8	1.7	0.7	0.6	0.8	0.1	0.0	0.2
17	Region 32	3.9	2.0	5.7	1.2	0.3	2.4	5.0	3.7	6.4	0.1	0.0	0.1	0.0	0.0	0.2	5.1	3.7	6.5	0.0	0.0	0.0	1.2	0.0	2.1	0.7	0.2	1.3	0.0	0.0	0.2
3	Region 33	3.7	2.5	5.8	1.1	1.0	1.3	4.8	3.6	7.0	0.1	0.1	0.2	0.1	0.0	0.4	5.1	3.7	7.6	0.0	0.0	0.0	1.2	0.8	1.8	0.6	0.4	0.9	0.1	0.0	0.2
10	Region 34	3.5	2.4	4.6	1.2	0.8	1.6	4.7	3.5	5.9	0.1	0.1	0.2	0.1	0.0	0.4	4.9	3.6	6.4	0.0	0.0	0.0	1.1	0.7	1.3	0.6	0.0	1.1	0.0	0.0	0.2
7	Region 35	2.4	1.8	4.6	1.8	0.3	3.7	4.2	2.6	5.5	0.1	0.0	0.2	0.2	0.0	1.1	4.5	2.6	6.6	0.0	0.0	0.0	0.5	0.2	1.0	0.4	0.3	0.4	0.0	0.0	0.2
15	Region 36	3.0	2.2	3.8	1.3	0.8	1.6	4.3	3.6	5.4	0.1	0.1	0.2	0.1	0.0	0.9	4.6	3.6	6.1	0.0	0.0	0.0	1.0	0.2	1.6	0.6	0.4	0.9	0.0	0.0	0.0
307	**Ave WM 1**	**3.4**			**1.3**			**4.7**			**0.1**			**0.1**			**4.9**			**0.0**			**0.9**			**0.6**			**0.1**		
	Min WM 1		**1.0**			**0.2**			**1.3**			**0.0**			**0.0**			**1.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM 1			**6.4**			**3.9**			**7.0**			**0.3**			**1.3**			**8.0**			**0.0**			**2.3**			**1.5**			**1.4**

TABLE 2: RSA GRADING OF WHITE MAIZE (2009/2010)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Other Colour			% Total Deviation			% Pinked Kernels			% Diplodia Kernels			% Fusarium Kernels			% Cobrot Kernels		
		Above 6.35 mm sieve			Below 6.35 mm sieve																										
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2																														
1	Region 11	5.8	5.8	5.8	1.6	1.6	1.6	7.4	7.4	7.4	0.2	0.2	0.2	0.5	0.5	0.5	8.1	8.1	8.1	0.0	0.0	0.0	0.5	0.5	0.5	1.1	1.1	1.1	0.2	0.2	0.2
1	Region 12	7.6	7.6	7.6	1.0	1.0	1.0	8.6	8.6	8.6	0.1	0.1	0.1	0.7	0.7	0.7	9.4	9.4	9.4	0.0	0.0	0.0	2.6	2.6	2.6	1.3	1.3	1.3	0.4	0.4	0.4
2	Region 13	7.9	4.9	10.9	2.5	0.4	4.6	10.4	9.6	11.3	0.2	0.1	0.2	0.2	0.0	0.4	10.8	9.8	11.9	0.0	0.0	0.0	2.6	1.3	3.8	0.9	0.4	1.3	0.1	0.0	0.2
7	Region 14	7.6	4.2	10.2	1.1	0.5	2.1	9.0	7.5	11.4	0.1	0.0	0.2	0.2	0.0	0.5	9.3	7.7	11.9	0.0	0.0	0.0	2.2	1.4	3.0	1.2	0.7	1.4	0.6	0.2	1.3
6	Region 15	6.3	5.3	7.4	1.6	1.1	2.4	7.9	7.5	8.6	0.1	0.1	0.2	0.1	0.0	0.2	8.2	7.7	9.0	0.0	0.0	0.0	1.8	1.0	2.4	1.0	0.8	1.2	0.3	0.0	0.7
4	Region 16	6.7	5.4	8.9	1.5	0.8	2.0	8.2	7.4	9.7	0.1	0.0	0.2	0.2	0.0	0.2	8.5	7.8	10.1	0.0	0.0	0.0	2.1	1.6	3.3	0.7	0.4	1.2	0.2	0.0	0.4
3	Region 17	9.2	8.0	9.9	0.8	0.3	1.2	10.1	9.2	10.9	0.1	0.1	0.2	0.1	0.0	0.2	10.2	9.5	11.0	0.0	0.0	0.0	3.3	2.5	4.0	1.1	0.8	1.5	0.7	0.5	0.9
4	Region 18	9.0	5.9	12.2	1.1	0.4	1.7	10.1	7.5	12.6	0.2	0.2	0.3	0.2	0.0	0.4	10.5	8.2	12.8	0.0	0.0	0.0	3.9	3.0	4.9	1.2	0.9	1.6	0.7	0.2	1.2
4	Region 19	8.0	6.9	10.3	1.3	0.8	2.3	9.2	7.9	11.1	0.2	0.1	0.2	0.1	0.0	0.2	9.5	8.3	11.3	0.0	0.0	0.0	3.0	2.1	3.5	1.0	0.8	1.6	0.3	0.0	0.7
3	Region 20	10.1	9.2	10.8	0.7	0.3	0.9	10.7	10.0	11.1	0.1	0.0	0.1	0.3	0.0	0.4	11.1	10.5	11.5	0.0	0.0	0.0	3.5	2.6	4.3	1.9	1.3	2.3	0.5	0.4	0.7
3	Region 21	4.0	2.6	5.8	6.3	2.0	9.4	10.3	7.8	12.0	0.2	0.2	0.3	0.4	0.0	1.1	10.9	7.9	12.6	0.0	0.0	0.0	0.9	0.4	1.7	0.9	0.9	0.9	0.3	0.0	0.8
4	Region 22	6.6	3.0	10.5	3.2	1.4	6.6	9.8	7.3	12.7	0.2	0.1	0.3	0.4	0.0	1.3	10.4	7.5	14.3	0.0	0.0	0.0	1.9	0.8	3.9	0.8	0.0	1.7	0.2	0.0	0.4
9	Region 23	7.3	4.6	10.5	2.0	0.8	4.1	9.3	7.2	13.0	0.2	0.1	0.2	0.4	0.0	2.2	9.9	7.4	15.5	0.0	0.0	0.0	2.4	1.3	4.3	1.0	0.4	1.7	0.2	0.0	0.8
11	Region 24	6.3	5.0	8.0	2.2	1.2	4.3	8.5	7.1	11.4	0.2	0.1	0.3	0.2	0.0	1.2	8.9	7.2	11.7	0.0	0.0	0.0	2.2	1.7	2.8	1.0	0.5	1.4	0.1	0.0	0.5
8	Region 25	6.7	4.2	8.6	2.2	1.0	4.5	8.9	7.3	10.2	0.2	0.1	0.3	1.1	0.0	5.1	10.2	7.5	14.3	0.0	0.0	0.0	1.7	1.0	3.0	1.2	0.9	2.5	0.3	0.0	0.6
5	Region 26	7.7	5.1	9.0	2.1	0.9	3.2	9.8	8.3	11.1	0.2	0.1	0.3	0.3	0.0	1.0	10.4	8.6	11.6	0.0	0.0	0.0	1.8	1.1	3.0	1.0	0.5	1.5	0.4	0.0	0.7
4	Region 27	6.6	5.4	8.6	1.3	0.5	2.7	7.9	7.1	9.1	0.1	0.0	0.2	0.3	0.2	0.4	8.3	7.3	9.5	0.0	0.0	0.0	2.2	1.2	3.4	1.0	0.7	1.6	0.3	0.0	0.4
11	Region 28	7.1	3.9	10.9	2.2	1.0	3.9	9.2	7.3	11.8	0.2	0.1	0.3	0.6	0.0	1.4	10.0	8.2	11.9	0.0	0.0	0.0	2.0	0.4	3.6	1.4	0.4	2.7	0.7	0.0	1.8
6	Region 29	7.0	5.2	9.1	1.8	1.4	2.2	8.8	7.5	10.8	0.2	0.1	0.3	0.4	0.0	0.8	9.4	7.6	11.5	0.0	0.0	0.0	1.8	1.3	2.2	1.1	0.6	1.7	0.4	0.0	0.6
4	Region 30	7.5	5.6	8.9	1.7	1.1	2.5	9.2	7.3	10.9	0.2	0.2	0.2	0.7	0.0	2.1	10.1	8.2	13.3	0.0	0.0	0.0	2.6	2.0	3.1	0.9	0.7	1.1	0.2	0.0	0.4
9	Region 31	7.5	3.7	10.9	1.7	0.9	2.5	9.2	6.2	12.0	0.2	0.1	0.3	0.7	0.0	4.6	10.1	7.5	12.4	0.0	0.0	0.0	2.2	1.2	3.6	0.9	0.4	1.5	0.2	0.0	0.4
8	Region 32	7.1	4.5	9.7	2.1	0.3	4.7	9.2	7.2	12.9	0.1	0.0	0.2	0.2	0.0	0.4	9.5	7.5	13.3	0.0	0.0	0.0	2.5	1.3	3.5	0.9	0.4	1.4	0.2	0.0	0.7
1	Region 33	6.5	6.5	6.5	0.9	0.9	0.9	7.3	7.3	7.3	0.1	0.1	0.1	0.0	0.0	0.0	7.5	7.5	7.5	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0
6	Region 34	8.9	5.5	11.6	1.4	1.1	1.7	10.3	7.2	12.8	0.2	0.0	0.3	0.2	0.0	0.5	10.6	7.4	13.2	0.0	0.0	0.0	2.9	1.7	4.0	1.1	0.4	1.4	0.3	0.0	0.7
1	Region 35	3.5	3.5	3.5	4.7	4.7	4.7	8.2	8.2	8.2	0.2	0.2	0.2	0.0	0.0	0.0	8.4	8.4	8.4	0.0	0.0	0.0	0.8	0.8	0.8	1.0	1.0	1.0	0.4	0.4	0.4
1	Region 36	6.0	6.0	6.0	1.6	1.6	1.6	7.6	7.6	7.6	0.2	0.2	0.2	0.5	0.5	0.5	8.3	8.3	8.3	0.0	0.0	0.0	2.1	2.1	2.1	0.5	0.5	0.5	0.2	0.2	0.2
126	**Ave WM 2**	**7.2**			**1.9**			**9.1**			**0.2**			**0.4**			**9.7**			**0.0**			**2.2**			**1.1**			**0.3**		
	Min WM 2		**2.6**			**0.3**			**6.2**			**0.0**			**0.0**			**7.2**			**0.0**			**0.4**			**0.0**			**0.0**	
	Max WM 2			**12.2**			**9.4**			**13.0**			**0.3**			**5.1**			**15.5**			**0.0**			**4.9**			**2.7**			**1.8**

TABLE 2: RSA GRADING OF WHITE MAIZE (2009/2010) (continue)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Other Colour			% Total Deviation			% Pinked Kernels			% Diplodia Kernels			% Fusarium Kernels			% Cobrot Kernels		
		Above 6.35 mm sieve			Below 6.35 mm sieve																										
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																														
2	Region 12	18.2	14.7	21.6	0.7	0.5	0.9	18.9	15.6	22.2	0.1	0.1	0.2	2.1	0.9	3.3	21.1	19.1	23.1	0.0	0.0	0.0	6.4	4.6	8.1	2.7	2.0	3.4	0.9	0.5	1.3
1	Region 13	7.5	7.5	7.5	14.0	14.0	14.0	21.5	21.5	21.5	0.3	0.3	0.3	0.0	0.0	0.0	21.9	21.9	21.9	0.0	0.0	0.0	2.4	2.4	2.4	0.7	0.7	0.7	1.2	1.2	1.2
1	Region 17	19.5	19.5	19.5	0.9	0.9	0.9	20.4	20.4	20.4	0.1	0.1	0.1	0.2	0.2	0.2	20.7	20.7	20.7	0.0	0.0	0.0	8.3	8.3	8.3	1.8	1.8	1.8	1.3	1.3	1.3
2	Region 18	12.8	12.1	13.5	2.4	1.9	2.9	15.2	15.1	15.4	0.3	0.2	0.3	0.4	0.4	0.4	15.9	15.8	16.1	0.0	0.0	0.0	4.9	4.3	5.5	1.3	1.3	1.3	0.9	0.9	0.9
1	Region 19	13.0	13.0	13.0	1.1	1.1	1.1	14.0	14.0	14.0	0.3	0.3	0.3	0.2	0.2	0.2	14.6	14.6	14.6	0.0	0.0	0.0	6.8	6.8	6.8	1.3	1.3	1.3	0.2	0.2	0.2
2	Region 20	15.1	12.1	18.1	1.2	0.7	1.7	16.3	13.7	18.8	0.1	0.1	0.2	1.5	0.4	2.5	17.9	14.4	21.4	0.0	0.0	0.0	5.3	3.5	7.1	2.3	1.8	2.8	1.0	0.7	1.3
1	Region 21	11.1	11.1	11.1	2.6	2.6	2.6	13.7	13.7	13.7	0.3	0.3	0.3	0.0	0.0	0.0	14.0	14.0	14.0	0.0	0.0	0.0	4.1	4.1	4.1	1.7	1.7	1.7	0.6	0.6	0.6
4	Region 23	13.0	10.6	16.2	2.2	2.1	2.5	15.3	13.2	18.4	0.2	0.2	0.3	0.0	0.0	0.0	15.5	13.3	18.6	0.0	0.0	0.0	5.7	4.7	7.0	1.6	1.1	2.3	0.3	0.2	0.4
1	Region 24	14.4	14.4	14.4	2.4	2.4	2.4	16.8	16.8	16.8	0.2	0.2	0.2	0.0	0.0	0.0	17.0	17.0	17.0	0.0	0.0	0.0	7.0	7.0	7.0	1.3	1.3	1.3	0.0	0.0	0.0
1	Region 25	7.9	7.9	7.9	1.6	1.6	1.6	9.5	9.5	9.5	0.1	0.1	0.1	6.5	6.5	6.5	16.1	16.1	16.1	0.0	0.0	0.0	1.7	1.7	1.7	1.1	1.1	1.1	0.4	0.4	0.4
2	Region 26	11.5	9.2	13.9	3.8	2.0	5.6	15.4	14.8	15.9	0.3	0.1	0.4	0.0	0.0	0.0	15.6	15.2	16.0	0.0	0.0	0.0	2.4	1.2	3.6	1.1	0.5	1.7	0.4	0.3	0.4
4	Region 28	12.0	11.4	13.4	1.7	1.0	2.1	13.7	13.2	14.4	0.2	0.2	0.3	0.2	0.0	0.8	14.1	13.4	14.7	0.0	0.0	0.0	3.5	2.3	4.2	1.9	1.1	3.4	0.9	0.4	1.5
1	Region 29	14.2	14.2	14.2	1.3	1.3	1.3	15.5	15.5	15.5	0.2	0.2	0.2	0.4	0.4	0.4	16.0	16.0	16.0	0.0	0.0	0.0	3.7	3.7	3.7	1.9	1.9	1.9	0.8	0.8	0.8
1	Region 32	13.6	13.6	13.6	0.7	0.7	0.7	14.3	14.3	14.3	0.0	0.0	0.0	0.2	0.2	0.2	14.6	14.6	14.6	0.0	0.0	0.0	4.6	4.6	4.6	1.8	1.8	1.8	0.7	0.7	0.7
24	**Ave WM3**	**13.2**			**2.4**			**15.5**			**0.2**			**0.7**			**16.4**			**0.0**			**4.7**			**1.7**			**0.7**		
	Min WM3		**7.5**			**0.5**			**9.5**			**0.0**			**0.0**			**13.3**			**0.0**			**1.2**			**0.5**			**0.0**	
	Max WM3			**21.6**			**14.0**			**22.2**			**0.4**			**6.5**			**23.1**			**0.0**			**8.3**			**3.4**			**1.5**
GRADE: COM																														
1	Region 33	40.1	40.1	40.1	1.2	1.2	1.2	41.3	41.3	41.3	0.2	0.2	0.2	0.0	0.0	0.0	41.4	41.4	41.4	0.0	0.0	0.0	9.9	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0
1	**Ave COM**	**40.1**			**1.2**			**41.3**			**0.2**			**0.0**			**41.4**			**0.0**			**9.9**			**0.0**			**0.0**		
	Min COM		**40.1**			**1.2**			**41.3**			**0.2**			**0.0**			**41.4**			**0.0**			**9.9**			**0.0**			**0.0**	
	Max COM			**40.1**			**1.2**			**41.3**			**0.2**			**0.0**			**41.4**			**0.0**			**9.9**			**0.0**			**0.0**
458	**Ave white maize**	**5.1**			**1.5**			**6.6**			**0.1**			**0.2**			**6.9**			**0.0**			**1.5**			**0.8**			**0.2**		
	Min white maize		**1.0**			**0.2**			**1.3**			**0.0**			**0.0**			**1.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max white maize			**40.1**			**14.0**			**41.3**			**0.4**			**6.5**			**41.4**			**0.0**			**9.9**			**3.4**			**1.8**
800	**Ave maize**	**5.1**			**1.7**			**6.7**			**0.1**			**0.2**			**7.1**			**0.0**			**1.6**			**0.8**			**0.2**		
	Min maize		**0.3**			**0.1**			**0.6**			**0.0**			**0.0**			**0.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**40.1**			**14.0**			**41.3**			**4.1**			**6.5**			**41.4**			**0.0**			**10.8**			**3.7**			**3.3**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2009/2010)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Other Colour			% Total Deviation			% Pinked Kernels			% Diplodia Kernels			% Fusarium Kernels			% Cobrot Kernels		
		Above 6.35 mm sieve			Below 6.35 mm sieve																										
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1																														
27	Region 10	1.0	0.3	2.8	1.1	0.1	2.6	2.0	0.6	4.1	0.1	0.0	0.2	0.0	0.0	0.0	2.1	0.6	4.3	0.0	0.0	0.0	0.1	0.0	0.5	0.2	0.0	0.6	0.0	0.0	0.4
4	Region 11	1.5	1.0	1.8	1.7	1.0	2.3	3.2	2.1	3.8	0.1	0.1	0.2	0.0	0.0	0.0	3.3	2.2	4.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
4	Region 12	3.9	2.4	4.6	1.3	0.8	1.7	5.2	3.6	6.1	0.1	0.1	0.1	0.0	0.0	0.0	5.3	3.7	6.2	0.0	0.0	0.0	1.1	0.7	1.3	0.7	0.4	0.9	0.2	0.2	0.2
4	Region 13	4.3	2.2	6.9	1.1	0.5	1.9	5.4	3.0	8.8	0.1	0.1	0.2	0.2	0.0	0.9	5.8	4.0	9.0	0.0	0.0	0.0	1.4	0.4	2.6	0.7	0.4	0.9	0.1	0.0	0.2
6	Region 14	3.9	1.4	6.6	1.3	0.6	1.8	5.2	2.0	8.0	0.2	0.1	0.3	0.1	0.0	0.4	5.4	2.1	8.3	0.0	0.0	0.0	1.4	0.2	2.3	0.5	0.0	0.9	0.2	0.0	0.6
3	Region 15	1.9	0.8	3.4	1.8	1.8	1.8	3.7	2.6	5.2	0.2	0.2	0.2	0.1	0.0	0.2	4.0	2.8	5.6	0.0	0.0	0.0	0.4	0.0	0.9	0.3	0.0	0.6	0.1	0.0	0.2
3	Region 16	4.4	4.2	4.6	1.2	1.1	1.3	5.6	5.4	5.7	0.1	0.0	0.2	0.4	0.0	0.8	6.1	5.6	6.5	0.0	0.0	0.0	0.9	0.8	1.0	0.7	0.6	0.8	0.3	0.2	0.4
6	Region 17	4.1	2.1	5.6	1.2	0.5	1.6	5.2	3.6	6.9	0.1	0.1	0.2	0.2	0.0	0.9	5.6	4.0	7.3	0.0	0.0	0.0	1.4	0.0	2.0	0.6	0.0	0.9	0.1	0.0	0.2
6	Region 18	3.8	2.6	5.3	1.3	0.2	1.8	5.1	3.0	7.1	0.1	0.0	0.3	0.2	0.0	0.7	5.4	3.0	7.8	0.0	0.0	0.0	1.2	0.0	2.8	0.7	0.3	1.0	0.2	0.0	0.6
2	Region 19	3.8	3.5	4.1	1.2	0.9	1.6	5.0	4.3	5.7	0.1	0.1	0.1	0.1	0.0	0.2	5.2	4.4	6.0	0.0	0.0	0.0	1.3	1.1	1.5	0.5	0.4	0.6	0.0	0.0	0.0
5	Region 20	4.2	3.7	5.1	1.3	0.4	1.7	5.4	4.8	6.2	0.1	0.1	0.1	0.0	0.0	0.0	5.5	4.9	6.3	0.0	0.0	0.0	1.5	1.2	2.0	0.8	0.6	1.1	0.1	0.0	0.4
8	Region 21	3.3	2.2	4.6	2.3	1.7	3.5	5.6	4.1	7.0	0.2	0.1	0.3	0.1	0.0	0.4	5.8	4.3	7.7	0.0	0.0	0.0	0.7	0.0	1.9	0.7	0.4	1.1	0.1	0.0	0.3
2	Region 22	3.8	2.5	5.1	1.9	1.3	2.4	5.7	3.8	7.6	0.2	0.1	0.2	0.1	0.0	0.2	6.0	4.2	7.7	0.0	0.0	0.0	1.0	0.2	1.7	0.9	0.9	0.9	0.2	0.0	0.5
9	Region 23	2.8	1.7	3.7	1.6	0.8	2.5	4.4	2.8	5.8	0.1	0.0	0.3	0.0	0.0	0.0	4.5	3.0	6.0	0.0	0.0	0.0	0.3	0.0	1.1	0.7	0.3	0.9	0.0	0.0	0.2
6	Region 24	3.5	2.2	5.5	1.8	1.1	2.2	5.4	3.3	7.8	0.1	0.1	0.2	0.3	0.0	1.1	5.9	4.5	8.9	0.0	0.0	0.0	1.1	0.7	1.8	0.5	0.2	0.9	0.1	0.0	0.4
23	Region 25	3.9	1.6	7.4	1.2	0.2	3.7	5.1	2.7	8.3	0.1	0.0	0.3	0.0	0.0	0.7	5.3	2.8	8.5	0.0	0.0	0.0	1.0	0.4	2.1	0.8	0.4	1.6	0.4	0.0	1.1
11	Region 26	4.2	1.8	6.7	2.0	1.2	3.4	6.2	3.8	8.6	0.1	0.0	0.2	0.1	0.0	0.4	6.4	4.0	8.8	0.0	0.0	0.0	1.2	0.4	2.3	0.7	0.0	1.3	0.3	0.0	1.3
4	Region 27	4.0	3.5	4.9	2.9	1.3	3.8	6.9	5.2	8.7	0.1	0.0	0.2	0.1	0.0	0.2	7.0	5.4	8.8	0.0	0.0	0.0	1.1	0.5	1.4	0.6	0.5	0.7	0.6	0.5	0.7
35	Region 28	3.5	1.5	7.0	1.7	0.2	3.9	5.3	2.9	8.9	0.1	0.0	0.3	0.0	0.0	0.2	5.4	3.1	9.0	0.0	0.0	0.0	1.0	0.2	2.3	0.6	0.0	1.6	0.2	0.0	1.3
27	Region 29	3.4	1.7	5.5	1.7	1.0	2.8	5.1	3.4	7.9	0.1	0.1	0.2	0.1	0.0	0.9	5.3	3.5	8.1	0.0	0.0	0.0	1.1	0.4	2.2	0.6	0.0	1.1	0.2	0.0	0.6
8	Region 30	2.6	1.4	3.7	1.8	0.5	3.4	4.4	2.2	5.9	0.1	0.1	0.2	0.0	0.0	0.0	4.5	2.3	6.0	0.0	0.0	0.0	0.7	0.0	1.1	0.4	0.0	1.1	0.2	0.0	0.2
7	Region 31	4.8	4.1	5.5	1.5	1.1	2.1	6.3	5.4	6.8	0.1	0.1	0.2	0.0	0.0	0.2	6.5	5.6	7.1	0.0	0.0	0.0	1.5	1.2	1.8	0.9	0.6	1.3	0.1	0.0	0.4
8	Region 32	4.9	2.9	6.2	1.1	0.6	2.2	6.0	4.8	7.2	0.1	0.0	0.1	0.0	0.0	0.2	6.1	4.9	7.3	0.0	0.0	0.0	1.4	0.5	2.1	0.9	0.4	1.3	0.1	0.0	0.2
7	Region 34	4.2	3.4	5.6	1.4	0.7	1.7	5.6	4.6	6.4	0.1	0.1	0.2	0.0	0.0	0.0	5.7	4.8	6.6	0.0	0.0	0.0	1.4	0.9	1.7	0.6	0.4	1.0	0.1	0.0	0.4
5	Region 35	2.2	0.8	3.8	2.2	0.3	3.7	4.3	1.1	5.7	0.1	0.0	0.3	0.0	0.0	0.2	4.5	1.1	6.0	0.0	0.0	0.0	0.7	0.0	1.6	0.2	0.0	0.6	0.1	0.0	0.6
8	Region 36	3.2	2.1	4.0	1.3	1.0	1.6	4.6	3.3	5.6	0.1	0.1	0.2	0.0	0.0	0.0	4.7	3.4	5.8	0.0	0.0	0.0	1.1	0.9	1.3	0.6	0.4	0.9	0.0	0.0	0.0
238	**Ave YM 1**	**3.3**			**1.5**			**4.9**			**0.1**			**0.1**			**5.0**			**0.0**			**0.9**			**0.6**			**0.2**		
	Min YM 1		**0.3**			**0.1**			**0.6**			**0.0**			**0.0**			**0.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM 1			**7.4**			**3.9**			**8.9**			**0.3**			**1.1**			**9.0**			**0.0**			**2.8**			**1.6**			**1.3**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2009/2010) (continue)

Number of samples	Region	% Defective Kernels						%			%			%			%			%			%			%		
		Above 6.35 mm sieve			Below 6.35 mm sieve			Total defective			Foreign matter			Other Colour			Total Deviation			Pinked Kernels			Diplodia Kernels			Fusarium Kernels			Cobrot Kernels		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 2																														
3	Region 12	9.0	4.6	12.9	1.5	1.1	2.2	10.5	5.7	15.1	0.1	0.1	0.2	1.0	0.2	2.3	11.7	8.1	15.7	0.0	0.0	0.0	3.5	1.8	5.8	1.1	0.4	1.6	0.7	0.2	0.9
1	Region 13	9.1	9.1	9.1	1.1	1.1	1.1	10.1	10.1	10.1	0.2	0.2	0.2	0.0	0.0	0.0	10.3	10.3	10.3	0.0	0.0	0.0	3.5	3.5	3.5	1.3	1.3	1.3	0.4	0.4	0.4
4	Region 14	9.2	7.3	13.0	1.6	1.0	2.1	10.8	9.0	14.0	0.2	0.1	0.2	0.2	0.0	0.4	11.2	9.2	14.6	0.0	0.0	0.0	3.1	2.4	4.0	0.9	0.7	1.3	0.6	0.2	1.2
1	Region 15	6.1	6.1	6.1	3.5	3.5	3.5	9.6	9.6	9.6	0.2	0.2	0.2	0.3	0.3	0.3	10.1	10.1	10.1	0.0	0.0	0.0	2.3	2.3	2.3	1.1	1.1	1.1	0.0	0.0	0.0
2	Region 16	9.9	7.7	12.1	2.3	1.5	3.1	12.2	10.8	13.6	0.2	0.1	0.2	0.1	0.0	0.2	12.5	11.3	13.8	0.0	0.0	0.0	3.6	2.4	4.8	1.0	0.8	1.2	0.4	0.2	0.6
2	Region 18	13.4	12.9	13.9	2.6	2.1	3.2	16.0	16.0	16.0	0.2	0.2	0.3	0.0	0.0	0.0	16.2	16.1	16.3	0.0	0.0	0.0	6.6	4.4	8.8	1.2	0.5	1.8	0.7	0.0	1.3
2	Region 19	7.2	7.1	7.2	2.3	2.2	2.3	9.5	9.4	9.5	0.3	0.2	0.3	0.8	0.0	1.7	10.5	9.7	11.4	0.0	0.0	0.0	2.8	2.8	2.8	0.9	0.7	1.1	0.3	0.2	0.4
3	Region 20	10.4	7.4	12.2	2.3	2.0	2.9	12.8	10.3	14.2	0.2	0.2	0.2	0.2	0.0	0.4	13.2	10.7	14.5	0.0	0.0	0.0	3.4	2.7	3.9	1.6	1.1	2.0	0.7	0.2	0.9
1	Region 21	10.3	10.3	10.3	3.0	3.0	3.0	13.3	13.3	13.3	0.2	0.2	0.2	0.0	0.0	0.0	13.6	13.6	13.6	0.0	0.0	0.0	3.7	3.7	3.7	1.4	1.4	1.4	0.9	0.9	0.9
1	Region 22	11.9	11.9	11.9	2.5	2.5	2.5	14.4	14.4	14.4	0.2	0.2	0.2	0.0	0.0	0.0	14.6	14.6	14.6	0.0	0.0	0.0	5.0	5.0	5.0	1.8	1.8	1.8	1.1	1.1	1.1
1	Region 23	5.9	5.9	5.9	6.6	6.6	6.6	12.5	12.5	12.5	0.2	0.2	0.2	0.6	0.6	0.6	13.3	13.3	13.3	0.0	0.0	0.0	2.9	2.9	2.9	0.4	0.4	0.4	0.2	0.2	0.2
1	Region 24	6.4	6.4	6.4	2.8	2.8	2.8	9.2	9.2	9.2	0.2	0.2	0.2	1.1	1.1	1.1	10.6	10.6	10.6	0.0	0.0	0.0	2.4	2.4	2.4	0.9	0.9	0.9	0.5	0.5	0.5
8	Region 25	7.7	5.1	10.4	3.0	1.1	4.2	10.7	9.3	11.9	0.2	0.2	0.3	0.1	0.0	0.5	11.0	9.6	12.4	0.0	0.0	0.0	2.0	1.3	3.2	1.3	0.6	2.6	0.8	0.4	1.5
6	Region 26	8.0	6.7	10.1	2.5	1.5	4.2	10.5	8.9	14.3	0.2	0.2	0.3	0.1	0.0	0.4	10.8	9.5	14.6	0.0	0.0	0.0	2.4	1.9	3.1	1.0	0.6	1.5	0.4	0.2	0.9
6	Region 27	9.0	5.9	12.5	2.6	2.1	3.0	11.6	8.6	14.6	0.2	0.1	0.3	0.1	0.0	0.6	11.9	9.5	15.0	0.0	0.0	0.0	2.9	2.1	3.7	1.6	1.1	2.3	0.8	0.0	1.8
28	Region 28	9.0	2.2	16.9	2.9	1.1	8.4	11.9	8.5	18.7	0.2	0.0	0.4	0.1	0.0	1.0	12.2	8.7	19.9	0.0	0.0	0.0	2.9	0.2	5.7	1.5	0.3	3.7	0.9	0.0	3.3
13	Region 29	9.0	6.8	14.4	1.7	0.7	3.9	10.7	8.4	15.3	0.2	0.1	0.3	0.3	0.0	1.3	11.2	9.1	16.4	0.0	0.0	0.0	3.0	1.8	7.0	1.2	0.2	2.7	0.7	0.2	1.6
4	Region 30	6.2	4.4	7.2	3.1	2.3	4.2	9.3	8.6	10.0	0.2	0.1	0.3	0.3	0.0	0.6	9.8	8.9	10.7	0.0	0.0	0.0	1.8	1.1	2.3	0.8	0.7	0.9	0.4	0.4	0.5
6	Region 31	7.0	3.9	9.7	2.2	1.5	3.1	9.1	5.3	12.4	0.2	0.2	0.2	1.4	0.0	4.2	10.7	9.6	12.6	0.0	0.0	0.0	2.5	0.9	4.0	0.9	0.5	1.3	0.1	0.0	0.4
1	Region 32	2.7	2.7	2.7	8.7	8.7	8.7	11.4	11.4	11.4	0.1	0.1	0.1	1.1	1.1	1.1	12.6	12.6	12.6	0.0	0.0	0.0	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2
3	Region 34	10.4	7.1	13.0	1.3	0.3	2.1	11.7	9.2	13.2	0.2	0.1	0.3	0.0	0.0	0.0	11.9	9.5	13.4	0.0	0.0	0.0	4.5	3.1	6.7	1.1	0.9	1.3	0.3	0.0	0.6
97	**Ave YM2**	**8.6**			**2.6**			**11.2**			**0.2**			**0.3**			**11.7**			**0.0**			**2.9**			**1.2**			**0.7**		
	Min YM2		**2.2**			**0.3**			**5.3**			**0.0**			**0.0**			**8.1**			**0.0**			**0.2**			**0.2**			**0.0**	
	Max YM2			**16.9**			**8.7**			**18.7**			**0.4**			**4.2**			**19.9**			**0.0**			**8.8**			**3.7**			**3.3**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2009/2010) (continue)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Other Colour			% Total Deviation			% Pinked Kernels			% Diplodia Kernels			% Fusarium Kernels			% Cobrot Kernels		
		Above 6.35 mm sieve			Below 6.35 mm sieve																										
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM3																														
1	Region 12	19.3	19.3	19.3	2.6	2.6	2.6	21.9	21.9	21.9	0.2	0.2	0.2	0.4	0.4	0.4	22.5	22.5	22.5	0.0	0.0	0.0	10.6	10.6	10.6	2.2	2.2	2.2	1.3	1.3	1.3
1	Region 13	23.8	23.8	23.8	1.0	1.0	1.0	24.8	24.8	24.8	0.2	0.2	0.2	0.0	0.0	0.0	25.0	25.0	25.0	0.0	0.0	0.0	10.8	10.8	10.8	3.5	3.5	3.5	0.9	0.9	0.9
1	Region 20	17.7	17.7	17.7	2.3	2.3	2.3	20.0	20.0	20.0	0.3	0.3	0.3	0.5	0.5	0.5	20.8	20.8	20.8	0.0	0.0	0.0	7.5	7.5	7.5	2.4	2.4	2.4	0.9	0.9	0.9
1	Region 26	4.3	4.3	4.3	12.9	12.9	12.9	17.2	17.2	17.2	0.3	0.3	0.3	0.4	0.4	0.4	17.9	17.9	17.9	0.0	0.0	0.0	1.6	1.6	1.6	0.8	0.8	0.8	0.2	0.2	0.2
1	Region 28	20.8	20.8	20.8	2.2	2.2	2.2	23.0	23.0	23.0	0.2	0.2	0.2	0.6	0.6	0.6	23.8	23.8	23.8	0.0	0.0	0.0	5.3	5.3	5.3	2.8	2.8	2.8	0.8	0.8	0.8
1	Region 36	16.9	16.9	16.9	2.0	2.0	2.0	18.9	18.9	18.9	0.3	0.3	0.3	1.4	1.4	1.4	20.5	20.5	20.5	0.0	0.0	0.0	7.8	7.8	7.8	1.6	1.6	1.6	0.9	0.9	0.9
6	**Ave YM3**	**17.1**			**3.8**			**21.0**			**0.2**			**0.6**			**21.8**			**0.0**			**7.3**			**2.2**			**0.8**		
	Min YM3		**4.3**			**1.0**			**17.2**			**0.2**			**0.0**			**17.9**			**0.0**			**1.6**			**0.8**			**0.2**	
	Max YM3			**23.8**			**12.9**			**24.8**			**0.3**			**1.4**			**25.0**			**0.0**			**10.8**			**3.5**			**1.3**
GRADE: COM																														
1	Region 30	3.5	3.5	3.5	0.8	0.8	0.8	4.4	4.4	4.4	4.1	4.1	4.1	0.4	0.4	0.4	8.9	8.9	8.9	0.0	0.0	0.0	0.7	0.7	0.7	0.5	0.5	0.5	0.4	0.4	0.4
1	**Ave COM**	**3.5**			**0.8**			**4.4**			**4.1**			**0.4**			**8.9**			**0.0**			**0.7**			**0.5**			**0.4**		
	Min COM		**3.5**			**0.8**			**4.4**			**4.1**			**0.4**			**8.9**			**0.0**			**0.7**			**0.5**			**0.4**	
	Max COM			**3.5**			**0.8**			**4.4**			**4.1**			**0.4**			**8.9**			**0.0**			**0.7**			**0.5**			**0.4**
342	**Ave yellow maize**	**5.1**			**1.9**			**6.9**			**0.2**			**0.1**			**7.2**			**0.0**			**1.6**			**0.8**			**0.3**		
	Min yellow maize		**0.3**			**0.1**			**0.6**			**0.0**			**0.0**			**0.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max yellow maize			**23.8**			**12.9**			**24.8**			**4.1**			**4.2**			**25.0**			**0.0**			**10.8**			**3.7**			**3.3**
800	**Ave maize**	**5.1**			**1.7**			**6.7**			**0.1**			**0.2**			**7.1**			**0.0**			**1.6**			**0.8**			**0.2**		
	Min maize		**0.3**			**0.1**			**0.6**			**0.0**			**0.0**			**0.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**40.1**			**14.0**			**41.3**			**4.1**			**6.5**			**41.4**			**0.0**			**10.8**			**3.7**			**3.3**

TABLE 4: GRADING QUALITY OF SOUTH AFRICAN WHITE AND YELLOW MAIZE 2000/01 - 2009/10

Season	Number of samples	% Defective kernels above 6.35 mm sieve			% Defective kernels below 6.35 mm sieve			% Foreign matter			% Other colour			% Total deviation		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
White Maize																
2000/01	522	3.6	0.2	20.6	1.5	0.0	8.8	0.1	0.0	1.1	0.3	0.0	10.1	5.5	0.5	29.3
2001/02	471	5.0	0.7	26.5	1.4	0.0	6.7	0.0	0.0	0.6	0.3	0.0	7.5	6.7	0.9	31.5
2002/03	517	2.4	0.4	12.9	1.6	0.0	7.5	0.1	0.0	2.0	0.4	0.0	12.7	4.5	1.0	22.2
2003/04	599	4.0	0.6	27.2	2.1	0.4	20.4	0.3	0.0	1.2	0.3	0.0	5.7	6.7	1.3	47.9
2004/05	601	3.5	0.5	28.5	1.9	0.1	16.4	0.2	0.0	0.5	0.3	0.0	12.3	5.9	1.3	31.1
2005/06	593	6.0	0.5	27.9	1.8	0.0	8.8	0.2	0.0	0.7	0.3	0.0	5.0	8.3	1.0	31.2
2006/07	563	2.9	0.1	34.9	2.0	0.1	11.6	0.1	0.0	0.7	0.2	0.0	13.5	5.3	0.4	38.8
2007/08	483	2.0	0.3	13.6	1.6	0.0	10.3	0.2	0.0	0.7	0.2	0.0	5.2	3.9	0.5	18.5
2008/09	483	2.6	0.4	16.9	1.6	0.0	5.5	0.2	0.0	4.0	0.2	0.0	5.0	4.5	1.0	20.2
2009/10	458	5.1	1.0	40.1	1.5	0.2	14.0	0.1	0.0	0.4	0.2	0.0	6.5	6.9	1.4	41.4
Weighted Average		**3.7**			**1.7**			**0.2**			**0.3**			**5.9**		
Minimum			**0.1**			**0.0**			**0.0**			**0.0**			**0.4**	
Maximum				**40.1**			**20.4**			**4.0**			**13.5**			**47.9**
Yellow Maize																
2000/01	378	3.7	0.2	43.5	2.1	0.0	14.3	0.1	0.0	1.3	0.4	0.0	10.1	6.2	0.6	45.3
2001/02	429	6.3	0.6	21.6	1.9	0.0	17.2	0.1	0.0	0.9	0.3	0.0	6.3	8.6	0.7	24.3
2002/03	383	2.1	0.0	10.0	2.5	0.1	10.8	0.2	0.0	2.1	0.2	0.0	3.3	5.0	0.0	15.7
2003/04	301	4.3	0.5	22.5	2.3	0.5	8.7	0.3	0.0	0.9	0.2	0.0	5.3	7.0	1.2	28.0
2004/05	399	4.0	0.6	27.2	2.3	0.3	9.4	0.2	0.0	0.6	0.1	0.0	2.8	6.6	1.0	31.5
2005/06	307	5.5	0.8	23.7	2.0	0.0	9.8	0.2	0.0	0.4	0.4	0.0	16.7	8.1	1.3	32.7
2006/07	337	2.8	0.0	67.7	2.5	0.2	17.3	0.2	0.0	1.9	0.2	0.0	4.6	5.7	0.9	70.0
2007/08	417	1.6	0.3	8.4	2.0	0.2	7.3	0.1	0.0	0.4	0.1	0.0	4.3	3.9	0.6	11.0
2008/09	327	2.3	0.5	15.1	2.0	0.0	10.6	0.2	0.0	3.1	0.2	0.0	13.3	4.7	0.9	29.6
2009/10	342	5.1	0.3	23.8	1.9	0.1	12.9	0.2	0.0	4.1	0.1	0.0	4.2	7.2	0.6	25.0
Weighted Average		**3.8**			**2.1**			**0.2**			**0.2**			**6.3**		
Minimum			**0.0**			**0.0**			**0.0**			**0.0**			**0.0**	
Maximum				**67.7**			**17.3**			**4.1**			**16.7**			**70.0**
White and Yellow Maize																
2000/01	900	3.6	0.2	43.5	1.8	0.0	14.3	0.1	0.0	1.3	0.3	0.0	10.1	5.8	0.5	45.3
2001/02	900	5.6	0.6	26.5	1.6	0.0	17.2	0.1	0.0	0.9	0.3	0.0	7.5	7.6	0.7	31.5
2002/03	900	2.3	0.2	12.9	2.0	0.0	10.8	0.2	0.0	2.1	0.3	0.0	12.7	4.7	0.0	22.2
2003/04	900	4.1	0.5	27.2	2.2	0.4	20.4	0.3	0.0	1.2	0.3	0.0	5.7	6.8	1.2	47.9
2004/05	1000	3.7	0.5	28.5	2.1	0.1	16.4	0.2	0.0	0.6	0.2	0.0	12.3	6.2	1.0	31.5
2005/06	900	5.9	0.5	27.9	1.9	0.0	9.8	0.2	0.0	0.7	0.3	0.0	16.7	8.2	1.0	32.7
2006/07	900	2.9	0.0	67.7	2.2	0.1	17.3	0.2	0.0	1.9	0.2	0.0	13.5	5.4	0.4	70.0
2007/08	900	1.8	0.3	13.6	1.8	0.0	10.3	0.1	0.0	0.7	0.1	0.0	5.2	3.9	0.5	18.5
2008/09	810	2.5	0.4	16.9	1.8	0.0	10.6	0.2	0.0	4.0	0.2	0.0	13.3	4.6	0.9	29.6
2009/10	800	5.1	0.3	40.1	1.7	0.1	14.0	0.1	0.0	4.1	0.2	0.0	6.5	7.1	0.6	41.4
Weighted Average		**3.7**			**1.9**			**0.2**			**0.2**			**6.0**		
Minimum			**0.0**			**0.0**			**0.0**			**0.0**			**0.0**	
Maximum				**67.7**			**20.4**			**4.1**			**16.7**			**70.0**

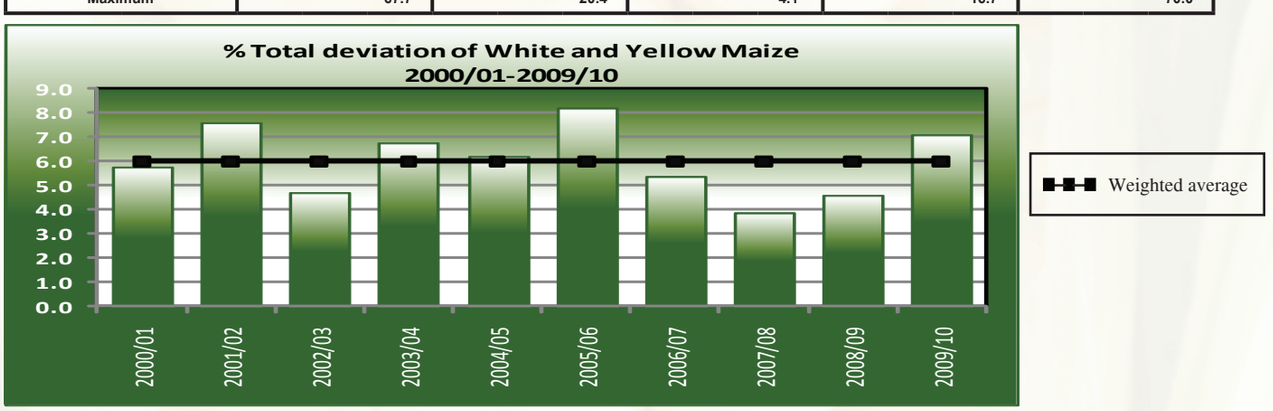


TABLE 5: USA GRADING OF WHITE MAIZE (2009/10)

Number of samples	Region	Damaged kernels						%			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged			Broken corn and foreign material								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 1																
1	Region 11	0.0	0.0	0.0	2.9	2.9	2.9	0.6	0.6	0.6	77.8	77.8	77.8	0.0	0.0	0.0
1	Region 12	0.0	0.0	0.0	2.3	2.3	2.3	0.3	0.3	0.3	79.8	79.8	79.8	0.0	0.0	0.0
4	Region 14	0.0	0.0	0.0	2.2	1.8	2.4	0.0	0.0	0.0	80.5	79.0	81.7	0.0	0.0	0.0
3	Region 15	0.0	0.0	0.0	2.0	1.0	2.6	0.7	0.1	1.4	81.1	78.8	84.4	0.1	0.0	0.2
6	Region 16	0.0	0.0	0.0	2.9	2.5	3.4	0.2	0.0	0.5	79.1	78.5	79.8	0.0	0.0	0.2
1	Region 17	0.0	0.0	0.0	2.6	2.6	2.6	0.7	0.7	0.7	77.3	77.3	77.3	0.2	0.2	0.2
3	Region 18	0.0	0.0	0.0	2.4	2.1	2.7	0.3	0.1	0.5	77.9	76.8	78.8	0.0	0.0	0.0
1	Region 19	0.0	0.0	0.0	2.9	2.9	2.9	1.0	1.0	1.0	78.5	78.5	78.5	0.0	0.0	0.0
13	Region 21	0.0	0.0	0.0	2.5	1.6	3.0	0.5	0.3	0.9	78.0	76.8	78.9	0.2	0.0	0.9
6	Region 23	0.0	0.0	0.0	2.6	2.2	2.9	0.4	0.2	0.6	78.6	77.2	79.5	0.1	0.0	0.4
6	Region 24	0.0	0.0	0.0	2.6	1.7	3.0	0.5	0.2	1.2	78.4	77.6	78.9	0.1	0.0	0.2
3	Region 25	0.0	0.0	0.0	2.6	2.2	2.9	0.4	0.1	0.7	75.9	72.9	79.2	0.2	0.0	0.5
8	Region 26	0.0	0.0	0.0	2.6	1.9	3.0	0.5	0.2	1.0	77.5	74.0	79.7	0.1	0.0	0.5
1	Region 27	0.0	0.0	0.0	2.9	2.9	2.9	1.0	1.0	1.0	77.0	77.0	77.0	0.2	0.2	0.2
13	Region 28	0.0	0.0	0.0	2.5	1.7	3.0	0.4	0.1	0.7	77.5	73.2	79.9	0.1	0.0	0.4
17	Region 29	0.0	0.0	0.0	2.6	1.7	3.0	0.5	0.3	0.8	77.8	73.8	80.5	0.2	0.0	0.4
7	Region 30	0.0	0.0	0.0	2.0	1.2	3.0	0.3	0.0	0.6	78.1	77.3	78.9	0.1	0.0	0.4
3	Region 32	0.0	0.0	0.0	2.6	2.0	2.9	0.5	0.4	0.8	78.3	76.9	79.5	0.0	0.0	0.0
2	Region 33	0.0	0.0	0.0	2.7	2.5	2.8	0.3	0.3	0.3	76.9	75.6	78.2	0.0	0.0	0.0
2	Region 34	0.0	0.0	0.0	2.5	2.4	2.6	0.3	0.3	0.4	79.9	79.1	80.7	0.0	0.0	0.0
6	Region 35	0.0	0.0	0.0	2.2	2.0	2.7	0.7	0.1	1.3	78.1	74.7	80.6	0.2	0.0	1.1
9	Region 36	0.0	0.0	0.0	2.7	2.4	3.0	0.6	0.4	0.7	77.3	74.7	80.0	0.2	0.0	0.9
116	**Ave US 1**	**0.0**			**2.5**			**0.5**			**78.1**			**0.1**		
	Min US 1		**0.0**			**1.0**			**0.0**			**72.9**			**0.0**	
	Max US 1			**0.0**			**3.4**			**1.4**			**84.4**			**1.1**
GRADE: US 2																
6	Region 12	0.0	0.0	0.0	3.9	3.3	4.3	0.5	0.2	0.8	79.0	77.3	80.2	0.0	0.0	0.2
6	Region 13	0.0	0.0	0.0	3.8	3.3	4.3	0.6	0.1	0.9	79.2	76.6	80.4	0.1	0.0	0.4
7	Region 14	0.0	0.0	0.0	3.7	3.2	4.2	0.5	0.2	0.7	79.1	77.6	79.8	0.1	0.0	0.5
9	Region 15	0.0	0.0	0.0	4.1	3.3	4.7	0.7	0.2	0.8	78.6	77.0	79.9	0.0	0.0	0.2
10	Region 16	0.0	0.0	0.0	4.0	3.3	4.7	0.6	0.0	1.5	79.3	78.0	80.5	0.1	0.0	0.3
9	Region 17	0.0	0.0	0.0	3.9	3.1	5.0	0.5	0.2	0.9	77.9	76.8	79.6	0.1	0.0	0.4
5	Region 18	0.0	0.0	0.0	3.8	3.7	4.1	0.5	0.2	0.7	78.0	76.9	78.8	0.3	0.0	0.6
4	Region 19	0.0	0.0	0.0	3.7	3.1	4.0	0.5	0.3	0.9	78.0	77.9	78.1	0.1	0.0	0.2
4	Region 20	0.0	0.0	0.0	4.2	3.9	4.9	0.7	0.4	1.1	74.2	60.2	78.9	0.2	0.0	0.5
10	Region 21	0.0	0.0	0.0	3.9	3.3	5.8	0.7	0.3	1.2	78.1	75.1	80.0	0.1	0.0	0.5
8	Region 22	0.0	0.0	0.0	4.2	3.0	5.0	0.8	0.2	2.6	78.7	74.9	80.3	0.2	0.0	0.6
12	Region 23	0.0	0.0	0.0	4.0	3.2	4.9	0.6	0.2	1.2	79.1	76.6	80.6	0.1	0.0	0.4
11	Region 24	0.0	0.0	0.0	3.8	3.2	5.0	0.8	0.4	1.8	79.0	77.8	80.9	0.1	0.0	0.2
10	Region 25	0.0	0.0	0.0	3.9	3.1	4.9	0.6	0.3	1.1	77.2	72.6	79.9	0.0	0.0	0.4
3	Region 26	0.0	0.0	0.0	3.4	3.2	3.5	0.6	0.4	1.0	78.0	73.9	80.2	0.1	0.0	0.4
1	Region 27	0.0	0.0	0.0	3.7	3.7	3.7	0.3	0.3	0.3	78.6	78.6	78.6	0.0	0.0	0.0
12	Region 28	0.0	0.0	0.0	3.7	3.1	5.0	0.5	0.0	1.6	77.1	75.1	78.9	0.1	0.0	0.7
8	Region 29	0.0	0.0	0.0	3.7	3.2	5.0	0.6	0.3	1.3	77.7	75.7	79.7	0.1	0.0	0.7
7	Region 30	0.0	0.0	0.0	3.1	1.8	3.5	0.5	0.4	0.7	75.7	71.1	78.5	0.2	0.0	0.4
4	Region 31	0.0	0.0	0.0	3.6	3.2	4.3	0.6	0.4	0.7	78.7	78.2	79.1	0.2	0.0	0.4
12	Region 32	0.0	0.0	0.0	3.9	3.1	5.0	0.5	0.0	1.1	78.4	76.9	79.6	0.0	0.0	0.2
8	Region 34	0.0	0.0	0.0	3.8	3.2	4.8	0.5	0.3	0.7	78.3	77.6	79.5	0.1	0.0	0.4
2	Region 35	0.0	0.0	0.0	4.1	3.7	4.6	0.8	0.1	1.5	78.4	77.6	79.2	0.0	0.0	0.0
6	Region 36	0.0	0.0	0.0	3.5	3.2	3.8	0.5	0.4	0.7	77.3	75.9	78.6	0.1	0.0	0.4
174	**Ave US 2**	**0.0**			**3.8**			**0.6**			**78.1**			**0.1**		
	Min US 2		**0.0**			**1.8**			**0.0**			**60.2**			**0.0**	
	Max US 2			**0.0**			**5.8**			**2.6**			**80.9**			**0.7**

TABLE 5: USA GRADING OF WHITE MAIZE (2009/10) (continue)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 3																
1	Region 11	0.0	0.0	0.0	6.1	6.1	6.1	0.7	0.7	0.7	80.4	80.4	80.4	0.5	0.5	0.5
1	Region 12	0.0	0.0	0.0	5.5	5.5	5.5	0.4	0.4	0.4	74.5	74.5	74.5	1.3	1.3	1.3
1	Region 13	0.0	0.0	0.0	5.1	5.1	5.1	1.9	1.9	1.9	78.7	78.7	78.7	0.0	0.0	0.0
3	Region 14	0.0	0.0	0.0	6.5	6.2	6.9	0.7	0.6	0.9	77.8	76.9	79.0	0.1	0.0	0.2
6	Region 15	0.0	0.0	0.0	6.1	5.4	6.8	0.6	0.3	0.9	79.5	78.9	80.1	0.1	0.0	0.2
5	Region 16	0.0	0.0	0.0	5.7	5.1	6.7	0.6	0.3	0.9	78.4	78.1	79.1	0.2	0.0	0.3
1	Region 18	0.0	0.0	0.0	5.9	5.9	5.9	0.9	0.9	0.9	77.1	77.1	77.1	0.4	0.4	0.4
1	Region 19	0.0	0.0	0.0	6.9	6.9	6.9	0.5	0.5	0.5	78.0	78.0	78.0	0.2	0.2	0.2
1	Region 20	0.0	0.0	0.0	5.3	5.3	5.3	0.0	0.0	0.0	78.9	78.9	78.9	0.0	0.0	0.0
4	Region 21	0.0	0.0	0.0	5.0	3.7	5.9	1.2	0.2	4.0	76.6	74.7	78.1	0.6	0.0	1.1
7	Region 23	0.0	0.0	0.0	6.1	5.3	7.0	0.7	0.3	1.9	78.7	75.2	80.9	0.1	0.0	0.8
11	Region 24	0.0	0.0	0.0	5.7	5.1	6.4	0.7	0.2	1.2	78.6	73.4	80.6	0.1	0.0	0.4
3	Region 25	0.0	0.0	0.0	5.5	5.3	5.8	0.3	0.0	0.6	76.9	75.9	78.4	0.2	0.0	0.4
2	Region 26	0.0	0.0	0.0	5.4	5.1	5.6	0.9	0.4	1.3	74.4	74.3	74.4	0.4	0.0	0.8
3	Region 27	0.0	0.0	0.0	5.9	5.4	6.6	0.6	0.2	1.2	77.0	75.9	77.8	0.3	0.2	0.4
8	Region 28	0.0	0.0	0.0	6.3	5.1	7.0	0.8	0.4	1.4	77.0	74.4	78.8	0.7	0.2	1.4
5	Region 29	0.0	0.0	0.0	6.1	5.2	6.9	0.7	0.5	1.0	77.2	73.9	78.9	0.4	0.0	0.8
1	Region 30	0.0	0.0	0.0	5.7	5.7	5.7	0.8	0.8	0.8	77.2	77.2	77.2	0.7	0.7	0.7
4	Region 31	0.0	0.0	0.0	6.0	5.2	6.4	0.7	0.5	1.2	78.4	77.2	79.4	0.4	0.0	0.6
6	Region 32	0.0	0.0	0.0	5.6	5.1	6.3	0.5	0.2	1.1	78.7	77.2	80.3	0.1	0.0	0.4
2	Region 33	0.0	0.0	0.0	6.2	5.9	6.5	0.3	0.3	0.3	77.6	77.5	77.7	0.2	0.0	0.4
1	Region 34	0.0	0.0	0.0	5.5	5.5	5.5	0.5	0.5	0.5	78.6	78.6	78.6	0.2	0.2	0.2
1	Region 36	0.0	0.0	0.0	6.0	6.0	6.0	0.7	0.7	0.7	76.3	76.3	76.3	0.5	0.5	0.5
78	**Ave US 3**	**0.0**			**5.9**			**0.7**			**77.9**			**0.3**		
	Min US 3		**0.0**			**3.7**			**0.0**			**73.4**			**0.0**	
	Max US 3			**0.0**			**7.0**			**4.0**			**80.9**			**1.4**
GRADE: US 4																
1	Region 12	0.0	0.0	0.0	7.6	7.6	7.6	0.4	0.4	0.4	79.2	79.2	79.2	0.7	0.7	0.7
3	Region 14	0.0	0.0	0.0	8.6	7.6	9.7	0.2	0.1	0.2	79.3	78.8	80.2	0.2	0.0	0.5
1	Region 15	0.0	0.0	0.0	7.6	7.6	7.6	0.5	0.5	0.5	79.3	79.3	79.3	0.0	0.0	0.0
1	Region 16	0.0	0.0	0.0	9.0	9.0	9.0	0.4	0.4	0.4	79.8	79.8	79.8	0.2	0.2	0.2
3	Region 17	0.0	0.0	0.0	9.2	8.0	9.9	0.4	0.2	0.6	77.9	77.6	78.2	0.1	0.0	0.2
2	Region 18	0.0	0.0	0.0	9.0	8.6	9.3	0.6	0.5	0.6	78.6	78.4	78.8	0.2	0.0	0.4
2	Region 19	0.0	0.0	0.0	7.4	7.3	7.4	0.7	0.4	1.0	78.2	77.6	78.8	0.1	0.0	0.2
1	Region 20	0.0	0.0	0.0	9.2	9.2	9.2	0.3	0.3	0.3	77.3	77.3	77.3	0.3	0.3	0.3
1	Region 21	0.0	0.0	0.0	2.6	2.6	2.6	4.5	4.5	4.5	76.2	76.2	76.2	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	8.1	8.1	8.1	1.6	1.6	1.6	77.8	77.8	77.8	0.2	0.2	0.2
4	Region 23	0.0	0.0	0.0	7.8	7.6	8.0	0.6	0.3	0.9	79.2	78.3	80.0	0.1	0.0	0.2
3	Region 24	0.0	0.0	0.0	7.4	7.1	8.0	1.3	0.7	2.0	78.1	76.6	78.9	0.5	0.0	1.2
5	Region 25	0.0	0.0	0.0	8.0	7.1	8.7	0.6	0.5	0.7	76.3	75.0	77.8	0.7	0.2	1.7
5	Region 26	0.0	0.0	0.0	8.7	7.9	9.4	1.0	0.4	1.8	75.6	74.1	78.6	0.3	0.0	1.0
1	Region 27	0.0	0.0	0.0	8.6	8.6	8.6	0.0	0.0	0.0	77.6	77.6	77.6	0.4	0.4	0.4
1	Region 28	0.0	0.0	0.0	9.1	9.1	9.1	0.9	0.9	0.9	75.0	75.0	75.0	0.2	0.2	0.2
2	Region 29	0.0	0.0	0.0	8.8	8.3	9.2	0.9	0.8	0.9	77.4	76.9	77.8	0.5	0.4	0.5
2	Region 30	0.0	0.0	0.0	8.1	7.3	8.9	0.7	0.6	0.7	78.6	77.2	79.9	0.0	0.0	0.0
4	Region 31	0.4	0.0	1.6	8.6	8.1	9.1	0.7	0.4	1.1	78.9	77.1	80.8	0.0	0.0	0.0
4	Region 32	0.0	0.0	0.0	8.9	8.3	9.7	0.7	0.1	1.8	78.3	76.3	79.1	0.2	0.2	0.2
2	Region 34	0.0	0.0	0.0	7.5	7.2	7.7	0.6	0.5	0.8	78.0	77.6	78.4	0.3	0.0	0.5
49	**Ave US 4**	**0.0**			**8.2**			**0.8**			**77.8**			**0.3**		
	Min US 4		**0.0**			**2.6**			**0.0**			**74.1**			**0.0**	
	Max US 4			**1.6**			**9.9**			**4.5**			**80.8**			**1.7**

TABLE 5: USA GRADING OF WHITE MAIZE (2009/10) (continue)

Number of samples	Region	Damaged kernels						%			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged			Broken corn and foreign material								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 5																
1	Region 13	0.0	0.0	0.0	10.9	10.9	10.9	0.1	0.1	0.1	78.5	78.5	78.5	0.4	0.4	0.4
1	Region 14	0.0	0.0	0.0	10.2	10.2	10.2	0.4	0.4	0.4	78.0	78.0	78.0	0.4	0.4	0.4
3	Region 18	0.0	0.0	0.0	12.6	12.1	13.5	0.8	0.2	1.3	77.3	76.5	78.0	0.3	0.0	0.4
2	Region 19	0.0	0.0	0.0	11.6	10.3	13.0	0.5	0.3	0.7	77.4	77.3	77.5	0.1	0.0	0.2
3	Region 20	0.0	0.0	0.0	11.0	10.2	12.1	0.4	0.0	0.8	77.4	76.7	78.4	0.3	0.0	0.4
1	Region 21	0.0	0.0	0.0	11.1	11.1	11.1	1.3	1.3	1.3	77.1	77.1	77.1	0.0	0.0	0.0
1	Region 22	1.1	1.1	1.1	10.5	10.5	10.5	1.1	1.1	1.1	76.3	76.3	76.3	1.3	1.3	1.3
3	Region 23	0.0	0.0	0.0	12.0	10.6	14.2	1.0	0.9	1.1	76.0	75.1	77.0	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	14.4	14.4	14.4	1.1	1.1	1.1	78.2	78.2	78.2	0.0	0.0	0.0
1	Region 26	0.0	0.0	0.0	13.9	13.9	13.9	0.6	0.6	0.6	76.0	76.0	76.0	0.0	0.0	0.0
6	Region 28	0.0	0.0	0.0	11.6	10.1	13.6	0.7	0.3	1.1	78.0	76.3	79.6	0.2	0.0	0.8
1	Region 29	0.0	0.0	0.0	14.2	14.2	14.2	0.6	0.6	0.6	78.9	78.9	78.9	0.4	0.4	0.4
1	Region 31	0.0	0.0	0.0	10.9	10.9	10.9	0.5	0.5	0.5	77.5	77.5	77.5	0.3	0.3	0.3
1	Region 32	0.0	0.0	0.0	13.6	13.6	13.6	0.0	0.0	0.0	77.2	77.2	77.2	0.2	0.2	0.2
3	Region 34	0.0	0.0	0.0	11.2	10.6	11.7	0.6	0.5	0.8	78.8	78.1	79.5	0.1	0.0	0.2
29	**Ave US 5**	**0.0**			**11.8**			**0.7**			**77.6**			**0.2**		
	Min US 5		**0.0**			**10.1**			**0.0**			**75.1**			**0.0**	
	Max US 5			**1.1**			**14.4**			**1.3**			**79.6**			**1.3**
GRADE: MIXED GRADE																
1	Region 12	0.0	0.0	0.0	14.7	14.7	14.7	0.4	0.4	0.4	76.5	76.5	76.5	3.3	3.3	3.3
1	Region 20	0.0	0.0	0.0	18.1	18.1	18.1	0.2	0.2	0.2	76.3	76.3	76.3	2.5	2.5	2.5
1	Region 23	0.0	0.0	0.0	10.6	10.6	10.6	1.1	1.1	1.1	73.4	73.4	73.4	2.2	2.2	2.2
2	Region 25	0.0	0.0	0.0	6.3	4.7	8.0	1.3	0.7	1.8	74.9	74.7	75.1	5.8	5.1	6.5
1	Region 30	0.0	0.0	0.0	8.6	8.6	8.6	1.2	1.2	1.2	73.6	73.6	73.6	2.1	2.1	2.1
1	Region 31	0.0	0.0	0.0	3.7	3.7	3.7	1.1	1.1	1.1	77.3	77.3	77.3	4.6	4.6	4.6
7	**Ave Mixed Grade**	**0.0**			**9.8**			**0.9**			**75.3**			**3.8**		
	Min Mixed Grade		**0.0**			**3.7**			**0.2**			**73.4**			**2.1**	
	Max Mixed Grade			**0.0**			**18.1**			**1.8**			**77.3**			**6.5**
GRADE:SAMPLE GRADE																
1	Region 12	0.0	0.0	0.0	21.6	21.6	21.6	0.3	0.3	0.3	78.9	78.9	78.9	0.9	0.9	0.9
1	Region 13	0.0	0.0	0.0	7.7	7.7	7.7	7.1	7.1	7.1	73.4	73.4	73.4	0.0	0.0	0.0
1	Region 17	0.0	0.0	0.0	19.5	19.5	19.5	0.3	0.3	0.3	75.4	75.4	75.4	0.2	0.2	0.2
1	Region 23	0.0	0.0	0.0	16.2	16.2	16.2	1.0	1.0	1.0	78.5	78.5	78.5	0.0	0.0	0.0
1	Region 33	18.5	18.5	18.5	40.1	40.1	40.1	0.6	0.6	0.6	76.0	76.0	76.0	0.0	0.0	0.0
5	**Ave Sample Grade**	**3.7**			**21.0**			**1.9**			**76.4**			**0.2**		
	Min Sample Grade		**0.0**			**7.7**			**0.3**			**73.4**			**0.0**	
	Max Sample Grade			**18.5**			**40.1**			**7.1**			**78.9**			**0.9**
458	**Ave white maize**	**0.0**			**5.1**			**0.6**			**77.9**			**0.2**		
	Min white maize		**0.0**			**1.0**			**0.0**			**60.2**			**0.0**	
	Max white maize			**18.5**			**40.1**			**7.1**			**84.4**			**6.5**
800	**Ave maize**	**0.0**			**5.1**			**0.7**			**77.4**			**0.2**		
	Min maize		**0.0**			**0.3**			**0.0**			**60.2**			**0.0**	
	Max maize			**18.5**			**40.1**			**8.8**			**84.4**			**6.5**

TABLE 6: USA GRADING OF YELLOW MAIZE (2009/10)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 1																
27	Region 10	0.0	0.0	0.0	1.0	0.3	2.9	0.3	0.0	1.1	77.5	74.2	79.6	0.0	0.0	0.0
4	Region 11	0.0	0.0	0.0	1.6	1.0	1.8	0.5	0.3	0.8	77.2	75.7	78.9	0.0	0.0	0.0
1	Region 12	0.0	0.0	0.0	2.4	2.4	2.4	0.5	0.5	0.5	74.8	74.8	74.8	0.0	0.0	0.0
1	Region 13	0.0	0.0	0.0	2.2	2.2	2.2	0.3	0.3	0.3	77.3	77.3	77.3	0.9	0.9	0.9
1	Region 14	0.0	0.0	0.0	1.5	1.5	1.5	0.2	0.2	0.2	78.7	78.7	78.7	0.0	0.0	0.0
2	Region 15	0.0	0.0	0.0	1.3	1.0	1.6	0.7	0.6	0.8	76.9	76.7	77.1	0.0	0.0	0.0
1	Region 17	0.0	0.0	0.0	2.2	2.2	2.2	0.7	0.7	0.7	76.8	76.8	76.8	0.2	0.2	0.2
2	Region 18	0.0	0.0	0.0	2.7	2.7	2.8	0.2	0.0	0.3	75.8	75.0	76.5	0.4	0.0	0.7
2	Region 21	0.0	0.0	0.0	2.6	2.5	2.7	0.8	0.8	0.8	76.1	74.6	77.5	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	2.7	2.7	2.7	0.7	0.7	0.7	76.9	76.9	76.9	0.2	0.2	0.2
4	Region 23	0.0	0.0	0.0	2.1	1.8	2.8	0.7	0.5	0.9	78.3	76.4	80.6	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	2.2	2.2	2.2	0.4	0.4	0.4	76.3	76.3	76.3	1.1	1.1	1.1
8	Region 25	0.0	0.0	0.0	2.1	1.6	2.8	0.4	0.0	0.5	78.0	75.9	79.1	0.0	0.0	0.2
3	Region 26	0.0	0.0	0.0	2.4	2.0	3.0	0.9	0.7	1.2	77.1	76.7	77.8	0.1	0.0	0.2
11	Region 28	0.0	0.0	0.0	2.2	1.5	3.0	0.7	0.2	1.1	75.8	72.9	77.2	0.0	0.0	0.0
11	Region 29	0.0	0.0	0.0	2.6	1.8	3.0	0.7	0.3	1.4	77.9	77.4	78.9	0.1	0.0	0.9
5	Region 30	0.0	0.0	0.0	2.1	1.4	2.8	0.7	0.3	1.0	76.1	75.7	76.6	0.0	0.0	0.0
2	Region 32	0.0	0.0	0.0	2.9	2.8	3.0	2.7	0.9	4.6	77.1	76.6	77.6	0.5	0.0	1.1
4	Region 35	0.0	0.0	0.0	1.8	0.8	3.0	0.7	0.0	1.2	75.9	74.1	78.7	0.1	0.0	0.2
3	Region 36	0.0	0.0	0.0	2.6	2.1	3.0	0.4	0.3	0.4	77.2	76.8	77.9	0.0	0.0	0.0
94	**Ave US 1**	**0.0**			**1.9**			**0.6**			**77.1**			**0.1**		
	Min US 1		**0.0**			**0.3**			**0.0**			**72.9**			**0.0**	
	Max US 1			**0.0**			**3.0**			**4.6**			**80.6**			**1.1**
GRADE: US 2																
4	Region 12	0.0	0.0	0.0	4.4	4.0	4.6	0.6	0.4	0.7	77.6	76.9	78.2	0.6	0.0	2.3
2	Region 13	0.0	0.0	0.0	4.0	3.8	4.2	0.3	0.1	0.5	77.9	77.6	78.1	0.0	0.0	0.0
4	Region 14	0.0	0.0	0.0	3.8	3.3	4.4	0.6	0.5	0.9	76.6	74.8	78.1	0.1	0.0	0.4
1	Region 15	0.0	0.0	0.0	3.4	3.4	3.4	0.8	0.8	0.8	77.3	77.3	77.3	0.2	0.2	0.2
3	Region 16	0.0	0.0	0.0	4.4	4.3	4.6	0.5	0.4	0.6	76.2	75.6	77.1	0.4	0.0	0.8
4	Region 17	0.0	0.0	0.0	4.2	3.8	4.6	0.4	0.2	0.6	76.5	75.9	77.2	0.2	0.0	0.9
2	Region 18	0.0	0.0	0.0	3.4	3.3	3.5	0.6	0.5	0.7	76.2	75.5	76.8	0.1	0.0	0.2
2	Region 19	0.0	0.0	0.0	3.8	3.5	4.1	0.5	0.3	0.7	76.7	75.6	77.8	0.1	0.0	0.2
4	Region 20	0.0	0.0	0.0	3.9	3.7	4.4	0.5	0.2	0.7	77.2	76.3	78.7	0.0	0.0	0.0
6	Region 21	0.0	0.0	0.0	3.7	3.1	4.6	1.0	0.7	1.2	76.8	76.2	77.2	0.1	0.0	0.4
5	Region 23	0.0	0.0	0.0	3.6	3.3	3.8	0.7	0.3	1.2	77.5	75.6	79.4	0.0	0.0	0.0
4	Region 24	0.0	0.0	0.0	3.4	3.2	4.0	0.8	0.5	0.9	77.2	75.2	79.1	0.0	0.0	0.0
10	Region 25	0.0	0.0	0.0	3.9	3.2	4.9	0.6	0.2	1.5	76.6	75.1	78.1	0.1	0.0	0.7
3	Region 26	0.0	0.0	0.0	3.7	3.4	4.2	0.6	0.4	0.8	76.4	76.1	76.8	0.1	0.0	0.4
4	Region 27	0.0	0.0	0.0	4.1	3.5	5.0	1.0	0.2	1.5	76.2	75.5	77.1	0.1	0.0	0.2
18	Region 28	0.0	0.0	0.0	3.7	3.1	5.0	0.6	0.0	1.8	76.4	73.5	78.4	0.0	0.0	0.2
15	Region 29	0.0	0.0	0.0	3.8	3.1	4.8	0.6	0.4	0.9	76.0	70.8	79.3	0.0	0.0	0.6
4	Region 30	0.0	0.0	0.0	3.9	3.4	4.7	0.8	0.5	1.5	76.9	75.6	78.0	0.0	0.0	0.2
5	Region 31	0.0	0.0	0.0	4.1	3.9	4.3	0.7	0.6	0.8	77.0	75.4	77.8	1.6	0.0	4.2
2	Region 32	0.0	0.0	0.0	3.9	3.2	4.7	0.5	0.3	0.7	77.1	76.1	78.0	0.1	0.0	0.2
6	Region 34	0.0	0.0	0.0	4.0	3.4	4.9	0.6	0.4	0.7	77.5	76.3	78.7	0.0	0.0	0.0
1	Region 35	0.0	0.0	0.0	3.9	3.9	3.9	0.5	0.5	0.5	77.3	77.3	77.3	0.0	0.0	0.0
5	Region 36	0.0	0.0	0.0	3.6	3.2	4.0	0.6	0.5	0.8	76.4	75.6	76.9	0.0	0.0	0.0
114	**Ave US 2**	**0.0**			**3.8**			**0.6**			**76.7**			**0.2**		
	Min US 2		**0.0**			**3.1**			**0.0**			**70.8**			**0.0**	
	Max US 2			**0.0**			**5.0**			**1.8**			**79.4**			**4.2**

TABLE 6: USA GRADING OF YELLOW MAIZE (2009/10) (continue)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 3																
1	Region 13	0.0	0.0	0.0	7.0	7.0	7.0	0.9	0.9	0.9	76.9	76.9	76.9	0.0	0.0	0.0
1	Region 14	0.0	0.0	0.0	6.6	6.6	6.6	0.7	0.7	0.7	77.1	77.1	77.1	0.0	0.0	0.0
1	Region 15	0.0	0.0	0.0	6.2	6.2	6.2	1.4	1.4	1.4	77.6	77.6	77.6	0.3	0.3	0.3
1	Region 17	0.0	0.0	0.0	5.6	5.6	5.6	0.6	0.6	0.6	75.4	75.4	75.4	0.2	0.2	0.2
2	Region 18	0.0	0.0	0.0	5.4	5.3	5.4	0.8	0.8	0.8	76.7	76.1	77.3	0.2	0.0	0.4
1	Region 20	0.0	0.0	0.0	5.1	5.1	5.1	0.4	0.4	0.4	77.4	77.4	77.4	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	5.1	5.1	5.1	0.9	0.9	0.9	76.4	76.4	76.4	0.0	0.0	0.0
1	Region 23	0.0	0.0	0.0	5.9	5.9	5.9	3.2	3.2	3.2	75.9	75.9	75.9	0.6	0.6	0.6
2	Region 24	0.0	0.0	0.0	6.1	5.8	6.5	1.1	0.9	1.2	74.2	73.9	74.4	1.0	0.9	1.1
6	Region 25	0.0	0.0	0.0	6.2	5.3	7.0	1.2	0.3	2.1	75.5	70.0	78.0	0.0	0.0	0.2
6	Region 26	0.0	0.0	0.0	6.0	5.3	6.9	0.8	0.5	1.4	76.9	75.3	78.0	0.1	0.0	0.4
1	Region 27	0.0	0.0	0.0	6.1	6.1	6.1	1.2	1.2	1.2	75.6	75.6	75.6	0.6	0.6	0.6
12	Region 28	0.0	0.0	0.0	5.7	2.4	7.0	1.2	0.5	3.1	75.7	71.2	77.8	0.2	0.0	0.6
2	Region 29	0.0	0.0	0.0	6.0	5.2	6.8	1.0	0.9	1.1	77.5	76.5	78.4	0.2	0.0	0.4
1	Region 30	0.0	0.0	0.0	6.3	6.3	6.3	1.4	1.4	1.4	76.6	76.6	76.6	0.6	0.6	0.6
4	Region 31	0.0	0.0	0.0	5.4	5.1	5.6	0.5	0.4	0.6	78.6	76.4	81.6	0.1	0.0	0.2
5	Region 32	0.0	0.0	0.0	5.6	5.2	6.2	0.2	0.2	0.3	77.5	76.0	79.4	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	5.6	5.6	5.6	0.3	0.3	0.3	78.4	78.4	78.4	0.0	0.0	0.0
49	**Ave US 3**	**0.0**			**5.8**			**0.9**			**76.5**			**0.2**		
	Min US 3		**0.0**			**2.4**			**0.2**			**70.0**			**0.0**	
	Max US 3			**0.0**			**7.0**			**3.2**			**81.6**			**1.1**
GRADE: US 4																
1	Region 12	0.0	0.0	0.0	9.7	9.7	9.7	0.7	0.7	0.7	76.8	76.8	76.8	0.2	0.2	0.2
1	Region 13	0.0	0.0	0.0	9.1	9.1	9.1	0.5	0.5	0.5	76.4	76.4	76.4	0.0	0.0	0.0
3	Region 14	0.0	0.0	0.0	7.9	7.3	9.0	0.7	0.6	0.9	74.0	69.0	76.8	0.1	0.0	0.4
1	Region 16	0.0	0.0	0.0	7.8	7.8	7.8	1.3	1.3	1.3	73.7	73.7	73.7	0.2	0.2	0.2
2	Region 19	0.0	0.0	0.0	7.3	7.2	7.3	0.9	0.9	1.0	76.7	76.3	77.1	0.8	0.0	1.7
1	Region 20	0.0	0.0	0.0	7.4	7.4	7.4	1.3	1.3	1.3	75.8	75.8	75.8	0.2	0.2	0.2
6	Region 25	0.0	0.0	0.0	8.1	7.2	9.6	0.7	0.3	1.5	76.5	72.1	78.1	0.1	0.0	0.5
4	Region 26	0.0	0.0	0.0	7.9	7.7	8.2	1.0	0.8	1.3	75.6	74.9	76.0	0.0	0.0	0.0
4	Region 27	0.0	0.0	0.0	9.0	7.9	10.0	1.1	0.9	1.3	76.7	75.5	77.6	0.0	0.0	0.0
13	Region 28	0.0	0.0	0.0	8.3	7.2	9.6	1.0	0.2	2.0	76.0	72.8	77.2	0.1	0.0	0.5
9	Region 29	0.0	0.0	0.0	8.4	7.3	9.8	0.8	0.3	2.1	76.2	71.6	78.2	0.3	0.0	1.3
3	Region 30	0.0	0.0	0.0	6.0	3.5	7.3	2.1	1.0	4.1	74.7	72.9	77.8	0.3	0.0	0.5
4	Region 31	0.0	0.0	0.0	8.5	7.2	9.8	1.1	1.0	1.4	78.5	76.5	80.5	0.1	0.0	0.4
1	Region 34	0.0	0.0	0.0	7.1	7.1	7.1	1.4	1.4	1.4	78.9	78.9	78.9	0.0	0.0	0.0
53	**Ave US 4**	**0.0**			**8.2**			**1.0**			**76.2**			**0.2**		
	Min US 4		**0.0**			**3.5**			**0.2**			**69.0**			**0.0**	
	Max US 4			**0.0**			**10.0**			**4.1**			**80.5**			**1.7**
GRADE: US 5																
1	Region 12	0.0	0.0	0.0	13.1	13.1	13.1	0.9	0.9	0.9	75.7	75.7	75.7	0.4	0.4	0.4
1	Region 14	0.0	0.0	0.0	13.0	13.0	13.0	0.4	0.4	0.4	76.8	76.8	76.8	0.4	0.4	0.4
1	Region 16	0.0	0.0	0.0	12.1	12.1	12.1	0.4	0.4	0.4	75.9	75.9	75.9	0.0	0.0	0.0
2	Region 18	0.0	0.0	0.0	13.4	12.9	14.0	1.1	0.8	1.4	77.2	74.3	80.1	0.0	0.0	0.0
2	Region 20	0.0	0.0	0.0	12.0	11.9	12.2	0.9	0.9	0.9	76.6	75.8	77.3	0.2	0.0	0.4
1	Region 21	0.0	0.0	0.0	10.5	10.5	10.5	1.5	1.5	1.5	72.3	72.3	72.3	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	11.9	11.9	11.9	1.1	1.1	1.1	74.2	74.2	74.2	0.0	0.0	0.0
1	Region 25	0.0	0.0	0.0	10.4	10.4	10.4	0.4	0.4	0.4	77.7	77.7	77.7	0.0	0.0	0.0
1	Region 26	0.0	0.0	0.0	10.2	10.2	10.2	1.8	1.8	1.8	75.9	75.9	75.9	0.0	0.0	0.0
1	Region 27	0.0	0.0	0.0	12.5	12.5	12.5	0.8	0.8	0.8	76.9	76.9	76.9	0.2	0.2	0.2
8	Region 28	0.0	0.0	0.0	12.0	10.1	14.6	1.0	0.5	1.5	75.4	73.3	77.8	0.0	0.0	0.0

TABLE 6: USA GRADING OF YELLOW MAIZE (2009/10) (continue)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Hectolitre mass kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: US 5 (continue)																
3	Region 29	0.0	0.0	0.0	11.9	10.2	14.4	0.5	0.3	0.8	75.0	70.8	77.2	0.4	0.0	1.0
2	Region 34	0.0	0.0	0.0	12.1	11.1	13.0	0.4	0.2	0.7	77.4	76.6	78.2	0.0	0.0	0.0
25	**Ave US 5**	**0.0**			**12.0**			**0.9**			**75.8**			**0.1**		
	Min US 5		**0.0**			**10.1**			**0.2**			**70.8**			**0.0**	
	Max US 5			**0.0**			**14.6**			**1.8**			**80.1**			**1.0**
GRADE: Sample Grade																
1	Region 12	0.0	0.0	0.0	19.4	19.4	19.4	1.1	1.1	1.1	75.8	75.8	75.8	0.4	0.4	0.4
1	Region 13	0.0	0.0	0.0	23.8	23.8	23.8	0.4	0.4	0.4	77.1	77.1	77.1	0.0	0.0	0.0
1	Region 20	0.0	0.0	0.0	17.7	17.7	17.7	1.1	1.1	1.1	75.8	75.8	75.8	0.5	0.5	0.5
1	Region 26	0.0	0.0	0.0	4.3	4.3	4.3	8.8	8.8	8.8	76.5	76.5	76.5	0.4	0.4	0.4
2	Region 28	0.0	0.0	0.0	19.0	17.0	21.0	0.8	0.6	0.9	75.3	74.9	75.7	0.8	0.6	1.0
1	Region 36	0.0	0.0	0.0	16.9	16.9	16.9	1.1	1.1	1.1	73.7	73.7	73.7	1.4	1.4	1.4
7	**Ave Sample Grade**	**0.0**			**17.1**			**2.0**			**75.6**			**0.6**		
	Min Sample Grade		**0.0**			**4.3**			**0.4**			**73.7**			**0.0**	
	Max Sample Grade			**0.0**			**23.8**			**8.8**			**77.1**			**1.4**
342	**Ave yellow maize**	**0.0**			**5.1**			**0.8**			**76.6**			**0.1**		
	Min yellow maize		**0.0**			**0.3**			**0.0**			**69.0**			**0.0**	
	Max yellow maize			**0.0**			**23.8**			**8.8**			**81.6**			**4.2**
800	**Ave maize**	**0.0**			**5.1**			**0.7**			**77.4**			**0.2**		
	Min maize		**0.0**			**0.3**			**0.0**			**60.2**			**0.0**	
	Max maize			**18.5**			**40.1**			**8.8**			**84.4**			**6.5**

TABLE 7: GRADES AND GRADE REQUIREMENTS FOR MAIZE ACCORDING TO RSA GRADING REGULATIONS

Description of deviation		Maximum percentage of deviation allowed (m/m)					
		White maize			Yellow maize		
		GRADE					
		WM1	WM2	WM3	YM1	YM2	YM3
I	Defective maize kernels	7	13	30	*	*	*
	above 6.35 mm grading sieve	*	*	*	9	20	30
	below 6.35 mm grading sieve	*	*	*	4	10	30
II	Other colour maize kernels	3	6	10	2	5	5
III	Foreign matter (excluding glass, stone, coal, dung or metal)	0,3	0,5	0,75	0,3	0,5	0,75
IV	Total deviations in terms I, II and III collectively, provided such deviations are individually within the limits specified above	8	16	30	9	20	30
V	Pinked maize kernels	12	12	12	*	*	*

If the maize does not comply with the standards for Class White Maize of Class Yellow Maize, it shall be classified as Class Other Maize.

* Not specified

Reference: Goverment gazette No. 32190 dated 8 May 2009, Regulation No. R473 (pages 67 - 75)

TABLE 8: GRADES AND GRADE REQUIREMENTS FOR MAIZE ACCORDING TO USA GRADING REGULATIONS

Grades	Minimum test weight per bushel (pounds)		Maximum limits of -		
			Damaged kernels		
			Heat damaged kernels (percent)	Total (percent)	Broken corn and foreign meaterial (percent)
U.S. No. 1	56.0	72.1 kg/hl	0.1	3.0	2.0
U.S. No. 2	54.0	69.5 kg/hl	0.2	5.0	3.0
U.S. No. 3	52.0	66.9 kg/hl	0.5	7.0	4.0
U.S. No. 4	49.0	63.1 kg/hl	1.0	10.0	5.0
U.S. No. 5	46.0	59.2 kg/hl	3.0	15.0	7.0
U.S. Sample Grade	< 46.0	<59.2 kg/hl	>3.0	>15.0	>7.0
U.S. Mix Grade	When % other colour in yellow maize samples >5 % and white maize samples >2 %				

U.S. Sample grade is corn that:

a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4 or 5; or

b) Contains stones which have an aggregate weight in excess of 0.1 percent of the sample weight, 2 or more pieces of glass, 3 or more crotalaria seeds (Crotalaria spp.), 2 or more castor beans (Ricinus communis L.), 4 or more particles of an unknown foreign substance(s) or a commonly recognized harmful or toxic substance(s), 8 or more cockleburs (Xanthium spp.) or similar seeds singly or in combination, or animal filth in excess of 0.20 percent in 1,000 grams; or

c) Has a musty, sour, or commercially objectionable foreign odor; or

d) Is heating or otherwise of distinctly low quality.

Source: Offical United States Standard of Grain (excluding metric conversions).

TABLE 9: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE (2009/10)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1										
1	Region 11	3.9	3.9	3.9	8.2	8.2	8.2	72.6	72.6	72.6
8	Region 12	4.3	4.2	4.5	8.3	7.6	8.9	72.6	71.7	73.2
6	Region 13	4.3	4.1	4.4	8.6	8.4	8.9	72.6	71.9	73.3
11	Region 14	4.5	4.2	4.9	8.8	8.3	9.2	72.0	71.4	73.1
13	Region 15	4.3	4.1	4.4	8.8	8.4	9.1	72.4	71.8	73.4
18	Region 16	4.3	4.2	4.6	8.6	8.2	9.8	72.3	71.7	73.0
10	Region 17	4.4	4.2	4.9	8.4	7.6	8.8	72.4	71.8	73.0
8	Region 18	4.4	4.2	4.9	8.5	8.1	9.0	72.3	71.3	73.5
5	Region 19	4.3	4.2	4.5	8.3	7.6	8.8	72.8	72.3	73.5
5	Region 20	4.2	4.1	4.4	8.2	7.8	8.5	72.8	72.2	73.2
25	Region 21	4.4	4.0	4.9	8.5	8.0	10.0	72.2	71.1	73.6
6	Region 22	4.2	4.0	4.3	8.5	7.9	8.9	72.5	71.5	73.2
21	Region 23	4.3	4.1	4.5	8.7	7.9	10.0	72.5	71.3	73.6
20	Region 24	4.3	4.2	4.5	8.7	8.1	9.5	72.1	70.6	73.4
14	Region 25	4.2	3.7	4.5	7.7	6.6	9.0	72.6	72.1	73.8
12	Region 26	4.3	4.1	4.7	8.1	7.3	9.1	72.7	71.4	73.2
2	Region 27	4.4	4.4	4.4	8.2	8.1	8.2	72.7	72.2	73.2
25	Region 28	4.2	3.8	4.6	8.0	7.4	8.8	72.6	71.7	74.3
26	Region 29	4.2	3.8	4.6	8.1	7.1	9.5	72.7	71.6	73.6
14	Region 30	4.2	3.9	4.7	8.5	7.4	8.9	72.3	71.7	73.9
5	Region 31	4.1	3.9	4.2	8.4	7.9	9.0	73.0	72.4	73.5
17	Region 32	4.1	3.9	4.4	8.2	7.5	8.8	73.0	72.5	73.6
3	Region 33	4.1	4.0	4.3	8.6	7.8	9.8	73.2	72.4	73.8
10	Region 34	4.3	4.1	4.5	8.2	7.8	9.3	73.0	72.5	73.6
7	Region 35	4.4	4.1	4.7	8.6	8.2	9.1	72.0	71.0	73.3
15	Region 36	4.5	4.2	5.8	8.8	7.9	9.6	72.4	70.8	73.8
307	**Ave WM 1**	**4.3**			**8.4**			**72.5**		
	Min WM 1		**3.7**			**6.6**			**70.6**	
	Max WM 1			**5.8**			**10.0**			**74.3**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2009/10)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1										
27	Region 10	3.5	3.3	3.7	7.4	6.5	7.7	73.9	72.8	74.7
4	Region 11	3.6	3.5	3.7	7.6	7.3	7.9	73.3	72.0	74.0
4	Region 12	3.8	3.6	4.0	8.5	8.2	8.9	73.6	73.5	73.7
4	Region 13	4.0	3.8	4.4	9.1	8.8	9.3	72.9	72.5	73.1
6	Region 14	3.9	3.7	4.0	8.7	8.2	9.4	72.8	72.3	73.4
3	Region 15	3.7	3.6	4.0	8.8	8.1	10.1	73.0	72.3	73.6
3	Region 16	3.9	3.9	3.9	9.2	8.7	9.5	72.4	72.2	72.5
6	Region 17	3.9	3.7	4.1	8.6	8.1	9.6	73.5	72.7	74.4
6	Region 18	3.8	3.7	4.1	8.4	8.2	8.6	73.1	72.2	73.7
2	Region 19	4.0	3.9	4.0	8.5	8.3	8.6	73.5	73.2	73.8
5	Region 20	3.8	3.6	4.0	8.4	8.1	8.7	73.3	72.5	73.7
8	Region 21	3.9	3.7	4.0	8.7	8.0	9.1	72.8	72.1	73.5
2	Region 22	3.9	3.9	3.9	9.2	9.1	9.3	72.4	72.2	72.6
9	Region 23	4.0	3.5	4.4	9.3	8.4	9.9	72.0	71.0	72.7
6	Region 24	4.0	3.8	4.2	8.5	8.2	8.9	73.0	72.4	73.6
23	Region 25	3.7	3.5	4.0	8.0	7.2	8.7	73.4	72.4	74.7
11	Region 26	3.8	3.6	4.1	8.2	7.5	9.1	73.5	72.8	74.0
4	Region 27	3.6	3.4	3.9	8.0	7.6	8.4	73.1	72.9	73.4
35	Region 28	3.8	3.5	4.7	8.1	7.3	9.2	73.1	71.7	74.3
27	Region 29	3.9	3.4	4.4	8.2	6.9	9.2	73.5	71.8	75.4
8	Region 30	3.9	3.6	4.5	7.9	7.0	8.4	73.3	72.1	74.4
7	Region 31	3.9	3.8	4.1	8.1	7.9	8.4	73.6	73.1	74.4
8	Region 32	3.8	3.4	4.2	8.2	7.6	8.6	73.5	72.7	74.1
7	Region 34	4.0	3.9	4.1	8.2	7.7	8.7	73.4	72.6	74.2
5	Region 35	3.8	3.4	3.9	8.0	7.4	8.6	73.2	72.9	73.5
8	Region 36	3.9	3.6	4.3	8.3	7.8	8.9	73.0	71.7	73.7
238	**Ave YM 1**	**3.8**			**8.2**			**73.3**		
	Min YM 1		**3.3**			**6.5**			**71.0**	
	Max YM 1			**4.7**			**10.1**			**75.4**

TABLE 9: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE (2009/10) (continue)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2										
1	Region 11	4.0	4.0	4.0	9.5	9.5	9.5	71.7	71.7	71.7
1	Region 12	4.4	4.4	4.4	8.2	8.2	8.2	71.9	71.9	71.9
2	Region 13	4.1	4.0	4.1	8.1	7.7	8.4	73.2	73.0	73.3
7	Region 14	4.3	4.0	4.6	8.5	8.0	9.2	72.6	71.5	73.2
6	Region 15	4.3	4.2	4.4	8.7	8.6	8.9	72.4	71.8	73.1
4	Region 16	4.2	4.1	4.3	8.7	8.4	8.8	72.3	72.0	72.4
3	Region 17	4.0	3.9	4.1	8.5	8.2	8.7	72.8	72.5	73.1
4	Region 18	4.2	4.0	4.3	8.2	7.9	8.4	72.9	72.7	73.1
4	Region 19	4.1	3.8	4.4	8.5	8.4	8.6	72.6	72.2	73.1
3	Region 20	4.1	4.1	4.2	8.4	8.3	8.5	73.0	72.9	73.1
3	Region 21	4.2	4.0	4.3	8.9	8.8	9.0	72.8	72.5	73.2
4	Region 22	4.3	4.2	4.5	8.5	8.2	9.0	73.2	72.9	73.9
9	Region 23	4.2	4.0	4.7	8.2	6.6	8.9	72.7	72.0	73.4
11	Region 24	4.1	3.7	4.4	8.1	7.0	8.8	73.0	72.2	74.6
8	Region 25	4.1	3.9	4.5	7.8	6.7	8.7	72.9	72.0	74.6
5	Region 26	4.4	3.9	5.6	8.5	7.8	9.2	72.3	71.2	73.1
4	Region 27	4.2	4.0	4.3	8.2	7.5	9.3	72.4	71.0	73.0
11	Region 28	4.2	3.8	4.4	8.0	6.8	9.3	72.7	72.1	73.6
6	Region 29	4.1	3.9	4.3	8.5	7.8	9.5	72.3	71.4	73.1
4	Region 30	3.9	3.5	4.2	8.0	7.4	8.5	73.4	72.6	74.3
9	Region 31	4.0	3.5	4.6	8.2	7.7	9.4	73.5	72.6	74.3
8	Region 32	4.0	3.7	4.3	8.1	7.8	8.6	73.2	72.6	73.7
1	Region 33	4.1	4.1	4.1	8.3	8.3	8.3	72.2	72.2	72.2
6	Region 34	4.3	4.0	4.6	8.3	7.7	8.9	72.9	71.6	73.6
1	Region 35	4.1	4.1	4.1	9.1	9.1	9.1	72.9	72.9	72.9
1	Region 36	4.3	4.3	4.3	7.8	7.8	7.8	73.0	73.0	73.0
126	**Ave WM 2**	**4.2**			**8.3**			**72.8**		
	Min WM 2		**3.5**			**6.6**			**71.0**	
	Max WM 2			**5.6**			**9.5**			**74.6**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2009/10) (continue)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 2										
3	Region 12	4.0	3.8	4.4	8.2	7.8	8.5	73.4	73.2	73.7
1	Region 13	3.7	3.7	3.7	8.7	8.7	8.7	72.8	72.8	72.8
4	Region 14	4.0	3.4	4.4	7.8	7.0	8.7	73.8	73.0	74.7
1	Region 15	3.9	3.9	3.9	9.1	9.1	9.1	72.5	72.5	72.5
2	Region 16	4.0	3.9	4.1	9.1	8.8	9.4	72.7	72.3	73.1
2	Region 18	3.5	3.3	3.6	7.7	7.5	7.9	73.8	73.8	73.8
2	Region 19	3.8	3.7	3.9	9.0	8.6	9.3	73.4	72.8	74.0
3	Region 20	3.7	3.4	3.9	8.1	8.0	8.2	73.8	73.3	74.5
1	Region 21	3.4	3.4	3.4	6.5	6.5	6.5	74.7	74.7	74.7
1	Region 22	3.4	3.4	3.4	7.5	7.5	7.5	73.7	73.7	73.7
1	Region 23	3.7	3.7	3.7	9.1	9.1	9.1	73.5	73.5	73.5
1	Region 24	3.7	3.7	3.7	7.5	7.5	7.5	72.7	72.7	72.7
8	Region 25	3.7	3.3	4.0	8.4	8.1	8.6	72.9	72.3	73.8
6	Region 26	3.6	3.5	3.6	7.7	7.4	8.2	74.2	73.3	74.7
6	Region 27	3.6	3.4	3.9	7.8	7.5	8.2	73.9	73.2	74.6
28	Region 28	3.7	3.3	4.5	7.7	6.5	8.6	73.5	72.4	74.6
13	Region 29	3.8	3.5	4.1	7.9	7.0	9.3	73.6	71.5	74.5
4	Region 30	3.9	3.7	4.1	8.1	7.1	8.6	73.3	72.7	74.1
6	Region 31	3.9	3.9	3.9	7.9	7.6	8.2	73.9	73.7	74.2
1	Region 32	4.1	4.1	4.1	7.8	7.8	7.8	73.5	73.5	73.5
3	Region 34	3.8	3.8	3.9	7.8	7.5	8.0	73.9	73.8	74.1
97	**Ave YM 2**	**3.8**			**7.9**			**73.6**		
	Min YM 2		**3.3**			**6.5**			**71.5**	
	Max YM 2			**4.5**			**9.4**			**74.7**

TABLE 9: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE (2009/10) (continue)

Number of samples	Region	% (db) Fat ave.	% (db) Fat min.	% (db) Fat max.	% (db) Protein ave.	% (db) Protein min.	% (db) Protein max.	% (db) Starch ave.	% (db) Starch min.	% (db) Starch max.
GRADE: WM 3										
2	Region 12	4.1	4.0	4.2	8.4	7.8	8.9	73.2	73.1	73.2
1	Region 13	4.2	4.2	4.2	7.7	7.7	7.7	73.3	73.3	73.3
1	Region 17	4.2	4.2	4.2	9.2	9.2	9.2	72.6	72.6	72.6
2	Region 18	4.0	3.9	4.0	7.9	7.8	8.0	74.1	73.7	74.5
1	Region 19	3.9	3.9	3.9	8.6	8.6	8.6	72.5	72.5	72.5
2	Region 20	4.0	3.9	4.0	8.2	8.1	8.2	73.3	73.1	73.4
1	Region 21	4.1	4.1	4.1	8.4	8.4	8.4	73.5	73.5	73.5
4	Region 23	4.0	3.7	4.2	8.4	7.5	8.9	72.9	72.6	73.2
1	Region 24	4.2	4.2	4.2	8.1	8.1	8.1	73.4	73.4	73.4
1	Region 25	4.0	4.0	4.0	8.5	8.5	8.5	72.4	72.4	72.4
2	Region 26	4.0	3.8	4.1	7.9	7.0	8.8	73.3	72.6	73.9
4	Region 28	4.0	3.8	4.1	8.3	8.0	9.0	72.7	72.4	73.0
1	Region 29	4.2	4.2	4.2	8.4	8.4	8.4	72.2	72.2	72.2
1	Region 32	3.8	3.8	3.8	9.3	9.3	9.3	72.9	72.9	72.9
24	**Ave WM 3**	**4.0**			**8.3**			**73.0**		
	Min WM 3		**3.7**			**7.0**			**72.2**	
	Max WM 3			**4.2**			**9.3**			**74.5**
GRADE: COM										
1	Region 33	3.5	3.5	3.5	9.7	9.7	9.7	72.9	72.9	72.9
1	**Ave COM**	**3.5**			**9.7**			**72.9**		
	Min COM		**3.5**			**9.7**			**72.9**	
	Max COM			**3.5**			**9.7**			**72.9**
458	**Ave White**	**4.2**			**8.4**			**72.6**		
	Min White		**3.5**			**6.6**			**70.6**	
	Max White			**5.8**			**10.0**			**74.6**
800	**Ave Maize**	**4.0**			**8.3**			**72.9**		
	Min Maize		**3.3**			**6.5**			**70.6**	
	Max Maize			**5.8**			**10.1**			**75.4**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2009/10) (continue)

Number of samples	Region	% (db) Fat ave.	% (db) Fat min.	% (db) Fat max.	% (db) Protein ave.	% (db) Protein min.	% (db) Protein max.	% (db) Starch ave.	% (db) Starch min.	% (db) Starch max.
GRADE: YM3										
1	Region 12	3.6	3.6	3.6	9.1	9.1	9.1	74.1	74.1	74.1
1	Region 13	3.5	3.5	3.5	8.6	8.6	8.6	74.0	74.0	74.0
1	Region 20	3.6	3.6	3.6	8.8	8.8	8.8	73.3	73.3	73.3
1	Region 26	4.1	4.1	4.1	8.9	8.9	8.9	72.5	72.5	72.5
1	Region 28	3.4	3.4	3.4	7.5	7.5	7.5	74.9	74.9	74.9
1	Region 36	3.6	3.6	3.6	7.9	7.9	7.9	74.3	74.3	74.3
6	**Ave YM3**	**3.6**			**8.5**			**73.9**		
	Min YM3		**3.4**			**7.5**			**72.5**	
	Max YM3			**4.1**			**9.1**			**74.9**
GRADE: COM										
1	Region 30	3.8	3.8	3.8	8.5	8.5	8.5	72.0	72.0	72.0
1	**Ave COM**	**3.8**			**8.5**			**72.0**		
	Min COM		**3.8**			**8.5**			**72.0**	
	Max COM			**3.8**			**8.5**			**72.0**
342	**Ave Yellow**	**3.8**			**8.1**			**73.4**		
	Min Yellow		**3.3**			**6.5**			**71.0**	
	Max Yellow			**4.7**			**10.1**			**75.4**
800	**Ave Maize**	**4.0**			**8.3**			**72.9**		
	Min Maize		**3.3**			**6.5**			**70.6**	
	Max Maize			**5.8**			**10.1**			**75.4**

TABLE 10: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE (2009/2010)

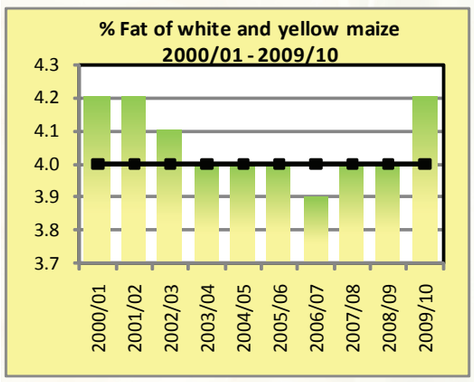
Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	WHITE									
2	Region 11	4.0	3.9	4.0	8.9	8.2	9.5	72.2	71.7	72.6
11	Region 12	4.3	4.0	4.5	8.3	7.6	8.9	72.6	71.7	73.2
9	Region 13	4.2	4.0	4.4	8.4	7.7	8.9	72.8	71.9	73.3
18	Region 14	4.4	4.0	4.9	8.7	8.0	9.2	72.2	71.4	73.2
19	Region 15	4.3	4.1	4.4	8.8	8.4	9.1	72.4	71.8	73.4
22	Region 16	4.3	4.1	4.6	8.6	8.2	9.8	72.3	71.7	73.0
14	Region 17	4.3	3.9	4.9	8.5	7.6	9.2	72.5	71.8	73.1
14	Region 18	4.3	3.9	4.9	8.3	7.8	9.0	72.7	71.3	74.5
10	Region 19	4.2	3.8	4.5	8.4	7.6	8.8	72.7	72.2	73.5
10	Region 20	4.1	3.9	4.4	8.2	7.8	8.5	73.0	72.2	73.4
29	Region 21	4.4	4.0	4.9	8.5	8.0	10.0	72.3	71.1	73.6
10	Region 22	4.3	4.0	4.5	8.5	7.9	9.0	72.8	71.5	73.9
34	Region 23	4.2	3.7	4.7	8.5	6.6	10.0	72.6	71.3	73.6
32	Region 24	4.2	3.7	4.5	8.5	7.0	9.5	72.5	70.6	74.6
23	Region 25	4.2	3.7	4.5	7.8	6.6	9.0	72.7	72.0	74.6
19	Region 26	4.3	3.8	5.6	8.1	7.0	9.2	72.6	71.2	73.9
6	Region 27	4.3	4.0	4.4	8.2	7.5	9.3	72.5	71.0	73.2
40	Region 28	4.1	3.8	4.6	8.0	6.8	9.3	72.6	71.7	74.3
33	Region 29	4.2	3.8	4.6	8.2	7.1	9.5	72.6	71.4	73.6
18	Region 30	4.1	3.5	4.7	8.3	7.4	8.9	72.6	71.7	74.3
14	Region 31	4.0	3.5	4.6	8.3	7.7	9.4	73.3	72.4	74.3
26	Region 32	4.1	3.7	4.4	8.2	7.5	9.3	73.1	72.5	73.7
5	Region 33	4.0	3.5	4.3	8.7	7.8	9.8	73.0	72.2	73.8
16	Region 34	4.3	4.0	4.6	8.2	7.7	9.3	73.0	71.6	73.6
8	Region 35	4.4	4.1	4.7	8.7	8.2	9.1	72.1	71.0	73.3
16	Region 36	4.5	4.2	5.8	8.7	7.8	9.6	72.4	70.8	73.8
458	**Ave white**	**4.2**			**8.4**			**72.6**		
	Min white		**3.5**			**6.6**			**70.6**	
	Max white			**5.8**			**10.0**			**74.6**
	YELLOW									
27	Region 10	3.5	3.3	3.7	7.4	6.5	7.7	73.9	72.8	74.7
4	Region 11	3.6	3.5	3.7	7.6	7.3	7.9	73.3	72.0	74.0
8	Region 12	3.9	3.6	4.4	8.5	7.8	9.1	73.6	73.2	74.1
6	Region 13	3.9	3.5	4.4	8.9	8.6	9.3	73.1	72.5	74.0
10	Region 14	3.9	3.4	4.4	8.3	7.0	9.4	73.2	72.3	74.7
4	Region 15	3.8	3.6	4.0	8.9	8.1	10.1	72.9	72.3	73.6
5	Region 16	3.9	3.9	4.1	9.2	8.7	9.5	72.5	72.2	73.1
6	Region 17	3.9	3.7	4.1	8.6	8.1	9.6	73.5	72.7	74.4
8	Region 18	3.7	3.3	4.1	8.3	7.5	8.6	73.3	72.2	73.8
4	Region 19	3.9	3.7	4.0	8.7	8.3	9.3	73.5	72.8	74.0
9	Region 20	3.8	3.4	4.0	8.3	8.0	8.8	73.5	72.5	74.5
9	Region 21	3.8	3.4	4.0	8.4	6.5	9.1	73.0	72.1	74.7
3	Region 22	3.7	3.4	3.9	8.6	7.5	9.3	72.8	72.2	73.7
10	Region 23	4.0	3.5	4.4	9.3	8.4	9.9	72.2	71.0	73.5
7	Region 24	3.9	3.7	4.2	8.4	7.5	8.9	73.0	72.4	73.6
31	Region 25	3.7	3.3	4.0	8.1	7.2	8.7	73.3	72.3	74.7

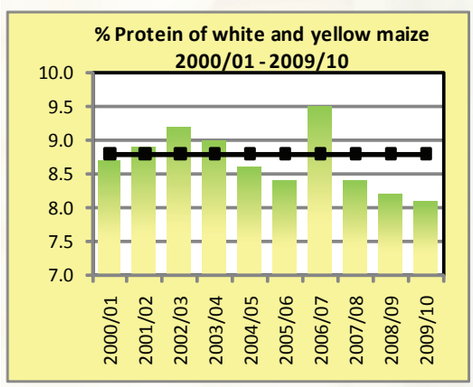
TABLE 10: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE (2009/2010) (continue)

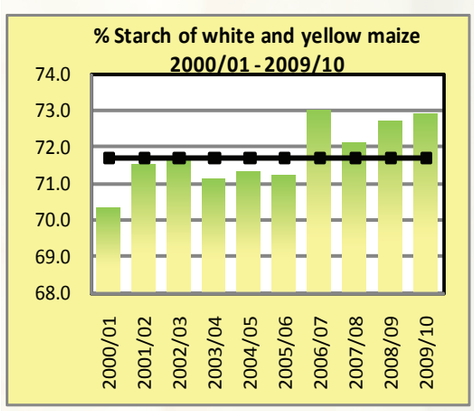
Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
YELLOW										
18	Region 26	3.7	3.5	4.1	8.1	7.4	9.1	73.6	72.5	74.7
10	Region 27	3.6	3.4	3.9	7.9	7.5	8.4	73.6	72.9	74.6
64	Region 28	3.8	3.3	4.7	7.9	6.5	9.2	73.3	71.7	74.9
40	Region 29	3.8	3.4	4.4	8.1	6.9	9.3	73.6	71.5	75.4
13	Region 30	3.9	3.6	4.5	8.0	7.0	8.6	73.2	72.0	74.4
13	Region 31	3.9	3.8	4.1	8.0	7.6	8.4	73.8	73.1	74.4
9	Region 32	3.9	3.4	4.2	8.2	7.6	8.6	73.5	72.7	74.1
10	Region 34	3.9	3.8	4.1	8.1	7.5	8.7	73.6	72.6	74.2
5	Region 35	3.8	3.4	3.9	8.0	7.4	8.6	73.2	72.9	73.5
9	Region 36	3.8	3.6	4.3	8.3	7.8	8.9	73.1	71.7	74.3
342	**Ave yellow**	**3.8**			**8.1**			**73.4**		
	Min yellow		**3.3**			**6.5**			**71.0**	
	Max yellow			**4.7**			**10.1**			**75.4**
WHITE AND YELLOW										
27	Region 10	3.5	3.3	3.7	7.4	6.5	7.7	73.9	72.8	74.7
6	Region 11	3.7	3.5	4.0	8.0	7.3	9.5	72.9	71.7	74.0
19	Region 12	4.1	3.6	4.5	8.4	7.6	9.1	73.0	71.7	74.1
15	Region 13	4.1	3.5	4.4	8.6	7.7	9.3	72.9	71.9	74.0
28	Region 14	4.2	3.4	4.9	8.6	7.0	9.4	72.6	71.4	74.7
23	Region 15	4.2	3.6	4.4	8.8	8.1	10.1	72.5	71.8	73.6
27	Region 16	4.2	3.9	4.6	8.7	8.2	9.8	72.4	71.7	73.1
20	Region 17	4.1	3.7	4.9	8.5	7.6	9.6	72.8	71.8	74.4
22	Region 18	4.1	3.3	4.9	8.3	7.5	9.0	72.9	71.3	74.5
14	Region 19	4.1	3.7	4.5	8.5	7.6	9.3	72.9	72.2	74.0
19	Region 20	4.0	3.4	4.4	8.3	7.8	8.8	73.2	72.2	74.5
38	Region 21	4.2	3.4	4.9	8.5	6.5	10.0	72.5	71.1	74.7
13	Region 22	4.1	3.4	4.5	8.5	7.5	9.3	72.8	71.5	73.9
44	Region 23	4.2	3.5	4.7	8.7	6.6	10.0	72.5	71.0	73.6
39	Region 24	4.2	3.7	4.5	8.5	7.0	9.5	72.6	70.6	74.6
54	Region 25	3.9	3.3	4.5	8.0	6.6	9.0	73.0	72.0	74.7
37	Region 26	4.0	3.5	5.6	8.1	7.0	9.2	73.1	71.2	74.7
16	Region 27	3.8	3.4	4.4	8.0	7.5	9.3	73.2	71.0	74.6
104	Region 28	3.9	3.3	4.7	8.0	6.5	9.3	73.0	71.7	74.9
73	Region 29	4.0	3.4	4.6	8.1	6.9	9.5	73.1	71.4	75.4
31	Region 30	4.0	3.5	4.7	8.2	7.0	8.9	72.8	71.7	74.4
27	Region 31	4.0	3.5	4.6	8.2	7.6	9.4	73.5	72.4	74.4
35	Region 32	4.0	3.4	4.4	8.2	7.5	9.3	73.2	72.5	74.1
5	Region 33	4.0	3.5	4.3	8.7	7.8	9.8	73.0	72.2	73.8
26	Region 34	4.2	3.8	4.6	8.2	7.5	9.3	73.2	71.6	74.2
13	Region 35	4.1	3.4	4.7	8.4	7.4	9.1	72.5	71.0	73.5
25	Region 36	4.3	3.6	5.8	8.6	7.8	9.6	72.7	70.8	74.3
800	**Ave white & yellow**	**4.0**			**8.3**			**72.9**		
	Min white & yellow		**3.3**			**6.5**			**70.6**	
	Max white & yellow			**5.8**			**10.1**			**75.4**

TABLE 11: NUTRITIONAL VALUES OF SOUTH AFRICAN WHITE AND YELLOW MAIZE 2000/01 - 2009/10

Season	Number of samples	% Fat			% Protein			% Starch		
		av.	min.	max.	av.	min.	max.	av.	min.	max.
White Maize										
2000/01	522	4.2	3.1	5.7	8.8	6.6	11.9	70.2	66.6	73.4
2001/02	471	4.2	3.2	5.1	8.9	6.7	11.5	71.4	58.3	78.3
2002/03	517	4.1	3.0	5.4	9.2	7.3	11.7	71.4	62.5	75.7
2003/04	599	4.0	3.7	4.6	9.1	7.9	10.2	71.2	70.2	72.3
2004/05	601	4.0	3.1	4.5	8.9	6.5	12.0	71.1	68.9	73.7
2005/06	593	4.0	3.3	5.0	8.5	6.4	10.4	71.1	69.5	73.4
2006/07	563	3.9	2.9	4.8	9.3	7.5	12.0	72.9	70.1	74.9
2007/08	483	4.0	3.2	4.7	8.6	6.6	10.9	71.9	69.9	74.0
2008/09	483	4.0	3.5	5.1	8.3	6.4	10.4	72.4	70.7	74.2
2009/10	458	4.2	3.5	5.8	8.4	6.6	10.0	72.6	70.6	74.6
Weighted Average		**4.1**			**8.8**			**71.6**		
Minimum			**2.9**			**6.4**			**58.3**	
Maximum				**5.8**			**12.0**			**78.3**
Yellow Maize										
2000/01	378	4.2	3.0	5.3	8.7	7.2	11.0	70.5	67.3	72.8
2001/02	429	4.1	3.0	5.5	8.9	6.8	11.6	71.7	66.2	74.7
2002/03	383	4.1	3.1	5.1	9.2	7.2	11.5	72.0	66.0	75.9
2003/04	301	4.0	3.5	4.4	9.0	8.2	9.9	71.1	70.2	72.6
2004/05	399	3.8	2.9	4.7	8.6	6.9	11.1	71.7	69.1	74.3
2005/06	307	3.9	3.2	4.9	8.4	6.6	9.7	71.5	69.5	73.3
2006/07	337	3.5	2.8	4.6	9.5	6.9	12.7	73.3	70.5	75.2
2007/08	417	3.6	2.9	4.8	8.4	6.9	10.4	72.3	70.0	75.0
2008/09	327	3.6	2.9	4.7	8.2	6.2	10.6	73.2	71.1	74.8
2009/10	342	3.8	3.3	4.7	8.1	6.5	10.1	73.4	71.0	75.4
Weighted Average		**3.9**			**8.7**			**72.1**		
Minimum			**2.8**			**6.2**			**66.0**	
Maximum				**5.5**			**12.7**			**75.9**
White and Yellow Maize										
2000/01	900	4.2	3.0	5.7	8.8	6.6	11.9	70.3	66.6	73.4
2001/02	900	4.2	3.0	5.5	8.9	6.7	11.6	71.5	58.3	74.7
2002/03	900	4.1	3.0	5.4	9.2	7.2	11.7	71.6	62.5	75.9
2003/04	900	4.0	3.5	4.6	9.1	7.9	10.2	71.1	70.2	72.6
2004/05	1000	3.9	2.9	4.7	8.8	6.5	12.0	71.3	68.9	74.3
2005/06	900	4.0	3.2	5.0	8.4	6.4	10.4	71.2	69.5	73.4
2006/07	900	3.7	2.8	4.8	9.4	6.9	12.7	73.0	70.1	75.2
2007/08	900	3.8	2.9	4.8	8.5	6.6	10.9	72.1	69.9	75.0
2008/09	810	3.8	2.9	5.1	8.3	6.2	10.6	72.7	70.7	74.8
2009/10	800	4.0	3.3	5.8	8.3	6.5	10.1	72.9	70.6	75.4
Weighted Average		**4.0**			**8.8**			**71.7**		
Minimum			**2.8**			**6.2**			**58.3**	
Maximum				**5.8**			**12.7**			**75.9**







Please note:
Different starch methods have been used over years and data have been corrected accordingly.

TABLE 12: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE (2009/2010)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1																												
1	Region 11	77.8	77.8	77.8	32.0	32.0	32.0	1.2	1.2	1.2	62.7	62.7	62.7	36.1	36.1	36.1	2.9	2.9	2.9	2.0	2.0	2.0	7	7	7	98.8	98.8	98.8
8	Region 12	78.5	74.5	80.2	35.5	30.7	38.9	18.9	7.7	27.0	67.3	58.0	78.3	13.8	8.8	22.7	1.2	0.5	2.0	1.1	0.2	1.7	4	0	7	89.5	80.4	99.2
6	Region 13	79.2	76.6	80.4	34.8	33.1	37.0	26.2	14.5	38.7	64.9	55.4	72.0	8.9	5.9	16.1	1.2	0.7	1.7	0.9	0.4	1.3	3	1	6	92.8	87.4	97.4
11	Region 14	79.6	77.6	81.7	36.6	33.2	39.7	24.3	4.0	33.4	65.5	60.6	70.2	10.2	4.3	28.6	1.0	0.2	1.7	0.9	0.2	1.5	4	1	8	96.6	91.8	108.2
13	Region 15	79.2	77.0	84.4	36.0	34.2	38.0	32.4	24.6	40.1	59.9	51.6	69.3	7.7	5.5	10.1	1.1	0.4	1.8	0.8	0.3	1.3	2	0	5	97.4	92.5	101.9
18	Region 16	79.2	78.0	80.5	36.5	34.1	39.1	30.8	24.8	42.2	61.3	54.9	69.0	8.0	2.9	15.1	1.1	0.6	2.1	0.9	0.3	1.7	3	1	8	93.9	87.0	103.0
10	Region 17	77.8	76.8	79.6	35.2	32.5	39.0	21.5	13.1	31.7	67.3	60.3	72.0	11.2	6.6	19.8	1.6	0.6	2.7	1.2	0.6	1.9	3	1	7	90.7	87.5	94.3
8	Region 18	78.0	76.8	78.8	35.9	33.1	38.2	23.3	11.8	33.8	65.9	58.8	74.5	10.8	7.4	13.7	1.3	0.5	2.2	1.0	0.5	1.6	3	2	6	91.4	81.5	98.7
5	Region 19	78.1	77.9	78.5	35.8	33.8	37.8	20.6	13.0	28.8	66.9	61.7	74.4	12.5	9.5	14.5	1.1	0.6	1.6	0.8	0.3	1.2	5	1	10	91.1	84.7	96.9
5	Region 20	75.1	60.2	78.9	35.5	33.6	38.9	26.2	17.0	31.9	60.2	53.8	67.7	13.6	9.1	19.3	1.4	0.6	2.1	1.1	0.6	1.4	2	0	3	88.6	85.0	94.2
25	Region 21	77.8	74.7	79.0	36.0	32.1	59.1	25.5	12.5	90.7	63.3	9.2	73.8	11.3	0.1	20.0	1.4	0.3	2.6	1.1	0.3	2.4	3	0	11	91.3	78.7	99.4
6	Region 22	78.8	74.9	80.3	35.9	31.5	40.3	30.8	20.9	37.9	59.5	54.6	69.1	9.8	6.7	14.0	1.4	0.9	2.8	1.1	0.4	2.3	2	0	4	94.2	82.0	101.2
21	Region 23	79.0	76.6	80.9	36.1	30.9	41.9	28.5	6.3	40.5	63.9	53.7	82.0	7.6	3.3	13.4	1.1	0.4	2.5	0.9	0.2	2.0	3	0	16	96.3	85.2	103.8
20	Region 24	78.8	77.4	80.6	35.9	32.7	39.4	27.7	12.6	41.4	63.1	52.4	75.8	9.2	4.7	16.5	1.7	0.4	3.7	1.3	0.4	2.8	4	0	14	95.9	77.2	107.1
14	Region 25	76.9	72.6	79.9	36.1	29.6	42.8	28.2	7.8	41.7	60.6	38.7	72.0	11.3	5.1	53.5	1.6	0.6	3.0	1.1	0.4	2.3	6	0	14	85.8	72.7	96.1
12	Region 26	77.4	73.9	80.2	33.4	30.1	35.7	17.6	4.5	30.3	66.9	60.9	75.8	15.4	7.9	31.3	1.8	0.8	3.3	1.4	0.5	2.7	4	0	10	90.6	73.7	112.8
2	Region 27	77.8	77.0	78.6	35.1	34.1	36.0	21.3	18.8	23.7	69.8	68.1	71.5	9.0	8.2	9.7	3.0	1.5	4.5	2.0	1.1	2.9	11	7	15	89.3	80.3	98.2
25	Region 28	77.3	73.2	79.9	36.6	29.6	41.5	28.4	1.3	47.7	61.3	44.6	75.9	10.3	1.6	35.1	2.1	0.3	20.4	1.5	0.3	12.3	4	0	9	87.5	79.8	100.2
26	Region 29	77.8	73.8	80.5	34.9	24.1	40.1	23.5	7.5	38.9	64.5	54.7	79.3	12.0	4.5	27.6	1.3	0.2	4.9	1.0	0.1	3.8	4	0	16	90.6	72.5	107.6
14	Region 30	76.9	71.1	78.9	37.3	29.2	41.5	26.8	7.9	47.1	63.0	49.0	74.7	10.2	3.1	23.3	1.5	0.4	3.2	1.2	0.4	3.1	6	0	21	95.9	79.9	107.2
5	Region 31	78.7	78.2	79.1	36.3	33.7	37.9	17.1	7.2	25.8	71.7	62.5	79.3	11.3	3.9	14.9	1.1	0.9	1.3	0.9	0.6	1.1	3	2	6	94.7	83.8	98.7
17	Region 32	78.6	76.9	80.3	38.3	33.3	43.3	32.8	9.7	47.6	58.3	48.6	72.1	8.9	3.8	18.4	1.3	0.5	2.4	1.0	0.4	2.2	2	0	7	89.5	82.8	96.9
3	Region 33	77.1	75.6	78.2	40.1	36.8	42.0	32.7	23.2	48.7	58.8	47.4	69.0	8.5	3.9	13.8	1.0	0.2	2.0	0.9	0.1	1.9	2	1	2	89.4	85.8	96.0
10	Region 34	78.6	77.6	80.7	37.0	33.9	40.0	28.5	16.5	45.3	61.5	48.4	67.7	9.9	6.3	17.6	0.9	0.3	1.6	0.7	0.1	1.3	2	0	3	90.8	83.2	97.6
7	Region 35	78.1	74.7	80.6	33.3	26.0	40.5	25.6	3.8	54.9	59.5	40.7	65.2	14.9	4.4	38.3	1.6	0.8	2.9	1.2	0.5	2.3	3	1	4	94.5	84.4	105.0
15	Region 36	77.3	74.7	80.0	35.8	29.4	39.1	15.0	1.9	29.6	68.5	53.0	74.5	16.5	8.8	35.3	1.4	0.5	4.3	1.1	0.5	3.0	7	0	28	98.8	90.3	111.0
307	**Ave WM 1**	**78.1**			**36.0**			**25.8**			**63.3**			**10.8**			**1.4**			**1.1**			**4**			**92.4**		
	Min WM 1		**60.2**			**24.1**			**1.2**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**72.5**	
	Max WM 1			**84.4**			**59.1**			**90.7**			**82.0**			**53.5**			**20.4**			**12.3**			**28**			**112.8**

TABLE 12: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE (2009/2010)
(continue)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2																												
1	Region 11	80.4	80.4	80.4	41.0	41.0	41.0	26.0	26.0	26.0	69.0	69.0	69.0	5.0	5.0	5.0	1.7	1.7	1.7	1.4	1.4	1.4	5	5	5	119.1	119.1	119.1
1	Region 12	79.2	79.2	79.2	37.3	37.3	37.3	21.8	21.8	21.8	63.4	63.4	63.4	14.8	14.8	14.8	1.2	1.2	1.2	1.1	1.1	1.1	1	1	1	84.5	84.5	84.5
2	Region 13	78.6	78.5	78.7	35.2	35.0	35.4	37.4	30.8	44.0	55.7	50.9	60.5	6.9	5.1	8.7	1.4	1.0	1.7	1.2	0.9	1.5	2	2	2	90.7	90.0	91.3
7	Region 14	78.5	76.9	80.2	35.7	33.5	38.1	26.5	10.5	36.1	62.4	56.1	70.0	11.0	5.4	19.7	1.5	0.7	2.6	1.2	0.6	1.9	2	1	5	90.8	82.5	98.7
6	Region 15	79.6	78.9	80.1	37.2	35.5	39.7	36.7	31.4	40.3	54.6	50.0	60.6	8.7	6.8	10.9	0.8	0.6	1.0	0.7	0.4	0.9	2	0	4	99.1	97.2	101.5
4	Region 16	78.7	78.1	79.8	37.1	36.3	38.5	34.1	27.8	44.3	58.8	51.4	64.9	7.1	4.3	8.5	1.3	0.9	2.4	1.2	0.7	2.2	2	0	4	95.0	89.6	99.9
3	Region 17	77.9	77.6	78.2	34.9	34.4	35.9	21.8	16.9	30.0	67.1	62.9	70.1	11.1	7.1	13.3	1.0	0.9	1.1	0.9	0.8	1.0	3	2	5	89.1	87.5	90.1
4	Region 18	78.1	77.1	78.8	37.2	36.3	39.3	26.2	19.7	34.2	60.5	57.7	65.4	13.3	8.1	18.9	1.9	0.9	2.5	1.4	0.8	2.0	3	1	5	88.1	84.3	93.5
4	Region 19	77.9	77.3	78.8	34.6	33.5	35.6	17.9	13.0	24.5	65.3	62.0	67.7	16.8	10.7	21.5	1.3	0.9	1.7	1.1	0.8	1.4	1	0	2	90.4	87.2	95.4
3	Region 20	77.0	76.7	77.3	37.3	35.2	41.1	27.4	23.5	30.0	64.2	62.7	67.0	8.5	7.2	9.5	1.7	1.1	2.6	1.3	0.8	1.9	3	1	4	88.5	82.7	91.8
3	Region 21	77.4	75.9	80.0	31.9	29.9	35.5	18.9	12.8	22.7	68.3	63.8	73.6	12.8	11.3	13.6	2.3	1.7	3.1	1.4	1.1	1.8	6	1	8	90.0	85.2	97.7
4	Region 22	77.8	76.3	78.7	35.2	34.3	36.1	34.0	20.4	45.9	57.8	49.7	69.2	8.3	4.4	10.4	1.9	0.8	4.2	1.1	0.3	1.9	4	0	12	90.6	80.8	96.9
9	Region 23	78.0	73.4	80.3	35.4	30.2	39.8	29.9	6.4	53.6	60.2	44.0	71.0	9.9	2.4	31.4	1.9	0.7	4.1	1.4	0.7	3.2	4	0	10	90.1	65.4	103.0
11	Region 24	78.5	73.4	80.9	35.3	31.0	38.4	25.6	1.7	42.0	60.1	53.8	71.9	14.3	4.2	42.7	1.5	0.8	3.7	1.2	0.7	3.1	3	1	5	91.2	70.1	100.0
8	Region 25	76.3	75.0	77.8	36.1	30.0	43.9	26.7	12.0	55.8	62.0	39.8	70.9	11.4	4.4	17.6	2.0	0.7	3.6	1.5	0.5	2.9	4	0	6	86.6	76.5	95.9
5	Region 26	75.5	74.1	78.6	33.4	29.6	37.4	21.3	3.4	41.9	63.3	53.3	71.1	15.4	4.8	31.1	6.7	2.0	24.3	5.7	0.8	23.1	4	2	8	85.7	82.5	93.4
4	Region 27	77.2	75.9	77.8	35.9	32.1	42.5	19.8	9.2	40.0	66.3	54.2	75.1	13.9	5.8	19.5	2.2	1.0	4.9	1.6	0.8	3.5	13	2	36	87.7	77.6	98.2
11	Region 28	77.0	74.4	78.8	36.0	32.9	41.0	23.7	9.4	36.3	62.7	56.8	72.9	13.6	6.9	28.1	1.9	1.0	3.4	1.3	0.6	2.8	3	1	7	85.0	70.8	98.9
6	Region 29	77.0	73.9	78.6	38.0	34.2	42.5	33.6	26.1	49.2	59.0	48.6	64.7	7.4	2.2	10.5	1.2	0.8	1.8	1.0	0.6	1.4	4	2	8	90.0	86.2	93.7
4	Region 30	77.0	73.6	79.9	35.0	31.6	36.6	17.6	5.6	32.4	67.8	59.9	73.5	14.6	7.7	20.9	1.7	0.8	2.5	1.3	0.7	1.7	7	1	14	90.1	86.6	98.5
9	Region 31	78.4	77.1	80.8	35.9	33.6	39.9	17.1	7.2	25.9	70.6	61.5	77.9	12.3	9.1	18.2	0.8	0.4	1.3	0.8	0.2	1.2	3	0	8	92.6	77.6	103.4
8	Region 32	78.0	76.3	79.4	37.9	32.3	42.2	29.3	11.6	53.9	59.4	42.0	69.7	11.3	4.1	22.7	1.6	1.0	2.6	1.1	0.8	1.6	4	0	8	90.6	84.0	97.8
1	Region 33	77.7	77.7	77.7	36.9	36.9	36.9	33.4	33.4	33.4	57.3	57.3	57.3	9.3	9.3	9.3	1.3	1.3	1.3	0.8	08	0.8	5	5	5	84.3	84.3	84.3
6	Region 34	78.5	77.6	79.5	39.6	36.6	41.3	29.3	7.1	42.7	60.5	48.5	72.9	10.2	5.7	23.1	1.3	0.6	2.0	1.2	0.6	1.7	3	1	5	86.5	81.9	90.9
1	Region 35	79.2	79.2	79.2	26.1	26.1	26.1	8.5	8.5	8.5	56.7	56.7	56.7	34.8	34.8	34.8	1.8	1.8	1.8	1.0	1.0	1.0	7	7	7	104.6	104.6	104.6
1	Region 36	76.3	76.3	76.3	37.3	37.3	37.3	18.9	18.9	18.9	66.9	66.9	66.9	14.2	14.2	14.2	1.3	1.3	1.3	0.9	0.9	0.9	2	2	2	91.5	91.5	91.5
126	**Ave WM 2**	**77.8**			**36.1**			**26.1**			**62.1**			**11.8**			**1.8**			**1.4**			**4**			**90.1**		
	Min WM 2		**73.4**			**26.1**			**1.7**			**39.8**			**2.2**			**0.4**			**0.2**			**0**			**65.4**	
	Max WM 2			**80.9**			**43.9**			**55.8**			**77.9**			**42.7**			**24.3**			**23.1**			**36**			**119.1**

TABLE 12: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE (2009/2010)
(continue)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																												
2	Region 12	77.7	76.5	78.9	37.6	36.8	38.3	38.4	35.3	41.4	56.0	51.2	60.7	5.7	4.0	7.4	1.6	1.1	2.1	1.0	0.3	1.8	2	1	2	83.7	83.6	83.8
1	Region 13	73.4	73.4	73.4	33.9	33.9	33.9	38.2	38.2	38.2	55.5	55.5	55.5	6.3	6.3	6.3	2.0	2.0	2.0	1.3	1.3	1.3	1	1	1	83.6	83.6	83.6
1	Region 17	75.4	75.4	75.4	38.3	38.3	38.3	23.8	23.8	23.8	66.5	66.5	66.5	9.7	9.7	9.7	1.2	1.2	1.2	0.9	0.9	0.9	3	3	3	84.3	84.3	84.3
2	Region 18	77.0	76.5	77.5	30.9	30.5	31.3	10.7	1.9	19.5	62.4	60.5	64.3	26.9	16.2	37.6	1.8	1.6	2.1	1.5	1.3	1.7	2	1	2	78.7	75.5	81.8
1	Region 19	77.5	77.5	77.5	35.0	35.0	35.0	25.6	25.6	25.6	66.8	66.8	66.8	7.6	7.6	7.6	1.7	1.7	1.7	1.4	1.4	1.4	1	1	1	92.1	92.1	92.1
2	Region 20	77.4	76.3	78.4	37.5	37.3	37.6	26.6	26.1	27.0	63.0	59.1	66.8	10.5	7.1	13.9	2.0	1.6	2.3	1.5	1.2	1.7	2	1	2	82.0	79.3	84.6
1	Region 21	77.1	77.1	77.1	33.1	33.1	33.1	15.4	15.4	15.4	62.3	62.3	62.3	22.3	22.3	22.3	1.3	1.3	1.3	1.2	1.2	1.2	8	8	8	90.1	90.1	90.1
4	Region 23	76.6	75.1	78.5	33.6	29.5	38.9	29.2	9.5	36.7	56.7	51.5	59.8	14.2	3.7	39.0	2.4	1.4	3.0	1.9	1.2	2.7	3	1	7	82.6	74.6	90.4
1	Region 24	78.2	78.2	78.2	33.7	33.7	33.7	46.8	46.8	46.8	50.4	50.4	50.4	2.8	2.8	2.8	2.6	2.6	2.6	1.9	1.9	1.9	0	0	0	92.3	92.3	92.3
1	Region 25	74.7	74.7	74.7	40.0	40.0	40.0	42.9	42.9	42.9	50.8	50.8	50.8	6.3	6.3	6.3	3.7	3.7	3.7	2.1	2.1	2.1	2	2	2	90.4	90.4	90.4
2	Region 26	75.3	74.6	76.0	32.3	31.7	32.8	6.9	3.6	10.2	63.8	63.7	63.9	29.3	25.9	32.7	1.8	1.4	2.1	1.6	1.3	1.9	3	3	3	80.8	74.7	86.8
4	Region 28	78.1	76.3	79.6	38.1	35.0	42.5	41.9	28.3	59.2	50.7	36.1	58.4	7.4	4.7	13.3	1.9	1.3	2.4	1.1	0.8	1.5	4	0	9	89.2	84.0	99.0
1	Region 29	78.9	78.9	78.9	39.5	39.5	39.5	46.3	46.3	46.3	50.6	50.6	50.6	3.1	3.1	3.1	2.3	2.3	2.3	1.3	1.3	1.3	10	10	10	99.4	99.4	99.4
1	Region 32	77.2	77.2	77.2	41.3	41.3	41.3	65.9	65.9	65.9	29.9	29.9	29.9	4.2	4.2	4.2	2.6	2.6	2.6	1.7	1.7	1.7	6	6	6	89.5	89.5	89.5
24	**Ave WM 3**	**76.9**			**35.7**			**31.4**			**56.4**			**12.2**			**2.0**			**1.5**			**3**			**85.8**		
	Min WM 3		**73.4**			**29.5**			**1.9**			**29.9**			**2.8**			**1.1**			**0.3**			**0**			**74.6**	
	Max WM 3			**79.6**			**42.5**			**65.9**			**66.8**			**39.0**			**3.7**			**2.7**			**10**			**99.4**
GRADE: COM																												
1	Region 33	76.0	76.0	76.0	40.9	40.9	40.9	47.0	47.0	47.0	49.5	49.5	49.5	3.5	3.5	3.5	2.7	2.7	2.7	2.0	2.0	2.0	4	4	4	90.0	90.0	90.0
1	**Ave COM**	**76.0**			**40.9**			**47.0**			**49.5**			**3.5**			**2.7**			**2.0**			**4**			**90.0**		
	Min COM		**76.0**			**40.9**			**47.0**			**49.5**			**3.5**			**2.7**			**2.0**			**4**			**90.0**	
	Max COM			**76.0**			**40.9**			**47.0**			**49.5**			**3.5**			**2.7**			**2.0**			**4**			**90.0**
458	**Ave white maize**	**77.9**			**36.0**			**26.3**			**62.6**			**11.2**			**1.5**			**1.2**			**4**			**91.4**		
	Min white maize		**60.2**			**24.1**			**1.2**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**65.4**	
	Max white maize			**84.4**			**59.1**			**90.7**			**82.0**			**53.5**			**24.3**			**23.1**			**36**			**119.1**
800	**Ave maize**	**77.4**			**34.7**			**21.1**			**65.1**			**13.7**			**1.8**			**1.4**			**4**			**90.3**		
	Min maize		**60.2**			**23.3**			**0.0**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**52.7**	
	Max maize			**84.4**			**59.1**			**90.7**			**82.0**			**53.3**			**24.3**			**23.1**			**36**			**119.1**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2009/2010)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1																												
27	Region 10	77.5	74.2	79.6	35.5	31.9	40.4	4.8	2.3	7.3	71.6	56.6	78.9	23.5	15.4	36.1	2.1	0.7	9.2	1.7	0.5	8.4	7	1	20	84.2	68.1	96.7
4	Region 11	77.2	75.7	78.9	34.3	30.3	39.1	6.2	1.6	17.4	65.9	55.2	72.6	27.9	11.2	43.2	2.1	1.3	3.3	1.5	1.0	2.2	3	0	6	83.4	75.8	88.4
4	Region 12	77.0	74.8	78.2	31.0	26.1	34.6	8.8	4.1	10.9	70.2	67.8	72.0	21.1	18.3	28.1	1.6	0.9	2.3	1.3	0.9	1.9	3	2	5	87.9	77.3	93.0
4	Region 13	77.5	76.9	78.1	32.7	29.9	34.6	16.7	10.2	22.9	69.0	67.3	73.4	14.4	9.3	16.8	1.7	1.2	2.1	1.2	1.1	1.5	3	2	3	93.8	91.9	95.4
6	Region 14	77.0	74.8	78.7	33.1	31.2	34.3	15.7	12.5	22.8	70.8	65.5	75.1	13.6	11.7	16.2	1.8	1.2	3.5	1.5	1.0	2.8	3	0	4	92.8	86.0	104.3
3	Region 15	77.0	76.7	77.3	34.7	33.6	35.9	7.5	3.6	14.2	72.2	71.4	73.4	20.2	13.9	23.8	2.5	2.3	2.8	2.2	1.8	2.5	8	4	11	88.5	81.5	97.3
3	Region 16	76.2	75.6	77.1	33.6	32.4	35.1	16.2	14.2	19.0	70.4	68.7	72.1	13.3	12.3	15.3	2.0	1.8	2.1	1.5	1.3	1.6	4	3	6	94.6	93.5	95.2
6	Region 17	76.4	75.4	77.2	32.1	30.4	33.5	17.6	12.3	26.0	69.5	66.9	73.5	12.9	6.4	20.8	1.9	1.1	2.6	1.4	0.9	2.1	3	1	7	90.6	83.1	102.5
6	Region 18	76.2	75.0	77.3	32.3	30.3	34.2	17.5	16.0	19.9	68.8	65.7	70.7	13.7	11.1	15.8	2.0	0.6	3.3	1.6	0.5	2.8	5	1	8	91.0	83.6	97.2
2	Region 19	76.7	75.6	77.8	31.6	31.6	31.6	12.9	8.3	17.4	71.2	68.7	73.7	16.0	13.9	18.0	1.4	1.2	1.6	1.3	1.0	1.5	3	2	3	87.1	80.5	93.6
5	Region 20	77.2	76.3	78.7	33.6	31.6	36.0	20.2	13.8	28.5	67.4	63.0	71.1	12.4	8.5	18.0	1.8	1.6	2.0	1.3	1.2	1.4	3	0	8	90.3	85.9	92.5
8	Region 21	76.6	74.6	77.5	32.3	28.7	36.0	13.3	7.8	16.6	69.5	65.7	71.7	17.2	13.4	22.3	2.1	1.1	3.5	1.6	0.6	2.6	3	0	6	93.9	88.7	104.7
2	Region 22	76.7	76.4	76.9	30.6	30.3	30.8	13.0	12.2	13.8	71.6	71.0	72.1	15.5	14.1	16.8	1.3	1.2	1.3	0.9	0.7	1.1	3	2	4	92.5	88.7	96.3
9	Region 23	77.9	75.6	80.6	35.1	32.4	39.3	18.5	7.3	35.6	68.8	56.3	74.2	12.7	4.0	26.0	1.7	0.8	2.8	1.5	0.7	2.4	4	0	8	102.0	82.2	117.3
6	Region 24	76.5	73.9	79.1	31.2	23.3	33.9	14.9	8.6	22.4	69.7	65.1	73.8	15.4	11.8	22.9	2.3	0.6	5.3	1.6	0.6	3.2	9	0	13	91.3	81.3	98.0
23	Region 25	77.3	75.1	79.1	34.4	28.7	37.4	14.6	2.7	31.4	68.6	59.0	73.5	16.8	6.6	28.6	1.7	0.5	2.8	1.3	0.4	2.0	4	0	11	88.2	76.2	97.3
11	Region 26	76.9	76.1	78.0	31.7	26.7	36.5	13.9	9.5	22.2	68.5	62.0	76.4	17.6	12.0	24.4	2.2	0.9	3.9	1.5	0.6	2.3	6	2	12	89.9	83.2	101.5
4	Region 27	76.2	75.5	77.1	36.4	34.8	38.4	23.0	15.1	33.9	67.5	59.3	75.0	9.5	6.8	13.5	3.3	1.6	5.4	2.4	1.1	3.7	8	1	15	94.0	88.3	101.0
35	Region 28	76.1	71.2	78.4	32.3	28.7	36.2	14.1	6.1	23.4	69.5	57.2	77.0	16.5	8.9	28.7	2.4	0.7	5.4	1.8	0.6	3.7	6	1	17	88.2	71.3	100.5
27	Region 29	76.9	70.8	79.3	32.0	25.3	37.8	14.7	3.2	30.8	68.0	61.3	75.4	17.3	5.6	26.5	1.9	0.5	5.2	1.4	0.4	3.7	5	0	20	92.1	78.6	103.2
8	Region 30	76.6	75.7	78.0	33.3	31.0	36.1	14.7	10.0	24.6	69.0	57.6	76.9	16.3	5.8	23.4	1.7	0.9	2.4	1.3	0.6	1.8	5	2	8	91.2	80.4	95.7
7	Region 31	77.9	75.4	81.6	34.7	30.9	39.4	19.9	10.5	38.7	67.2	55.0	73.0	12.8	6.3	20.0	1.6	1.1	2.2	1.2	0.7	1.7	3	1	6	94.0	82.7	105.0
8	Region 32	77.3	76.0	79.4	35.2	32.1	42.5	22.9	10.0	34.9	65.0	59.8	73.3	12.1	5.3	19.2	2.0	1.0	3.3	1.6	1.0	2.4	3	1	5	88.2	80.0	93.8
7	Region 34	77.6	76.3	78.7	35.5	32.3	38.5	23.8	14.7	32.3	65.5	60.0	69.2	10.7	4.9	17.7	1.2	0.4	2.3	1.0	0.3	1.7	3	0	5	93.4	88.3	101.1
5	Region 35	76.2	74.1	78.7	31.8	30.4	35.3	11.9	5.9	15.1	66.5	56.2	74.3	21.6	14.4	28.7	2.5	2.0	3.3	2.0	1.8	2.4	4	1	6	87.9	75.4	96.8
8	Region 36	76.7	75.6	77.9	35.1	31.6	37.9	20.6	11.9	41.7	66.7	50.9	73.7	12.7	7.4	19.2	1.7	0.7	2.9	1.2	0.7	2.0	5	2	11	89.3	80.9	103.4
238	**Ave YM 1**	**76.9**			**33.4**			**14.5**			**68.9**			**16.7**			**2.0**			**1.5**			**5**			**90.0**		
	Min YM 1		**70.8**			**23.3**			**1.6**			**50.9**			**4.0**			**0.4**			**0.3**			**0**			**68.1**	
	Max YM 1			**81.6**			**42.5**			**41.7**			**78.9**			**43.2**			**9.2**			**8.4**			**20**			**117.3**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2009/2010)
(continue)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 2																												
3	Region 12	76.6	75.7	77.2	32.2	30.5	33.3	17.4	11.1	22.7	65.6	62.8	67.2	17.0	14.4	22.1	1.7	1.0	2.2	1.3	0.7	1.7	2	0	4	83.1	79.1	86.6
1	Region 13	76.4	76.4	76.4	31.6	31.6	31.6	13.9	13.9	13.9	70.5	70.5	70.5	15.6	15.6	15.6	2.0	2.0	2.0	1.7	1.7	1.7	3	3	3	90.2	90.2	90.2
4	Region 14	74.7	69.0	76.8	31.8	29.6	34.4	13.1	11.6	14.9	68.1	63.1	70.2	18.8	15.2	25.3	2.4	1.5	3.7	2.0	1.2	3.0	4	1	7	82.1	75.3	91.3
1	Region 15	77.6	77.6	77.6	32.7	32.7	32.7	21.9	21.9	21.9	60.3	60.3	60.3	17.8	17.8	17.8	1.8	1.8	1.8	1.4	1.4	1.4	1	1	1	100.2	100.2	100.2
2	Region 16	74.8	73.7	75.9	33.4	33.2	33.6	18.5	14.9	22.0	70.3	69.7	70.8	11.3	7.2	15.4	2.8	2.1	3.5	2.2	1.6	2.8	5	5	5	85.7	83.2	88.2
2	Region 18	77.2	74.3	80.1	35.0	31.8	38.2	10.4	1.9	18.8	73.8	71.6	75.9	15.9	5.3	26.5	1.7	1.4	1.9	1.4	1.1	1.6	4	2	5	78.2	70.4	86.0
2	Region 19	76.7	76.3	77.1	32.4	32.1	32.6	14.0	12.2	15.7	73.4	71.6	75.1	12.7	9.2	16.2	2.5	2.0	2.9	1.9	1.2	2.5	3	1	4	97.1	94.2	99.9
3	Region 20	76.3	75.8	77.3	31.0	29.6	32.4	10.1	6.7	14.0	68.2	62.9	70.9	21.7	15.2	27.5	1.9	1.7	2.0	1.4	1.2	1.5	2	0	4	83.8	80.6	86.6
1	Region 21	72.3	72.3	72.3	27.1	27.1	27.1	1.2	1.2	1.2	66.1	66.1	66.1	32.7	32.7	32.7	1.7	1.7	1.7	1.5	1.5	1.5	1	1	1	52.7	52.7	52.7
1	Region 22	74.2	74.2	74.2	35.0	35.0	35.0	8.9	8.9	8.9	69.2	69.2	69.2	21.9	21.9	21.9	1.7	1.7	1.7	1.6	1.6	1.6	4	4	4	55.5	55.5	55.2
1	Region 23	75.9	75.9	75.9	32.1	32.1	32.1	14.7	14.7	14.7	68.5	68.5	68.5	16.8	16.8	16.8	3.0	3.0	3.0	2.2	2.2	2.2	9	9	9	92.3	92.3	92.3
1	Region 24	74.4	74.4	74.4	35.3	35.3	35.3	10.7	10.7	10.7	78.7	78.7	78.7	10.6	10.6	10.6	1.9	1.9	1.9	1.7	1.7	1.7	0	0	0	72.5	72.5	72.5
8	Region 25	75.1	70.0	77.9	33.9	30.4	36.6	17.5	3.2	25.4	65.9	54.3	70.5	16.6	7.1	42.5	3.1	1.8	5.1	2.2	1.4	3.2	7	1	11	89.5	80.8	96.5
6	Region 26	75.6	74.9	76.0	28.4	26.1	30.0	7.9	6.2	11.8	65.0	56.2	70.0	27.2	22.8	32.6	2.3	1.6	4.5	1.7	1.0	3.0	5	2	9	80.3	75.8	85.6
6	Region 27	76.6	75.5	77.6	32.3	28.7	34.8	13.5	5.9	18.4	70.0	66.6	73.5	16.5	11.4	24.4	2.5	1.9	3.7	1.9	1.5	2.3	5	0	10	87.4	75.3	97.0
28	Region 28	75.7	72.8	77.8	31.9	26.2	35.8	15.8	0.0	37.5	66.2	52.3	74.9	17.9	6.6	47.7	2.8	1.1	10.3	2.0	0.9	7.1	7	2	27	85.3	70.7	101.7
13	Region 29	75.9	70.8	78.2	31.8	27.1	37.7	10.6	6.3	16.5	68.0	56.1	73.4	21.4	14.0	36.1	2.4	1.4	4.0	1.7	0.9	2.5	6	2	15	88.1	78.6	100.1
4	Region 30	75.8	73.3	77.8	31.0	29.7	32.2	11.5	7.8	16.8	68.3	64.2	73.4	20.3	16.5	28.0	1.8	1.3	2.8	1.3	0.9	2.2	6	1	14	88.3	74.0	98.1
6	Region 31	78.1	76.5	80.5	33.8	32.0	35.0	17.2	10.6	31.0	65.8	58.1	72.6	17.1	9.8	25.4	1.9	1.4	2.8	1.5	0.9	2.4	4	0	8	93.9	85.8	102.3
1	Region 32	77.6	77.6	77.6	34.3	34.3	34.3	18.1	18.1	18.1	69.5	69.5	69.5	12.4	12.4	12.4	2.8	2.8	2.8	2.0	2.0	2.0	8	8	8	93.7	93.7	93.7
3	Region 34	77.9	76.6	78.9	35.1	33.9	35.8	17.3	11.6	20.5	69.2	64.2	76.9	13.5	11.5	16.0	1.3	1.3	1.4	1.0	0.9	1.2	2	0	5	88.3	87.8	89.0
97	**Ave YM 2**	**76.0**			**32.2**			**14.0**			**67.4**			**18.5**			**2.4**			**1.8**			**5**			**86.1**		
	Min YM 2		**69.0**			**26.1**			**0.0**			**52.3**			**5.3**			**1.0**			**0.7**			**0**			**52.7**	
	Max YM 2			**80.5**			**38.2**			**37.5**			**78.7**			**47.7**			**10.3**			**7.1**			**27**			**102.3**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2009/2010)
(continue)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM3																												
1	Region 12	75.8	75.8	75.8	29.6	29.6	29.6	7.6	7.6	7.6	75.8	75.8	75.8	16.6	16.6	16.6	2.4	2.4	2.4	1.5	1.5	1.5	2	2	2	80.3	80.3	80.3
1	Region 13	77.1	77.1	77.1	31.7	31.7	31.7	6.4	6.4	6.4	74.3	74.3	74.3	19.3	19.3	19.3	2.7	2.7	2.7	2.3	2.3	2.3	2	2	2	81.0	81.0	81.0
1	Region 20	75.8	75.8	75.8	38.9	38.9	38.9	21.9	21.9	21.9	72.6	72.6	72.6	5.5	5.5	5.5	3.8	3.8	3.8	2.4	2.4	2.4	2	2	2	90.1	90.1	90.1
1	Region 26	76.5	76.5	76.5	30.2	30.2	30.2	9.6	9.6	9.6	68.1	68.1	68.1	22.3	22.3	22.3	1.8	1.8	1.8	1.1	1.1	1.1	5	5	5	100.6	100.6	100.6
1	Region 28	74.9	74.9	74.9	27.4	27.4	27.4	4.0	4.0	4.0	69.9	69.9	69.9	26.1	26.1	26.1	3.8	3.8	3.8	2.7	2.7	2.7	2	2	2	72.8	72.8	72.8
1	Region 36	73.7	73.7	73.7	31.6	31.6	31.6	6.4	6.4	6.4	64.1	64.1	64.1	29.5	29.5	29.5	1.9	1.9	1.9	1.5	1.5	1.5	1	1	1	67.1	67.1	67.1
6	**Ave YM 3**	**75.6**			**31.6**			**9.3**			**70.8**			**19.9**			**2.7**			**1.9**			**2**			**82.0**		
	Min YM 3		**73.7**			**27.4**			**4.0**			**64.1**			**5.5**			**1.8**			**1.1**			**1**			**67.1**	
	Max YM 3			**77.1**			**38.9**			**21.9**			**75.8**			**29.5**			**3.8**			**2.7**			**5**			**100.6**
GRADE: COM																												
1	Region 30	72.9	72.9	72.9	34.2	34.2	34.2	11.0	11.0	11.0	79.9	79.9	79.9	9.1	9.1	9.1	3.0	3.0	3.0	1.8	1.8	1.8	18	18	18	101.2	101.2	101.2
1	**Ave COM**	**72.9**			**34.2**			**11.0**			**79.9**			**9.1**			**3.0**			**1.8**			**18**			**101.2**		
	Min COM		**72.9**			**34.2**			**11.0**			**79.9**			**9.1**			**3.0**			**1.8**			**18**			**101.2**	
	Max COM			**72.9**			**34.2**			**11.0**			**79.9**			**9.1**			**3.0**			**1.8**			**18**			**101.2**
342	**Ave yellow maize**	**76.6**			**33.0**			**14.3**			**68.5**			**17.2**			**2.1**			**1.6**			**5**			**88.8**		
	Min yellow maize		**69.0**			**23.3**			**0.0**			**50.9**			**4.0**			**0.4**			**0.3**			**0**			**52.7**	
	Max yellow maize			**81.6**			**42.5**			**41.7**			**79.9**			**47.7**			**10.3**			**8.4**			**27**			**117.3**
800	**Ave maize**	**77.4**			**34.7**			**21.1**			**65.1**			**13.7**			**1.8**			**1.4**			**4**			**90.3**		
	Min maize		**60.2**			**23.3**			**0.0**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**52.7**	
	Max maize			**84.4**			**59.1**			**90.7**			**82.0**			**53.5**			**24.3**			**23.1**			**36**			**119.1**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE (2009/2010)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
WHITE																												
2	Region 11	79.1	77.8	80.4	36.5	32.0	41.0	13.6	1.2	26.0	65.9	62.7	69.0	20.6	5.0	36.1	2.3	1.7	2.9	1.7	1.4	2.0	6	5	7	109.0	98.8	119.1
11	Region 12	78.4	74.5	80.2	36.1	30.7	38.9	22.7	7.7	41.4	64.9	51.2	78.3	12.4	4.0	22.7	1.3	0.5	2.1	1.1	0.2	1.8	3	0	7	88.0	80.4	99.2
9	Region 13	78.4	73.4	80.4	34.8	33.1	37.0	30.0	14.5	44.0	61.8	50.9	72.0	8.2	5.1	16.1	1.3	0.7	2.0	1.0	0.4	1.5	3	1	6	91.3	83.6	97.4
18	Region 14	79.2	76.9	81.7	36.2	33.2	39.7	25.2	4.0	36.1	64.3	56.1	70.2	10.6	4.3	28.6	1.2	0.2	2.6	1.0	0.2	1.9	4	1	8	94.3	82.5	108.2
19	Region 15	79.3	77.0	84.4	36.4	34.2	39.7	33.8	24.6	40.3	58.2	50.0	69.3	8.0	5.5	10.9	1.0	0.4	1.8	0.8	0.3	1.3	2	0	5	98.0	92.5	101.9
22	Region 16	79.1	78.0	80.5	36.6	34.1	39.1	31.4	24.8	44.3	60.8	51.4	69.0	7.8	2.9	15.1	1.1	0.6	2.4	0.9	0.3	2.2	3	0	8	94.1	87.0	103.0
14	Region 17	77.7	75.4	79.6	35.4	32.5	39.0	21.7	13.1	31.7	67.2	60.3	72.0	11.1	6.6	19.8	1.4	0.6	2.7	1.1	0.6	1.9	3	1	7	89.9	84.3	94.3
14	Region 18	77.9	76.5	78.8	35.6	30.5	39.3	22.3	1.9	34.2	63.9	57.7	74.5	13.8	7.4	37.6	1.5	0.5	2.5	1.2	0.5	2.0	3	1	6	88.6	75.5	98.7
10	Region 19	78.0	77.3	78.8	35.3	33.5	37.8	20.0	13.0	28.8	66.3	61.7	74.4	13.7	7.6	21.5	1.3	0.6	1.7	1.0	0.3	1.4	3	0	10	90.9	84.7	96.9
10	Region 20	76.2	60.2	78.9	36.4	33.6	41.1	26.6	17.0	31.9	61.9	53.8	67.7	11.4	7.1	19.3	1.6	0.6	2.6	1.2	0.6	1.9	2	0	4	87.2	79.3	94.2
29	Region 21	77.7	74.7	80.0	35.5	29.9	59.1	24.4	12.5	90.7	63.8	9.2	73.8	11.8	0.1	22.3	1.5	0.3	3.1	1.1	0.3	2.4	3	0	11	91.1	78.7	99.4
10	Region 22	78.4	74.9	80.3	35.6	31.5	40.3	32.1	20.4	45.9	58.8	49.7	69.2	9.2	4.4	14.0	1.6	0.8	4.2	1.1	0.3	2.3	3	0	12	92.7	80.8	101.2
34	Region 23	78.5	73.4	80.9	35.7	29.5	41.9	29.0	6.3	53.6	62.0	44.0	82.0	9.0	2.4	39.0	1.5	0.4	4.1	1.1	0.2	3.2	3	0	16	93.1	65.4	103.8
32	Region 24	78.7	73.4	80.9	35.6	31.0	39.4	27.6	1.7	46.8	61.7	50.4	75.8	10.8	2.8	42.7	1.7	0.4	3.7	1.3	0.4	3.1	3	0	14	94.2	70.1	107.1
23	Region 25	76.6	72.6	79.9	36.2	29.6	43.9	28.3	7.8	55.8	60.6	38.7	72.0	11.1	4.4	53.5	1.8	0.6	3.7	1.3	0.4	2.9	5	0	14	86.3	72.7	96.1
19	Region 26	76.7	73.9	80.2	33.3	29.6	37.4	17.5	3.4	41.9	65.7	53.3	75.8	16.9	4.8	32.7	3.1	0.8	24.3	2.6	0.5	23.1	4	0	10	88.3	73.7	112.8
6	Region 27	77.4	75.9	78.6	35.6	32.1	42.5	20.3	9.2	40.0	67.5	54.2	75.1	12.3	5.8	19.5	2.5	1.0	4.9	1.7	0.8	3.5	12	2	36	88.2	77.6	98.2
40	Region 28	77.3	73.2	79.9	36.6	29.6	42.5	28.5	1.3	59.2	60.6	36.1	75.9	10.9	1.6	35.1	2.0	0.3	20.4	1.4	0.3	12.3	4	0	9	87.0	70.8	100.2
33	Region 29	77.7	73.8	80.5	35.6	24.1	42.5	26.0	7.5	49.2	63.1	48.6	79.3	10.9	2.2	27.6	1.3	0.2	4.9	1.0	0.1	3.8	4	0	16	90.7	72.5	107.6
18	Region 30	76.9	71.1	79.9	36.8	29.2	41.5	24.8	5.6	47.1	64.1	49.0	74.7	11.2	3.1	23.3	1.6	0.4	3.2	1.2	0.4	3.1	6	0	21	94.6	79.9	107.2
14	Region 31	78.5	77.1	80.8	36.0	33.6	39.9	17.1	7.2	25.9	71.0	61.5	79.3	11.9	3.9	18.2	0.9	0.4	1.3	0.8	0.2	1.2	3	0	8	93.3	77.6	103.4
26	Region 32	78.4	76.3	80.3	38.3	32.3	43.3	33.0	9.7	65.9	57.5	29.9	72.1	9.5	3.8	22.7	1.5	0.5	2.6	1.1	0.4	2.2	3	0	8	89.8	82.8	97.8
5	Region 33	77.0	75.6	78.2	39.6	36.8	42.0	35.7	23.2	48.7	56.6	47.4	69.0	7.7	3.5	13.8	1.4	0.2	2.7	1.1	0.1	2.0	3	1	5	88.5	84.3	96.0
16	Region 34	78.6	77.6	80.7	38.0	33.9	41.3	28.8	7.1	45.3	61.2	48.4	72.9	10.0	5.7	23.1	1.1	0.3	2.0	0.9	0.1	1.7	2	0	5	89.1	81.9	97.6
8	Region 35	78.2	74.7	80.6	32.4	26.0	40.5	23.5	3.8	54.9	59.2	40.7	65.2	17.4	4.4	38.3	1.6	0.8	2.9	1.2	0.5	2.3	3	1	7	95.8	84.4	105.0
16	Region 36	77.2	74.7	80.0	35.9	29.4	39.1	15.3	1.9	29.6	68.4	53.0	74.5	16.4	8.8	35.3	1.4	0.5	4.3	1.1	0.5	3.0	7	0	28	98.3	90.3	111.0
458	**Ave white**	**77.9**			**36.0**			**26.3**			**62.6**			**11.2**			**1.5**			**1.2**			**4**			**91.4**		
	Min white		**60.2**			**24.1**			**1.2**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**65.4**	
	Max white			**84.4**			**59.1**			**90.7**			**82.0**			**53.5**			**24.3**			**23.1**			**36**			**119.1**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE (2009/2010)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
YELLOW																												
27	Region 10	77.5	74.2	79.6	35.5	31.9	40.4	4.8	2.3	7.3	71.6	56.6	78.9	23.5	15.4	36.1	2.1	0.7	9.2	1.7	0.5	8.4	7	1	20	84.2	68.1	96.7
4	Region 11	77.2	75.7	78.9	34.3	30.3	39.1	6.2	1.6	17.4	65.9	55.2	72.6	27.9	11.2	43.2	2.1	1.3	3.3	1.5	1.0	2.2	3	0	6	83.4	75.8	88.4
8	Region 12	76.7	74.8	78.2	31.3	26.1	34.6	11.9	4.1	22.7	69.2	62.8	75.8	19.0	14.4	28.1	1.8	0.9	2.4	1.3	0.7	1.9	3	0	5	85.1	77.3	93.0
6	Region 13	77.2	76.4	78.1	32.3	29.9	34.6	14.5	6.4	22.9	70.1	67.3	74.3	15.4	9.3	19.3	1.9	1.2	2.7	1.5	1.1	2.3	3	2	3	91.1	81.0	95.4
10	Region 14	76.1	69.0	78.7	32.5	29.6	34.4	14.7	11.6	22.8	69.7	63.1	75.1	15.6	11.7	25.3	2.1	1.2	3.7	1.7	1.0	3.0	3	0	7	88.6	75.3	104.3
4	Region 15	77.2	76.7	77.6	34.2	32.7	35.9	11.1	3.6	21.9	69.3	60.3	73.4	19.6	13.9	23.8	2.4	1.8	2.8	2.0	1.4	2.5	7	1	11	91.5	81.5	100.2
5	Region 16	75.6	73.7	77.1	33.5	32.4	35.1	17.1	14.2	22.0	70.4	68.7	72.1	12.5	7.2	15.4	2.3	1.8	3.5	1.8	1.3	2.8	4	3	6	91.0	83.2	95.2
6	Region 17	76.4	75.4	77.2	32.1	30.4	33.5	17.6	12.3	26.0	69.5	66.9	73.5	12.9	6.4	20.8	1.9	1.1	2.6	1.4	0.9	2.1	3	1	7	90.6	83.1	102.5
8	Region 18	76.5	74.3	80.1	33.0	30.3	38.2	15.7	1.9	19.9	70.0	65.7	75.9	14.3	5.3	26.5	1.9	0.6	3.3	1.5	0.5	2.8	4	1	8	87.8	70.4	97.2
4	Region 19	76.7	75.6	77.8	32.0	31.6	32.6	13.4	8.3	17.4	72.3	68.7	75.1	14.3	9.2	18.0	1.9	1.2	2.9	1.6	1.0	2.5	3	1	4	92.1	80.5	99.9
9	Region 20	76.8	75.8	78.7	33.3	29.6	38.9	17.0	6.7	28.5	68.3	62.9	72.6	14.7	5.5	27.5	2.0	1.6	3.8	1.4	1.2	2.4	3	0	8	88.1	80.6	92.5
9	Region 21	76.1	72.3	77.5	31.8	27.1	36.0	12.0	1.2	16.6	69.1	65.7	71.7	18.9	13.4	32.7	2.0	1.1	3.5	1.6	0.6	2.6	2	0	6	89.3	52.7	104.7
3	Region 22	75.8	74.2	76.9	32.0	30.3	35.0	11.6	8.9	13.8	70.8	69.2	72.1	17.6	14.1	21.9	1.4	1.2	1.7	1.1	0.7	1.6	3	2	4	80.2	55.5	96.3
10	Region 23	77.7	75.6	80.6	34.8	32.1	39.3	18.1	7.3	35.6	68.8	56.3	74.2	13.1	4.0	26.0	1.8	0.8	3.0	1.5	0.7	2.4	4	0	9	101.0	82.2	117.3
7	Region 24	76.2	73.9	79.1	31.8	23.3	35.3	14.3	8.6	22.4	71.0	65.1	78.7	14.7	10.6	22.9	2.2	0.6	5.3	1.6	0.6	3.2	7	0	13	88.6	72.5	98.0
31	Region 25	76.8	70.0	79.1	34.3	28.7	37.4	15.3	2.7	31.4	67.9	54.3	73.5	16.7	6.6	42.5	2.1	0.5	5.1	1.5	0.4	3.2	5	0	11	88.5	76.2	97.3
18	Region 26	76.5	74.9	78.0	30.5	26.1	36.5	11.7	6.2	22.2	67.3	56.2	76.4	21.0	12.0	32.6	2.2	0.9	4.5	1.6	0.6	3.0	6	2	12	87.3	75.8	101.5
10	Region 27	76.4	75.5	77.6	34.0	28.7	38.4	17.3	5.9	33.9	69.0	59.3	75.0	13.7	6.8	24.4	2.8	1.6	5.4	2.1	1.1	3.7	7	0	15	90.0	75.3	101.0
64	Region 28	75.9	71.2	78.4	32.1	26.2	36.2	14.7	0.0	37.5	68.1	52.3	77.0	17.2	6.6	47.7	2.6	0.7	10.3	1.9	0.6	7.1	7	1	27	86.7	70.7	101.7
40	Region 29	76.6	70.8	79.3	31.9	25.3	37.8	13.4	3.2	30.8	68.0	56.1	75.4	18.7	5.6	36.1	2.0	0.5	5.2	1.5	0.4	3.7	5	0	20	90.8	78.6	103.2
13	Region 30	76.1	72.9	78.0	32.6	29.7	36.1	13.4	7.8	24.6	69.6	57.6	79.9	17.0	5.8	28.0	1.8	0.9	3.0	1.3	0.6	2.2	6	1	18	91.1	74.0	101.2
13	Region 31	78.0	75.4	81.6	34.3	30.9	39.4	18.7	10.5	38.7	66.6	55.0	73.0	14.8	6.3	25.4	1.7	1.1	2.8	1.3	0.7	2.4	4	0	8	93.9	82.7	105.0
9	Region 32	77.3	76.0	79.4	35.1	32.1	42.5	22.4	10.0	34.9	65.5	59.8	73.3	12.1	5.3	19.2	2.1	1.0	3.3	1.7	1.0	2.4	4	1	8	88.8	80.0	93.8
10	Region 34	77.7	76.3	78.9	35.4	32.3	38.5	21.9	11.6	32.3	66.6	60.0	76.9	11.5	4.9	17.7	1.3	0.4	2.3	1.0	0.3	1.7	3	0	5	91.9	87.8	101.1
5	Region 35	76.2	74.1	78.7	31.8	30.4	35.3	11.9	5.9	15.1	66.5	56.2	74.3	21.6	14.4	28.7	2.5	2.0	3.3	2.0	1.8	2.4	4	1	6	87.9	75.4	96.8
9	Region 36	76.3	73.7	77.9	34.7	31.6	37.9	19.0	6.4	41.7	66.4	50.9	73.7	14.6	7.4	29.5	1.7	0.7	2.9	1.2	0.7	2.0	5	1	11	86.8	67.1	103.4
342	**Ave yellow**	**76.6**			**33.0**			**14.3**			**68.5**			**17.2**			**2.1**			**1.6**			**5**			**88.8**		
	Min yellow		**69.0**			**23.3**			**0.0**			**50.9**			**4.0**			**0.4**			**0.3**			**0**			**52.7**	
	Max yellow			**81.6**			**42.5**			**41.7**			**79.9**			**47.7**			**10.3**			**8.4**			**27**			**117.3**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE FOR (2009/2010)

Number of samples	Region	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)			Milling index		
								Above 10 mm sieve			Above 8 mm sieve			Below 8 mm sieve			< 6.35 mm sieve			< 4.75 mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
WHITE AND YELLOW																												
27	Region 10	77.5	74.2	79.6	35.5	31.9	40.4	4.8	2.3	7.3	71.6	56.6	78.9	23.5	15.4	36.1	2.1	0.7	9.2	1.7	0.5	8.4	7	1	20	84.2	68.1	96.7
6	Region 11	77.8	75.7	80.4	35.0	30.3	41.0	8.7	1.2	26.0	65.9	55.2	72.6	25.5	5.0	43.2	2.2	1.3	3.3	1.6	1.0	2.2	4	0	7	91.9	75.8	119.1
19	Region 12	77.7	74.5	80.2	34.0	26.1	38.9	18.1	4.1	41.4	66.7	51.2	78.3	15.2	4.0	28.1	1.5	0.5	2.4	1.2	0.2	1.9	3	0	7	86.8	77.3	99.2
15	Region 13	77.9	73.4	80.4	33.8	29.9	37.0	23.8	6.4	44.0	65.1	50.9	74.3	11.1	5.1	19.3	1.5	0.7	2.7	1.2	0.4	2.3	3	1	6	91.2	81.0	97.4
28	Region 14	78.1	69.0	81.7	34.9	29.6	39.7	21.4	4.0	36.1	66.2	56.1	75.1	12.4	4.3	28.6	1.5	0.2	3.7	1.3	0.2	3.0	4	0	8	92.3	75.3	108.2
23	Region 15	78.9	76.7	84.4	36.0	32.7	39.7	29.8	3.6	40.3	60.1	50.0	73.4	10.0	5.5	23.8	1.2	0.4	2.8	1.0	0.3	2.5	3	0	11	96.8	81.5	101.9
27	Region 16	78.4	73.7	80.5	36.0	32.4	39.1	28.7	14.2	44.3	62.6	51.4	72.1	8.7	2.9	15.4	1.4	0.6	3.5	1.1	0.3	2.8	3	0	8	93.5	83.2	103.0
20	Region 17	77.3	75.4	79.6	34.4	30.4	39.0	20.5	12.3	31.7	67.9	60.3	73.5	11.6	6.4	20.8	1.6	0.6	2.7	1.2	0.6	2.1	3	1	7	90.1	83.1	102.5
22	Region 18	77.3	74.3	80.1	34.6	30.3	39.3	19.9	1.9	34.2	66.1	57.7	75.9	14.0	5.3	37.6	1.7	0.5	3.3	1.3	0.5	2.8	3	1	8	88.3	70.4	98.7
14	Region 19	77.6	75.6	78.8	34.3	31.6	37.8	18.1	8.3	28.8	68.0	61.7	75.1	13.9	7.6	21.5	1.5	0.6	2.9	1.1	0.3	2.5	3	0	10	91.2	80.5	99.9
19	Region 20	76.4	60.2	78.9	35.0	29.6	41.1	22.1	6.7	31.9	64.9	53.8	72.6	13.0	5.5	27.5	1.8	0.6	3.8	1.3	0.6	2.4	2	0	8	87.7	79.3	94.2
38	Region 21	77.4	72.3	80.0	34.6	27.1	59.1	21.5	1.2	90.7	65.0	9.2	73.8	13.5	0.1	32.7	1.6	0.3	3.5	1.2	0.3	2.6	3	0	11	90.7	52.7	104.7
13	Region 22	77.8	74.2	80.3	34.8	30.3	40.3	27.3	8.9	45.9	61.6	49.7	72.1	11.1	4.4	21.9	1.6	0.8	4.2	1.1	0.3	2.3	3	0	12	89.8	55.5	101.2
44	Region 23	78.3	73.4	80.9	35.5	29.5	41.9	26.5	6.3	53.6	63.6	44.0	82.0	9.9	2.4	39.0	1.6	0.4	4.1	1.2	0.2	3.2	3	0	16	94.9	65.4	117.3
39	Region 24	78.2	73.4	80.9	34.9	23.3	39.4	25.2	1.7	46.8	63.3	50.4	78.7	11.5	2.8	42.7	1.8	0.4	5.3	1.3	0.4	3.2	4	0	14	93.2	70.1	107.1
54	Region 25	76.7	70.0	79.9	35.1	28.7	43.9	20.8	2.7	55.8	64.8	38.7	73.5	14.3	4.4	53.5	2.0	0.5	5.1	1.4	0.4	3.2	5	0	14	87.6	72.7	97.3
37	Region 26	76.6	73.9	80.2	31.9	26.1	37.4	14.6	3.4	41.9	66.5	53.3	76.4	18.9	4.8	32.7	2.6	0.8	24.3	2.1	0.5	23.1	5	0	12	87.8	73.7	112.8
16	Region 27	76.8	75.5	78.6	34.6	28.7	42.5	18.4	5.9	40.0	68.4	54.2	75.1	13.2	5.8	24.4	2.7	1.0	5.4	1.9	0.8	3.7	9	0	36	89.4	75.3	101.0
104	Region 28	76.5	71.2	79.9	33.8	26.2	42.5	20.0	0.0	59.2	65.2	36.1	77.0	14.8	1.6	47.7	2.4	0.3	20.4	1.7	0.3	12.3	5	0	27	86.8	70.7	101.7
73	Region 29	77.1	70.8	80.5	33.6	24.1	42.5	19.1	3.2	49.2	65.8	48.6	79.3	15.1	2.2	36.1	1.7	0.2	5.2	1.3	0.1	3.8	5	0	20	90.8	72.5	107.6
31	Region 30	76.6	71.1	79.9	35.1	29.2	41.5	20.0	5.6	47.1	66.4	49.0	79.9	13.6	3.1	28.0	1.7	0.4	3.2	1.2	0.4	3.1	6	0	21	93.1	74.0	107.2
27	Region 31	78.2	75.4	81.6	35.2	30.9	39.9	17.9	7.2	38.7	68.8	55.0	79.3	13.3	3.9	25.4	1.3	0.4	2.8	1.1	0.2	2.4	3	0	8	93.6	77.6	105.0
35	Region 32	78.1	76.0	80.3	37.5	32.1	43.3	30.3	9.7	65.9	59.6	29.9	73.3	10.2	3.8	22.7	1.6	0.5	3.3	1.2	0.4	2.4	3	0	8	89.6	80.0	97.8
5	Region 33	77.0	75.6	78.2	39.6	36.8	42.0	35.7	23.2	48.7	56.6	47.4	69.0	7.7	3.5	13.8	1.4	0.2	2.7	1.1	0.1	2.0	3	1	5	88.5	84.3	96.0
26	Region 34	78.2	76.3	80.7	37.0	32.3	41.3	26.1	7.1	45.3	63.3	48.4	76.9	10.6	4.9	23.1	1.1	0.3	2.3	1.0	0.1	1.7	2	0	5	90.2	81.9	101.1
13	Region 35	77.4	74.1	80.6	32.2	26.0	40.5	19.0	3.8	54.9	62.0	40.7	74.3	19.0	4.4	38.3	2.0	0.8	3.3	1.5	0.5	2.4	3	1	7	92.8	75.4	105.0
25	Region 36	76.9	73.7	80.0	35.5	29.4	39.1	16.6	1.9	41.7	67.7	50.9	74.5	15.7	7.4	35.3	1.5	0.5	4.3	1.1	0.5	3.0	6	0	28	94.2	67.1	111.0
800	**Ave w & y**	**77.4**			**34.7**			**21.1**			**65.1**			**13.7**			**1.8**			**1.4**			**4**			**90.3**		
Min white & yellow			**60.2**			**23.3**			**0.0**			**9.2**			**0.1**			**0.2**			**0.1**			**0**			**52.7**	
Max white & yellow				**84.4**			**59.1**			**90.7**			**82.0**			**53.5**			**24.3**			**23.1**			**36**			**119.1**

TABLE 15: PHYSICAL QUALITY FACTORS OF WHITE AND YELLOW MAIZE 2000/01 - 2009/10

Season	Number of samples	Hectolitre mass (kg/hl)			100 kernel mass (g)			Kernel size (%)									Breakage susceptibility (%)						Stress cracks (%)		
								Above 10mm sieve			Above 8mm sieve			Below 8mm sieve			< 6.35mm sieve			<4.75mm sieve					
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
White Maize																									
2000/01	522	78.2	69.6	82.5	34.4	26.5	42.5	21.5	0.8	73.1	62.3	24.2	74.9	16.2	2.7	71.1	1.6	0.0	23.0	1.3	0.0	22.5	6	0	45
2001/02	471	77.3	68.1	81.1	31.8	17.5	44.4	21.1	1.7	59.5	62.7	32.9	77.1	16.2	0.0	45.6	1.8	0.2	11.0	1.3	0.1	6.7	6	0	60
2002/03	517	78.1	65.3	83.2	33.0	22.5	44.4	20.4	0.3	69.4	62.9	29.4	75.4	16.7	1.0	65.6	1.4	0.0	21.4	1.0	0.0	21.0	5	0	34
2003/04	599	78.1	63.8	83.2	36.2	23.7	58.8	29.9	0.4	65.5	59.2	31.0	78.0	11.0	1.0	64.9	1.4	0.0	15.0	1.0	0.0	9.5	6	0	58
2004/05	601	77.9	68.9	83.2	35.3	26.3	44.3	29.7	0.8	59.7	60.1	31.3	80.3	10.2	0.1	54.5	1.4	0.1	8.0	1.1	0.0	6.2	5	0	23
2005/06	593	76.2	58.3	81.6	33.7	18.0	44.7	30.1	0.0	73.9	59.4	24.2	75.0	10.5	1.2	75.8	2.1	0.2	12.6	1.6	0.1	10.4	4	0	36
2006/07	563	78.1	68.1	82.8	29.8	19.4	40.1	17.1	0.2	51.7	63.3	16.7	78.2	19.6	0.8	81.6	1.5	0.0	12.1	1.0	0.0	11.5	3	0	27
2007/08	483	78.2	65.3	81.6	34.5	17.0	45.6	24.5	0.4	69.7	63.8	23.3	84.2	11.7	1.0	76.2	1.2	0.1	9.7	0.9	0.0	7.3	4	0	44
2008/09	483	77.6	61.6	82.8	35.1	27.1	44.0	26.2	0.5	46.4	63.3	43.1	84.0	10.5	2.1	51.0	1.5	0.2	11.7	1.1	0.1	8.7	5	0	50
2009/10	458	77.9	60.2	84.4	36.0	24.1	59.1	26.3	1.2	90.7	62.6	9.2	82.0	11.2	0.1	53.5	1.5	0.2	24.3	1.2	0.1	23.1	4	0	36
Weighted Average		**77.7**			**34.0**			**24.9**			**61.8**			**13.3**			**1.5**			**1.2**			**5**		
Minimum			**58.3**			**17.0**			**0.0**			**9.2**			**0.0**			**0.0**			**0.0**			**0**	
Maximum				**84.4**			**59.1**			**90.7**			**84.2**			**81.6**			**24.3**			**23.1**			**60**
Yellow Maize																									
2000/01	378	77.8	66.8	81.0	32.1	21.5	38.4	14.7	0.0	49.1	63.2	15.8	76.4	22.1	4.4	83.8	1.9	0.0	71.7	1.5	0.0	71.4	6	0	56
2001/02	429	76.7	63.3	80.6	29.7	21.7	37.8	13.9	0.0	40.6	63.8	7.8	77.6	22.3	6.2	92.1	2.2	0.2	12.6	1.5	0.1	8.3	7	0	57
2002/03	383	77.2	68.6	81.9	30.8	19.9	46.0	13.5	0.0	72.7	63.6	16.9	77.7	22.9	1.3	77.2	1.6	0.0	5.5	1.2	0.0	4.4	5	0	38
2003/04	301	77.0	68.0	80.1	34.0	25.5	62.9	20.2	0.9	59.8	65.4	35.8	79.4	14.4	0.8	53.9	1.7	0.2	22.0	1.2	0.1	21.5	8	0	60
2004/05	399	76.8	68.4	81.0	33.0	21.5	44.4	19.8	1.0	46.9	64.3	32.9	82.3	15.9	1.4	66.1	1.7	0.2	24.4	1.2	0.0	12.9	5	0	21
2005/06	307	75.4	53.4	81.9	31.5	22.0	40.1	19.0	1.1	53.1	65.4	43.3	80.1	15.7	3.2	50.8	2.5	0.1	17.6	1.7	0.0	11.7	5	0	24
2006/07	337	76.4	70.2	81.2	27.4	16.6	38.6	8.5	0.0	34.2	61.7	17.1	79.5	29.8	6.4	82.9	2.1	0.2	10.9	1.3	0.0	6.0	4	0	24
2007/08	417	76.7	69.3	79.9	32.4	24.4	42.9	15.2	0.3	50.9	66.0	39.6	78.6	18.8	2.8	60.1	1.9	0.3	15.2	1.3	0.1	8.3	5	0	58
2008/09	327	76.6	69.9	81.2	32.9	24.2	45.4	15.7	1.3	52.8	66.5	44.3	79.9	17.8	1.6	44.6	1.8	0.1	10.3	1.3	0.0	9.9	6	0	32
2009/10	342	76.6	69.0	81.6	33.0	23.3	42.5	14.3	0.0	41.7	68.5	50.9	79.9	17.2	4.0	47.7	2.1	0.4	10.3	1.6	0.3	8.4	5	0	27
Weighted Average		**76.7**			**31.6**			**15.4**			**64.8**			**19.8**			**1.9**			**1.4**			**6**		
Minimum			**53.4**			**16.6**			**0.0**			**7.8**			**0.8**			**0.0**			**0.0**			**0**	
Maximum				**81.9**			**62.9**			**72.7**			**82.3**			**92.1**			**71.7**			**71.4**			**60**
White and Yellow Maize																									
2000/01	900	78.0	66.8	82.5	33.4	21.5	42.5	18.7	0.0	73.1	62.7	15.8	76.4	18.7	2.7	83.8	1.7	0.0	71.7	1.4	0.0	71.4	6	0	56
2001/02	900	77.0	63.3	81.1	30.8	17.5	44.4	17.7	0.0	59.5	63.2	7.8	77.6	19.1	0.0	92.1	2.0	0.2	12.6	1.4	0.1	8.3	7	0	60
2002/03	900	77.7	65.3	83.2	32.1	19.9	46.0	17.5	0.0	72.7	63.2	16.9	77.7	19.3	1.0	77.2	1.5	0.0	21.4	1.1	0.0	21.0	5	0	38
2003/04	900	77.8	63.8	83.2	35.5	23.7	62.9	26.6	0.4	65.5	61.3	31.0	79.4	12.1	0.8	64.9	1.5	0.0	22.0	1.1	0.0	21.5	7	0	60
2004/05	1000	77.5	68.4	83.2	34.4	21.5	44.4	25.7	0.8	59.7	61.8	31.8	82.3	12.5	0.1	66.1	1.5	0.1	24.4	1.1	0.0	12.9	5	0	23
2005/06	900	75.9	53.4	81.9	32.9	18.0	44.7	26.3	0.0	73.9	61.4	24.2	80.1	12.3	1.2	75.8	2.3	0.1	17.6	1.6	0.0	11.7	4	0	36
2006/07	900	77.5	68.1	82.8	28.9	16.6	40.1	13.9	0.0	51.7	62.7	16.7	79.5	23.4	0.8	82.9	1.7	0.0	12.1	1.1	0.0	11.5	3	0	27
2007/08	900	77.5	65.3	81.6	33.5	17.0	45.6	20.2	0.3	69.7	64.8	23.3	84.2	15.0	1.0	76.2	1.5	0.1	15.2	1.1	0.0	8.3	4	0	58
2008/09	810	77.2	61.6	82.8	34.2	24.2	45.4	21.9	0.5	52.8	64.6	43.1	84.0	13.4	1.6	51.0	1.6	0.1	11.7	1.2	0.0	9.9	5	0	50
2009/10	800	77.4	60.2	84.4	34.7	23.3	59.1	21.1	0.0	90.7	65.1	9.2	82.0	13.7	0.1	53.5	1.8	0.2	24.3	1.4	0.1	23.1	4	0	36
Weighted Average		**77.4**			**33.0**			**21.0**			**63.0**			**16.0**			**1.7**			**1.2**			**5**		
Minimum			**53.4**			**16.6**			**0.0**			**7.8**			**0.0**			**0.0**			**0.0**			**0**	
Maximum				**84.4**			**62.9**			**90.7**			**84.2**			**92.1**			**71.7**			**71.4**			**60**

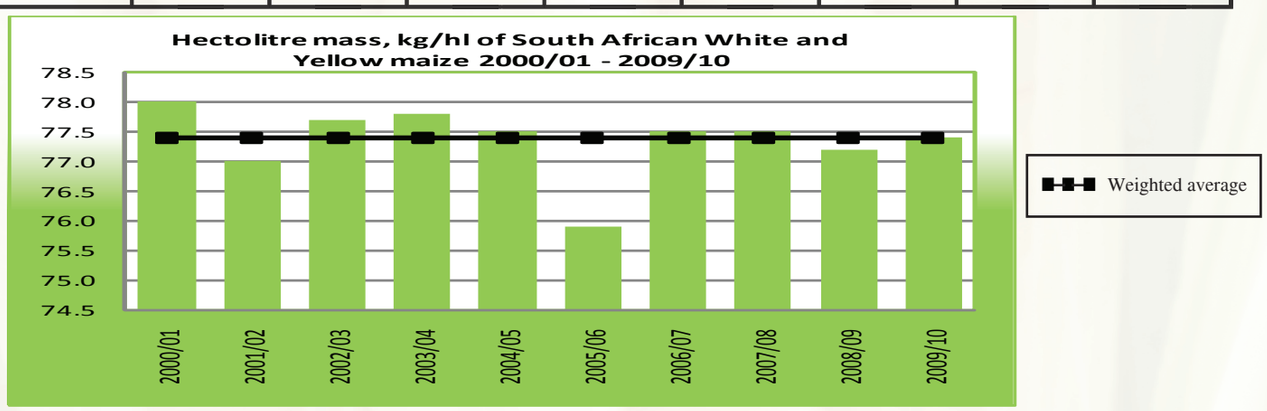


TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2009/2010)

Number of samples	Region	Roff Milling																		Whiteness index					
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, % (Total meal)			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1																									
1	Region 11	13.6	13.6	13.6	9.9	9.9	9.9	27.4	27.4	27.4	26.3	26.3	26.3	22.9	22.9	22.9	77.1	77.1	77.1	24.4	24.4	24.4	12.8	12.8	12.8
8	Region 12	13.2	11.5	14.2	9.5	8.7	10.1	28.3	26.4	29.3	26.4	24.3	29.7	22.7	18.8	25.6	77.3	74.4	81.2	28.5	25.9	30.2	25.4	20.6	27.9
6	Region 13	12.9	11.6	14.0	9.7	9.2	10.1	29.6	28.5	30.8	26.2	25.2	28.4	21.6	20.1	23.4	78.4	76.6	79.9	24.5	11.1	28.7	17.7	-4.4	26.0
11	Region 14	12.7	11.9	13.5	9.6	9.1	10.3	28.5	23.7	30.0	27.8	26.2	29.4	21.4	18.5	25.3	78.6	74.7	81.5	27.1	25.3	30.9	23.2	19.0	27.5
13	Region 15	12.6	11.9	13.6	9.8	9.1	10.3	27.0	21.6	30.0	28.6	26.7	31.3	22.0	19.2	26.1	78.0	73.9	80.8	29.0	24.4	33.1	23.6	18.0	27.7
18	Region 16	12.8	10.8	13.9	9.8	9.0	10.2	27.9	24.2	30.1	27.7	25.7	30.5	21.8	19.1	23.8	78.2	76.2	80.9	28.9	25.2	31.7	26.1	19.3	32.2
10	Region 17	13.3	12.2	15.1	9.8	8.9	10.9	28.6	26.9	31.0	26.1	25.0	27.4	22.3	20.2	26.6	77.7	73.4	79.8	27.5	22.8	31.0	21.5	16.8	26.6
8	Region 18	13.4	12.9	14.0	9.6	9.1	10.2	28.4	26.6	29.4	26.6	25.2	27.5	22.0	20.5	24.0	78.0	76.0	79.5	28.5	25.6	32.1	23.9	19.2	30.9
5	Region 19	13.3	12.2	14.4	10.2	9.2	11.3	29.1	28.2	31.0	25.3	24.0	27.2	22.1	20.9	23.2	77.9	76.8	79.1	29.8	25.8	34.3	25.5	23.0	30.3
5	Region 20	13.6	12.7	14.9	10.1	9.6	10.8	29.4	28.9	29.9	25.7	24.3	26.3	21.2	20.2	22.0	78.8	78.0	79.8	27.0	25.9	28.6	23.2	20.6	24.7
25	Region 21	13.5	11.1	15.7	9.8	8.9	10.7	28.2	25.5	30.3	26.9	23.4	30.9	21.7	17.4	26.0	78.3	74.0	82.6	26.6	23.1	32.1	20.8	12.9	30.6
6	Region 22	13.2	12.4	14.0	9.8	9.2	10.3	29.9	28.5	31.5	26.9	25.4	28.3	20.2	19.2	21.0	79.8	79.0	80.8	28.3	24.3	31.2	22.3	16.2	29.6
21	Region 23	12.8	11.0	14.7	9.6	7.4	12.4	29.1	26.8	31.9	27.6	24.7	29.9	20.9	18.3	23.6	79.1	76.4	81.7	28.3	23.3	34.1	24.7	15.5	32.7
20	Region 24	12.8	11.3	14.0	9.8	8.8	11.0	29.2	26.7	31.5	26.9	24.8	29.5	21.3	19.5	24.7	78.7	75.3	80.5	26.4	24.0	29.1	20.4	15.7	28.6
14	Region 25	15.1	12.6	19.1	10.6	9.5	16.4	26.8	21.0	30.1	24.6	20.0	26.6	22.9	20.1	27.8	77.1	72.2	79.9	28.4	24.2	34.5	23.0	14.4	27.7
12	Region 26	14.3	10.4	17.4	9.8	8.7	10.8	26.0	23.6	28.9	25.8	21.9	30.2	24.1	21.5	26.1	75.9	73.9	78.5	29.1	26.1	34.5	22.7	17.5	31.1
2	Region 27	14.4	13.6	15.1	10.5	10.5	10.5	26.9	25.3	28.4	25.9	24.9	27.0	22.3	22.1	22.5	77.7	77.5	77.9	28.7	28.3	29.0	20.3	20.1	20.4
25	Region 28	14.7	11.7	16.2	10.6	9.3	16.7	26.1	22.6	29.5	26.4	22.4	29.8	22.2	18.9	25.5	77.8	74.5	81.1	29.5	25.4	33.6	22.4	13.6	27.8
26	Region 29	14.3	10.3	16.9	9.8	8.6	10.5	26.1	22.8	28.7	25.9	22.1	30.5	23.9	21.1	28.7	76.1	71.3	78.9	30.4	23.0	37.0	25.4	18.6	31.5
14	Region 30	13.4	12.5	17.2	10.3	9.1	14.2	26.9	24.1	29.4	26.9	23.8	29.1	22.5	20.6	26.1	77.5	73.9	79.4	28.7	23.7	32.5	20.2	15.3	23.4
5	Region 31	12.6	10.9	13.8	9.5	8.8	10.1	28.4	27.3	29.6	27.1	25.8	28.9	22.4	20.5	25.1	77.6	74.9	79.5	25.6	20.6	28.2	21.1	15.0	26.9
17	Region 32	13.2	11.7	15.2	10.0	9.0	11.9	27.7	24.5	30.1	26.2	24.5	27.7	22.9	20.8	26.4	77.1	73.6	79.2	29.5	24.6	38.5	23.7	17.6	30.2
3	Region 33	13.5	12.8	14.3	9.8	9.7	10.1	30.1	29.3	31.3	25.9	24.7	26.9	20.7	19.9	21.9	79.3	78.1	80.1	26.8	24.4	28.3	18.9	15.0	21.4
10	Region 34	13.8	12.9	14.8	9.8	9.0	10.2	28.5	26.6	30.1	26.1	25.3	27.2	21.8	20.3	23.9	78.2	76.1	79.7	29.0	26.2	32.6	23.3	18.3	28.2
7	Region 35	13.1	12.7	14.4	10.2	9.5	10.7	25.7	21.5	28.1	28.6	26.6	29.7	22.4	19.1	26.9	77.6	73.1	80.9	33.1	29.6	36.7	23.5	18.5	27.5
15	Region 36	11.8	10.6	13.4	9.0	8.5	9.7	27.9	25.0	29.6	28.3	26.2	30.4	23.0	19.9	27.1	77.0	72.9	80.1	26.8	20.7	30.6	25.4	20.8	28.8
307	**Ave WM 1**	**13.4**			**9.9**			**27.8**			**26.8**			**22.2**			**77.8**			**28.4**			**23.0**		
	Min WM 1		**10.3**			**7.4**			**21.0**			**20.0**			**17.4**			**71.3**			**11.1**			**-4.4**	
	Max WM 1			**19.1**			**16.7**			**31.9**			**31.3**			**28.7**			**82.6**			**38.5**			**32.7**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2009/2010) (continue)

Number of samples	Region	Roff Milling																	Whiteness index					
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, % (Total meal)			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2																									
1	Region 11	10.1	10.1	10.1	10.5	10.5	10.5	27.0	27.0	27.0	33.9	33.9	33.9	18.5	18.5	18.5	81.5	81.5	81.5	22.3	22.3	22.3	15.6	15.6	15.6
1	Region 12	12.9	12.9	12.9	9.7	9.7	9.7	29.4	29.4	29.4	26.8	26.8	26.8	21.1	21.1	21.1	78.9	78.9	78.9	28.7	28.7	28.7	21.3	21.3	21.3
2	Region 13	14.1	13.4	14.8	9.8	9.8	9.9	29.8	29.8	29.8	24.6	24.5	24.8	21.6	21.1	22.1	78.4	77.9	78.9	28.7	28.5	28.8	24.2	21.6	26.8
7	Region 14	12.6	11.0	13.6	9.7	8.9	10.4	28.5	24.9	29.9	26.9	24.6	29.3	22.3	20.3	24.2	77.7	75.8	79.7	28.8	22.6	31.7	26.8	15.9	35.4
6	Region 15	12.5	11.9	13.6	9.9	9.3	10.5	29.2	27.0	36.2	26.9	14.8	31.0	21.5	17.6	27.2	78.5	72.8	82.4	29.2	26.1	32.9	22.0	18.7	24.8
4	Region 16	12.8	12.3	13.3	9.7	9.7	9.9	28.2	26.3	30.7	28.2	26.7	29.4	21.2	18.3	23.5	78.8	76.5	81.7	27.6	26.4	29.0	24.3	23.5	25.9
3	Region 17	13.4	13.2	13.7	9.8	9.6	10.2	29.1	28.3	29.7	26.6	25.0	27.4	21.1	20.0	21.9	78.9	78.1	80.0	28.6	24.9	30.6	24.7	20.4	28.7
4	Region 18	13.8	13.3	14.7	9.8	9.6	10.0	29.6	28.7	30.3	26.1	23.8	27.6	20.6	19.0	21.3	79.4	78.7	81.0	25.5	23.8	28.9	21.9	14.9	26.8
4	Region 19	13.3	13.0	13.6	9.5	9.1	9.8	29.2	28.4	30.2	26.0	25.3	26.7	21.9	20.7	23.3	78.1	76.7	79.3	27.1	24.2	30.1	23.6	20.5	25.6
3	Region 20	13.9	13.4	14.2	9.7	9.4	9.8	28.9	28.4	29.6	24.8	23.7	25.5	22.7	22.4	22.9	77.3	77.1	77.6	25.8	21.6	28.9	18.8	16.1	20.9
3	Region 21	12.8	12.2	13.6	9.8	9.7	9.8	28.5	27.5	29.3	28.1	26.0	31.1	20.9	19.1	21.8	79.1	78.2	80.9	28.4	26.6	31.4	26.1	21.6	28.8
4	Region 22	12.4	11.6	13.9	9.8	9.2	10.1	29.9	28.5	31.6	26.1	23.1	28.5	21.7	21.5	22.3	78.3	77.7	78.5	30.3	27.0	34.2	25.3	20.2	30.4
9	Region 23	13.5	11.5	17.3	10.2	9.5	11.0	29.4	27.3	31.7	26.6	20.6	29.7	20.4	18.2	24.1	79.6	75.9	81.8	27.5	25.9	29.9	25.0	17.6	31.8
11	Region 24	13.5	12.6	16.1	9.6	9.2	9.9	30.1	27.2	31.6	25.6	23.2	27.4	21.2	19.3	24.5	78.8	75.5	80.7	26.4	24.1	30.1	19.2	15.2	28.8
8	Region 25	14.7	12.8	17.8	10.0	9.0	11.1	26.7	24.5	29.0	24.8	20.9	26.9	23.7	17.5	27.0	76.3	73.0	82.5	22.9	-3.0	34.9	18.2	-7.5	28.5
5	Region 26	14.1	13.4	15.0	9.9	8.9	10.6	26.4	25.5	28.0	25.3	24.4	26.9	24.2	21.6	26.6	75.8	73.4	78.4	27.2	22.9	32.6	24.2	22.4	29.4
4	Region 27	15.0	12.5	17.6	9.7	7.5	10.7	26.7	24.5	29.4	27.0	23.7	30.4	21.5	20.8	22.6	78.5	77.4	79.2	26.9	25.7	28.0	20.8	18.0	23.6
11	Region 28	15.0	13.4	18.6	10.3	9.5	11.2	26.1	22.9	29.1	26.2	24.3	27.7	22.4	20.0	25.8	77.6	74.2	80.1	25.6	20.9	31.9	18.0	11.5	21.3
6	Region 29	13.6	12.0	15.2	9.9	9.5	10.3	26.2	24.7	27.5	26.4	24.7	27.5	23.9	22.2	25.5	76.1	74.5	77.8	28.0	26.1	30.2	22.2	17.4	25.5
4	Region 30	13.9	12.3	15.3	9.6	9.2	10.1	29.1	27.6	30.6	25.1	24.3	25.9	22.2	19.8	24.0	77.8	76.0	80.2	25.4	17.3	30.5	15.9	9.3	19.9
9	Region 31	13.2	11.6	15.1	9.7	8.8	10.2	29.1	27.7	30.2	25.8	24.1	28.3	22.2	20.4	24.2	77.8	75.8	79.6	23.5	16.4	27.4	19.3	14.5	24.9
8	Region 32	13.4	12.8	14.0	9.9	9.4	10.8	28.0	27.1	29.0	26.2	25.2	27.2	22.6	20.5	25.2	77.4	74.8	79.5	27.2	24.0	29.9	21.1	13.1	25.7
1	Region 33	13.6	13.6	13.6	9.5	9.5	9.5	27.4	27.4	27.4	26.1	26.1	26.1	23.5	23.5	23.5	76.5	76.5	76.5	26.9	26.9	26.9	22.1	22.1	22.1
6	Region 34	13.7	12.4	15.5	9.8	9.0	11.4	28.3	27.5	30.0	25.8	25.2	27.0	22.4	17.9	24.4	77.6	75.6	82.1	25.9	23.8	27.6	18.9	11.9	23.7
1	Region 35	11.4	11.4	11.4	9.6	9.6	9.6	27.6	27.6	27.6	30.1	30.1	30.1	21.2	21.2	21.2	78.8	78.8	78.8	34.9	34.9	34.9	25.5	25.5	25.5
1	Region 36	13.1	13.1	13.1	9.6	9.6	9.6	26.8	26.8	26.8	26.2	26.2	26.2	24.2	24.2	24.2	75.8	75.8	75.8	26.5	26.5	26.5	26.8	26.8	26.8
126	**Ave WM 2**	**13.6**			**9.9**			**28.3**			**26.2**			**22.1**			**77.9**			**26.7**			**21.5**		
	Min WM 2		**10.1**			**7.5**			**22.9**			**14.8**			**17.5**			**72.8**			**-3.0**			**-7.5**	
	Max WM 2			**18.6**			**11.4**			**36.2**			**33.9**			**27.2**			**82.5**			**34.9**			**35.4**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2009/2010) (continue)

Number of samples	Region	Roff Milling																	Whiteness index					
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, % (Total meal)			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																									
2	Region 12	14.3	14.0	14.5	9.7	9.6	9.8	29.5	28.5	30.5	25.5	25.2	25.7	21.1	19.9	22.2	78.9	77.8	80.1	22.3	20.9	23.8	15.2	14.0	16.4
1	Region 13	15.0	15.0	15.0	10.3	10.3	10.3	27.2	27.2	27.2	24.6	24.6	24.6	23.0	23.0	23.0	77.0	77.0	77.0	30.9	30.9	30.9	29.3	29.3	29.3
1	Region 17	13.9	13.9	13.9	9.9	9.9	9.9	31.5	31.5	31.5	24.3	24.3	24.3	20.4	20.4	20.4	79.6	79.6	79.6	21.1	21.1	21.1	15.8	15.8	15.8
2	Region 18	13.0	12.0	14.1	9.6	9.3	9.9	29.6	29.2	30.0	26.5	25.8	27.3	21.3	21.1	21.5	78.7	78.5	78.9	25.3	22.2	28.3	21.3	19.7	22.9
1	Region 19	13.2	13.2	13.2	9.6	9.6	9.6	29.9	29.9	29.9	26.1	26.1	26.1	21.3	21.3	21.3	78.7	78.7	78.7	30.8	30.8	30.8	20.8	20.8	20.8
2	Region 20	14.1	14.0	14.2	9.6	9.2	10.1	29.0	28.2	29.7	24.4	23.4	25.4	22.9	20.7	25.1	77.1	74.9	79.3	20.0	17.3	22.7	16.8	13.3	20.3
1	Region 21	12.7	12.7	12.7	10.1	10.1	10.1	27.9	27.9	27.9	28.8	28.8	28.8	20.5	20.5	20.5	79.5	79.5	79.5	25.3	25.3	25.3	23.8	23.8	23.8
4	Region 23	13.7	11.6	15.3	9.7	9.3	10.3	27.8	25.8	29.3	26.1	23.5	27.4	22.7	21.2	24.2	77.3	75.8	78.8	27.7	26.7	28.6	24.3	22.2	27.9
1	Region 24	14.9	14.9	14.9	10.0	10.0	10.0	30.5	30.5	30.5	23.3	23.3	23.3	21.3	21.3	21.3	78.7	78.7	78.7	24.5	24.5	24.5	14.8	14.8	14.8
1	Region 25	14.3	14.3	14.3	15.4	15.4	15.4	22.8	22.8	22.8	23.7	23.7	23.7	23.7	23.7	23.7	76.3	76.3	76.3	5.8	5.8	5.8	-2.7	-2.7	-2.7
2	Region 26	14.5	13.9	15.1	10.0	9.8	10.2	27.9	27.9	27.9	24.5	23.7	25.3	23.1	21.5	24.7	76.9	75.3	78.5	22.8	19.8	25.9	17.8	10.5	25.2
4	Region 28	13.7	12.1	14.8	10.6	9.7	11.6	27.1	23.6	28.3	26.6	23.8	28.6	22.0	20.7	24.4	78.0	75.6	79.3	25.2	23.2	28.3	23.2	21.2	27.1
1	Region 29	12.9	12.9	12.9	10.4	10.4	10.4	27.8	27.8	27.8	28.1	28.1	28.1	20.8	20.8	20.8	79.2	79.2	79.2	26.2	26.2	26.2	21.7	21.7	21.7
1	Region 32	11.5	11.5	11.5	9.7	9.7	9.7	26.5	26.5	26.5	29.0	29.0	29.0	23.3	23.3	23.3	76.7	76.7	76.7	28.8	28.8	28.8	19.8	19.8	19.8
24	**Ave WM 3**	**13.7**			**10.2**			**28.2**			**25.8**			**22.1**			**77.9**			**24.4**			**19.8**		
	Min WM 3		**11.5**			**9.2**			**22.8**			**23.3**			**19.9**			**74.9**			**5.8**			**-2.7**	
	Max WM 3			**15.3**			**15.4**			**31.5**			**29.0**			**25.1**			**80.1**			**30.9**			**29.3**
GRADE: COM																									
1	Region 33	12.6	12.6	12.6	9.0	9.0	9.0	25.8	25.8	25.8	25.6	25.6	25.6	27.1	27.1	27.1	72.9	72.9	72.9	6.8	6.8	6.8	5.0	5.0	5.0
1	**Ave COM**	**12.6**			**9.0**			**25.8**			**25.6**			**27.1**			**72.9**			**6.8**			**5.0**		
	Min COM		**12.6**			**9.0**			**25.8**			**25.6**			**27.1**			**72.9**			**6.8**			**5.0**	
	Max COM			**12.6**			**9.0**			**25.8**			**25.6**			**27.1**			**72.9**			**6.8**			**5.0**
458	**Ave white maize**	**13.5**			**9.9**			**27.9**			**26.6**			**22.2**			**77.8**			**27.7**			**22.4**		
	Min white maize		**10.1**			**7.4**			**21.0**			**14.8**			**17.4**			**71.3**			**-3.0**			**-7.5**	
	Max white maize			**19.1**			**16.7**			**36.2**			**33.9**			**28.7**			**82.6**			**38.5**			**35.4**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE (2009/2010)

Number of samples	Region	Roff Milling																		Whiteness index					
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, % (Total meal)			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WHITE																									
2	Region 11	11.8	10.1	13.6	10.2	9.9	10.5	27.2	27.0	27.4	30.1	26.3	33.9	20.7	18.5	22.9	79.3	77.1	81.5	23.4	22.3	24.4	14.2	12.8	15.6
11	Region 12	13.4	11.5	14.5	9.6	8.7	10.1	28.6	26.4	30.5	26.2	24.3	29.7	22.2	18.8	25.6	77.8	74.4	81.2	27.4	20.9	30.2	23.2	14.0	27.9
9	Region 13	13.4	11.6	15.0	9.8	9.2	10.3	29.4	27.2	30.8	25.7	24.5	28.4	21.7	20.1	23.4	78.3	76.6	79.9	26.2	11.1	30.9	20.5	-4.4	29.3
18	Region 14	12.7	11.0	13.6	9.6	8.9	10.4	28.5	23.7	30.0	27.5	24.6	29.4	21.7	18.5	25.3	78.3	74.7	81.5	27.7	22.6	31.7	24.6	15.9	35.4
19	Region 15	12.6	11.9	13.6	9.8	9.1	10.5	27.7	21.6	36.2	28.1	14.8	31.3	21.8	17.6	27.2	78.2	72.8	82.4	29.1	24.4	33.1	23.1	18.0	27.7
22	Region 16	12.8	10.8	13.9	9.8	9.0	10.2	27.9	24.2	30.7	27.8	25.7	30.5	21.7	18.3	23.8	78.3	76.2	81.7	28.6	25.2	31.7	25.8	19.3	32.2
14	Region 17	13.4	12.2	15.1	9.8	8.9	10.9	28.9	26.9	31.5	26.0	24.3	27.4	21.9	20.0	26.6	78.1	73.4	80.0	27.3	21.1	31.0	21.8	15.8	28.7
14	Region 18	13.5	12.0	14.7	9.6	9.1	10.2	28.9	26.6	30.3	26.5	23.8	27.6	21.5	19.0	24.0	78.5	76.0	81.0	27.2	22.2	32.1	22.9	14.9	30.9
10	Region 19	13.3	12.2	14.4	9.8	9.1	11.3	29.2	28.2	31.0	25.6	24.0	27.2	22.0	20.7	23.3	78.0	76.7	79.3	28.8	24.2	34.3	24.3	20.5	30.3
10	Region 20	13.8	12.7	14.9	9.9	9.2	10.8	29.2	28.2	29.9	25.2	23.4	26.3	22.0	20.2	25.1	78.0	74.9	79.8	25.2	17.3	28.9	20.6	13.3	24.7
29	Region 21	13.4	11.1	15.7	9.8	8.9	10.7	28.2	25.5	30.3	27.0	23.4	31.1	21.5	17.4	26.0	78.5	74.0	82.6	26.7	23.1	32.1	21.4	12.9	30.6
10	Region 22	12.9	11.6	14.0	9.8	9.2	10.3	29.9	28.5	31.6	26.6	23.1	28.5	20.8	19.2	22.3	79.2	77.7	80.8	29.1	24.3	34.2	23.5	16.2	30.4
34	Region 23	13.1	11.0	17.3	9.8	7.4	12.4	29.0	25.8	31.9	27.2	20.6	29.9	21.0	18.2	24.2	79.0	75.8	81.8	28.1	23.3	34.1	24.7	15.5	32.7
32	Region 24	13.1	11.3	16.1	9.7	8.8	11.0	29.5	26.7	31.6	26.4	23.2	29.5	21.3	19.3	24.7	78.7	75.3	80.7	26.3	24.0	30.1	19.8	14.8	28.8
23	Region 25	15.0	12.6	19.1	10.6	9.0	16.4	26.6	21.0	30.1	24.6	20.0	26.9	23.2	17.5	27.8	76.8	72.2	82.5	25.5	-3.0	34.9	20.2	-7.5	28.5
19	Region 26	14.3	10.4	17.4	9.8	8.7	10.8	26.3	23.6	28.9	25.6	21.9	30.2	24.0	21.5	26.6	76.0	73.4	78.5	27.9	19.8	34.5	22.6	10.5	31.1
6	Region 27	14.8	12.5	17.6	10.0	7.5	10.7	26.8	24.5	29.4	26.7	23.7	30.4	21.8	20.8	22.6	78.2	77.4	79.2	27.5	25.7	29.0	20.6	18.0	23.6
40	Region 28	14.7	11.7	18.6	10.5	9.3	16.7	26.2	22.6	29.5	26.4	22.4	29.8	22.2	18.9	25.8	77.8	74.2	81.1	28.0	20.9	33.6	21.3	11.5	27.8
33	Region 29	14.1	10.3	16.9	9.8	8.6	10.5	26.2	22.8	28.7	26.1	22.1	30.5	23.8	20.8	28.7	76.2	71.3	79.2	29.8	23.0	37.0	24.7	17.4	31.5
18	Region 30	13.5	12.3	17.2	10.2	9.1	14.2	27.4	24.1	30.6	26.5	23.8	29.1	22.4	19.8	26.1	77.6	73.9	80.2	28.0	17.3	32.5	19.3	9.3	23.4
14	Region 31	13.0	10.9	15.1	9.6	8.8	10.2	28.8	27.3	30.2	26.3	24.1	28.9	22.3	20.4	25.1	77.7	74.9	79.6	24.3	16.4	28.2	19.9	14.5	26.9
26	Region 32	13.2	11.5	15.2	10.0	9.0	11.9	27.8	24.5	30.1	26.3	24.5	29.0	22.8	20.5	26.4	77.2	73.6	79.5	28.8	24.0	38.5	22.7	13.1	30.2
5	Region 33	13.3	12.6	14.3	9.6	9.0	10.1	28.7	25.8	31.3	25.8	24.7	26.9	22.5	19.9	27.1	77.5	72.9	80.1	22.8	6.8	28.3	16.8	5.0	22.1
16	Region 34	13.8	12.4	15.5	9.8	9.0	11.4	28.4	26.6	30.1	26.0	25.2	27.2	22.0	17.9	24.4	78.0	75.6	82.1	27.8	23.8	32.6	21.7	11.9	28.2
8	Region 35	12.9	11.4	14.4	10.1	9.5	10.7	25.9	21.5	28.1	28.8	26.6	30.1	22.3	19.1	26.9	77.7	73.1	80.9	33.4	29.6	36.7	23.8	18.5	27.5
16	Region 36	11.9	10.6	13.4	9.0	8.5	9.7	27.9	25.0	29.6	28.2	26.2	30.4	23.0	19.9	27.1	77.0	72.9	80.1	26.8	20.7	30.6	25.5	20.8	28.8
458	**Ave white**	**13.5**			**9.9**			**27.9**			**26.6**			**22.2**			**77.8**			**27.7**			**22.4**		
	Min white		**10.1**			**7.4**			**21.0**			**14.8**			**17.4**			**71.3**			**-3.0**			**-7.5**	
	Max white			**19.1**			**16.7**			**36.2**			**33.9**			**28.7**			**82.6**			**38.5**			**35.4**

Table 17: Presence of Genetically Modified Maize (2009/2010)

REGION	RSA Grade	MON810, % (LOD: 0.15%)	NK603 (Roundup Ready) % (LOD: 0.25%)	REGION	RSA Grade	MON810, % (LOD: 0.15%)	NK603 (Roundup Ready) % (LOD: 0.25%)
10	YM1	>2	>1.8	25	WM1	>2	<0.25
11	WM1	>2	0.4	25	WM2	>2	<0.25
12	WM1	>2	<0.25	25	WM2	>2	1.3
12	WM3	>2	0.8	25	YM1	>2	0.3
13	WM3	>2	0.6	25	YM1	>2	0.4
13	YM1	>2	1.7	26	WM1	>2	<0.25
14	WM2	>2	<0.25	26	WM2	>2	0.4
14	WM2	>2	0.8	26	WM3	>2	<0.25
14	WM2	>2	1.2	26	YM1	>2	>1.8
14	YM1	>2	0.6	26	YM1	>2	<0.25
15	WM2	>2	<0.25	27	WM2	>2	<0.25
15	YM1	>2	>1.8	27	WM2	>2	1.2
16	WM1	>2	0.3	27	YM2	>2	<0.25
16	WM1	>2	<0.25	28	WM1	>2	>1.8
16	YM2	>2	1.3	28	WM1	>2	>1.8
17	WM1	>2	0.6	28	WM1	>2	1.5
17	WM2	>2	<0.25	28	YM1	>2	>1.8
17	WM2	>2	0.9	28	YM1	>2	<0.25
17	WM2	>2	1.8	28	YM1	>2	>1.8
18	WM1	>2	>1.8	28	YM2	1.0	<0.25
18	WM1	>2	0.8	28	YM2	>2	<0.25
18	WM2	>2	<0.25	28	YM3	>2	0.4
18	YM1	>2	1.2	29	WM1	>2	0.5
18	YM1	>2	0.5	29	WM1	>2	<0.25
19	WM2	>2	<0.25	29	WM1	>2	1.7
19	YM2	>2	1.1	29	WM2	>2	<0.25
20	WM2	>2	1.2	29	YM1	>2	<0.25
20	WM3	>2	1.4	29	YM1	0.3	<0.25
21	WM1	>2	>1.8	30	WM1	>2	>1.8
21	WM1	>2	>1.8	30	WM1	>2	<0.25
21	WM1	>2	0.7	30	WM1	<0.15	<0.25
21	WM1	>2	1.0	31	WM1	<0.15	<0.25
22	WM1	>2	1.4	31	YM2	>2	>1.8
22	WM2	>2	1.4	31	YM2	1.8	<0.25
22	WM2	>2	0.5	32	WM1	<0.15	<0.25
23	WM1	>2	0.3	32	WM1	>2	<0.25
23	WM3	>2	0.3	33	WM1	>2	0.4
23	YM1	>2	<0.25	34	WM1	>2	<0.25
23	YM1	>2	<0.25	34	YM1	<0.15	<0.25
23	YM2	>2	>1.8	34	YM1	>2	0.7
24	WM1	>2	>1.8	35	WM1	>2	>1.8
24	WM1	>2	<0.25	35	YM1	>2	>1.8
24	WM1	>2	<0.25	36	WM1	0.5	>1.8
24	WM1	>2	0.8	36	WM1	>2	<0.25
24	WM1	>2	<0.25	36	YM1	>2	0.8

n	Season	% Samples positive for MON810 (Bt)	n	Season	% Samples positive for NK603 (RUR)
90	**2009/2010**	**96**	**90**	**2009/2010**	**61**
90	2008/2009	91	90	2008/2009	90
100	2007/2008	95	100	2007/2008	69
90	2006/2007	97	90	2006/2007	59
90	2005/2006	91	90	2005/2006	31
100	2004/2005	78	100	2004/2005	31

TABLE 18: Mycotoxin results - Maize Crop Quality 2009/2010

Region	Grade	Aflatoxin µg/kg				Fumonisin µg/kg		DON µg/kg	Ochratoxin A µg/kg	Zearalenone µg/kg	T2 - Toxin µg/kg
		G_1	B_1	G_2	B_2	B_1	B_2				
		LOD									
		5 µg/kg	5 µg/kg	5 µg/kg	5 µg/kg	100 µg/kg	5 µg/kg	5 µg/kg	5 µg/kg	20 µg/kg	5 µg/kg
10	YM1	0	0	0	0	0	0	34	0	0	0
11	WM1	0	0	0	0	102	30	44	0	0	0
12	WM1	0	0	0	0	0	40	110	0	0	0
12	WM3	0	0	0	0	650	237	106	0	0	0
13	WM3	0	0	0	0	1806	599	264	0	0	0
13	YM1	0	0	0	0	0	0	34	0	0	0
14	WM2	0	0	0	0	0	0	560	0	0	0
14	YM1	0	0	0	0	0	0	92	0	0	0
14	WM2	0	0	0	0	324	114	594	0	0	0
14	WM2	0	0	0	0	230	72	58	0	0	0
15	YM1	0	0	0	0	218	101	0	0	0	0
15	WM2	0	0	0	0	0	0	12	0	0	0
16	WM1	0	0	0	0	0	0	310	0	0	0
16	YM2	0	0	0	0	510	160	100	0	0	0
16	WM1	0	0	0	0	154	72	0	0	0	0
17	WM2	0	0	0	0	624	316	51	0	0	0
17	WM2	0	0	0	0	1082	308	75	0	0	0
17	WM1	0	0	0	0	166	68	206	0	0	0
17	WM2	0	0	0	0	0	0	82	0	0	0
18	WM1	0	0	0	0	0	0	56	0	0	0
18	WM2	0	0	0	0	0	14	30	0	0	0
18	WM1	0	0	0	0	550	254	94	0	0	0
18	YM1	0	0	0	0	0	0	440	0	0	0
18	YM1	0	0	0	0	574	116	224	0	0	0
19	WM2	0	0	0	0	0	0	917	0	0	0
19	YM2	0	0	0	0	1200	363	199	0	0	0
20	WM2	0	0	0	0	0	0	1845	0	0	0
20	WM3	0	0	0	0	0	0	444	0	0	0
21	WM1	0	0	0	0	0	26	154	0	0	0
21	WM1	0	0	0	0	0	0	28	0	0	0
21	WM1	0	0	0	0	0	0	263	0	0	0
21	WM1	0	0	0	0	0	12	570	0	0	0
22	WM2	0	0	0	0	0	0	72	0	0	0
22	WM1	0	0	0	0	1130	409	439	0	0	0
22	WM2	0	0	0	0	0	0	168	0	0	0
23	YM1	0	0	0	0	0	0	22	0	0	0
23	YM1	0	0	0	0	0	0	242	0	0	0
23	YM2	0	0	0	0	0	0	0	0	0	0
23	WM1	0	0	0	0	1229	400	624	0	0	0
23	WM3	0	0	0	0	192	68	298	0	0	0
24	WM1	0	0	0	0	330	150	356	0	0	0
24	WM1	0	0	0	0	0	0	272	0	0	0
24	WM1	0	0	0	0	0	0	346	0	0	0
24	WM1	0	0	0	0	346	130	44	0	0	0
24	WM1	0	0	0	0	0	0	32	0	0	0
25	WM1	0	0	0	0	118	58	58	0	0	0
25	YM1	0	0	0	0	0	0	196	0	0	0

TABLE 18: Mycotoxin results - Maize Crop Quality 2009/2010 (continue)

Region	Grade	Aflatoxin µg/kg				Fumonisin µg/kg		DON µg/kg	Ochratoxin A µg/kg	Zearalenone µg/kg	T2 - Toxin µg/kg
		G_1	B_1	G_2	B_2	B_1	B_2				
		LOD									
		5 µg/kg	5 µg/kg	5 µg/kg	5 µg/kg	100 µg/kg	5 µg/kg	5 µg/kg	5 µg/kg	20 µg/kg	5 µg/kg
25	YM1	0	0	0	0	0	0	46	0	0	0
25	WM2	0	0	0	0	0	0	60	0	0	0
25	WM2	0	0	0	0	0	0	142	0	0	0
26	WM2	0	0	0	0	0	0	184	0	0	0
26	WM3	0	0	0	0	0	0	95	0	0	0
26	YM1	0	0	0	0	0	0	30	0	0	0
26	WM1	0	0	0	0	0	0	260	0	0	0
26	YM1	0	0	0	0	226	62	290	0	0	0
27	WM2	0	0	0	0	3133	902	730	0	0	0
27	YM2	0	0	0	0	392	102	154	0	0	0
27	WM2	0	0	0	0	0	0	222	0	0	0
28	YM1	0	0	0	0	0	0	76	0	0	0
28	YM2	0	0	0	0	0	0	88	0	0	0
28	WM1	0	0	0	0	0	0	70	0	0	0
28	YM1	0	0	0	0	362	76	54	0	0	0
28	WM1	0	0	0	0	0	0	188	0	0	0
28	WM1	0	0	0	0	0	0	540	0	0	0
28	YM2	0	0	0	0	0	0	62	0	0	0
28	YM3	0	0	0	0	0	0	42	0	0	0
28	YM1	0	0	0	0	0	0	0	0	0	0
29	WM1	0	0	0	0	0	0	470	0	0	0
29	WM1	0	0	0	0	0	0	32	0	0	0
29	YM1	0	0	0	0	0	0	50	0	0	0
29	WM2	0	0	0	0	0	0	26	0	0	0
29	WM1	0	0	0	0	0	0	86	0	0	0
29	YM1	0	0	0	0	0	18	0	0	0	0
30	WM1	0	0	0	0	0	0	406	0	0	0
30	WM1	0	0	0	0	0	0	204	0	0	0
30	WM1	0	0	0	0	0	0	460	0	0	0
31	YM2	0	0	0	0	0	0	134	0	0	0
31	WM1	0	0	0	0	168	58	232	0	0	0
31	YM2	0	0	0	0	248	94	136	0	0	0
32	WM1	0	0	0	0	102	34	86	0	0	0
32	WM1	0	0	0	0	0	0	296	0	0	0
33	WM1	0	0	0	0	0	0	552	0	0	0
34	YM1	0	0	0	0	126	57	0	0	0	0
34	WM1	0	0	0	0	0	22	334	0	0	0
34	YM1	0	0	0	0	0	0	174	0	0	0
35	WM1	0	0	0	0	506	180	0	0	0	0
35	YM1	0	0	0	0	0	0	0	0	0	0
36	YM1	0	0	0	0	0	0	92	0	0	0
36	WM1	0	0	0	0	0	0	204	0	0	0
36	WM1	0	0	0	0	0	0	78	0	0	0
Average		***0***	***0***	***0***	***0***	***187***	***64***	***206***	***0***	***0***	***0***
Maximum		***0***	***0***	***0***	***0***	***3133***	***902***	***1845***	***0***	***0***	***0***
Number of samples		***90***	***90***	***90***	***90***	***90***	***90***	***90***	***90***	***90***	***90***

Note: All results <LOD and non detected are reported as 0
LOD: Limit of detection, see table
µg/kg = ppb (parts per billion)

TABLE 19: MYCOTOXIN RESULTS - SUMMARY OF SEASON 1999/2000 TO 2009/2010

Season	Total Number of samples received	Number of samples tested for mycotoxins	Aflatoxin µg/kg			Fumonisin µg/kg			Deoxynivalenol µg/kg			Zearalenone µg/kg			Ochratoxin A µg/kg			T-2 Toxin µg/kg		
			ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
1999/2000	900	90	0	0	0	650	30	4 900	Not tested			Not tested			Not tested			Not tested		
2000/2001	900	57	<1	0	22	1 670	0	8 100	680	0	5 400	<100	0	120	<2.0	0	0	0	0	0
2001/2002	900	90	0	0	0	760	0	5 100	630	0	2 200	<100	0	30	<2.0	0	0	0	0	0
2002/2003	900	90	0	0	0	730	0	3 900	<500	0	4 300	<100	0	140	<2.0	0	2.0	<150	0	290
2003/2004	900	90	0	0	0	1 140	160	5 600	200	0	13 000	<100	0	120	<2.0	0	5.7	Not tested		
2004/2005	1 000	100	0	0	0	1 080	0	5 300	600	0	3 900	<100	0	440	<2.0	0	2.4	Not tested		
2005/2006	900	90	0	0	0	970	0	13 000	2 740	0	6 200	30	0	390	<2.0	0	2.9	Not tested		
2006/2007	900	90	<1	0	9	640	0	4 500	530	0	3 100	0	0	0	<2.0	0	6.5	Not tested		
2007/2008	900	100	0	0	2	470	0	5 500	240	0	1 700	0	0	100	<1.0	0	2.0	Not tested		
2008/2009	810	90	0	0	0	490	0	3 300	430	0	2 900	<25	0	160	<1.0	0	1.0	Not tested		
*2009/2010	800	90	0	0	0	251	0	4 035	206	0	1 845	0	0	0	0	0	0	0	0	0
Total	9 810	977																		
Min				0			0			0			0			0			0	
Max					22			13 000			13 000			440			6.5			290

*** Sum of Aflatoxin (G_1; B_1; G_2; B_2) and sum of Fumonisin (B_1; B_2)**

Mycotoxin methodology

Technique used for season 1999/2000 - 2006/2007

The mycotoxin analyses were carried out in accordance with the Vicam Immunoaffinity Column Chromatography method using the different Vicam Instruction Manuals for the different mycotoxins. Detection of the toxins was done on a Fluorometer. The following range and limit of detection apply for each toxin:

Mycotoxin	Assay range µg/kg	LOD for maize µg/kg
Aflatoxin	0 - 300	1
Fumonisin	0 - 10 000	250
Deoxynivalenol	500 - 50 000	500
Zearalenone	0 - 5 000	100
Ochratoxin A	0 - 50	2
T - 2 Toxin	150 - 2 000	150

Technique used for season 2007/2008 - 2008/2009

The SAGL uses the ROSA (Rapid One Step Assay) Quantitative test, which is a lateral flow immuno assay test, together with the ROSA-M Reader for measuring the mycotoxin content. The following range and limit of detection apply for each toxin:

Mycotoxin	Assay range µg/kg	LOD for maize µg/kg
Aflatoxin	0 - 100	2
Fumonisin	0 - 60 000	100
Deoxynivalenol	0 - 5 000	250
Zearalenone	0 - 1 000	25
Ochratoxin A	0 - 150	1

Technique used for season 2009/2010

During 2010 SAGL implemented a multi-mycotoxin screening method using UPLC-MS/MS. The following limit of detection apply for each toxin:

Mycotoxin	LOD for maize µg/kg
Aflatoxin G_1	5
Aflatoxin B_1	5
Aflatoxin G_2	5
Aflatoxin B_2	5
Fumonisin B_1	100
Fumonisin B_2	5
Deoxynivalenol	5
Zearalenone	20
Ochratoxin A	5
T - 2 Toxin	5

Notes:

Limit of detection (LOD) means the lowest level that can be detected accurately by the technique.

A result above zero but lower than the limit of detection, is reported as <"LOD".

µg/kg = ppb (parts per billion).

Methods

1. RSA grading

RSA grading was done in accordance with the Grading Regulations for maize, as published in the Government Gazette No. 32190 of 8 May 2009, Regulation No. R.473.

Description of deviations relating to RSA grading

1.1 Defective maize kernels

The following definition of Defective maize kernels is quoted from the Grading Regulations:
"Defective maize kernels" means maize kernels and pieces of maize kernels –

(a) that are shrivelled, obviously immature, frost-damaged, heat damaged, water damaged, mouldy or chalky;
(b) that are discoloured by external factors such as water and sun: Provided that discoloration on both sides of the maize kernel limited to less than a quarter from the bottom tip of the maize kernel shall not be considered as defective, oxidation stained maize kernels, coffee stained maize kernels and pinked maize kernels shall not be considered as defective;
(c) that have sprouted, including kernels which the shoot (plumule) in the germ is visibly discoloured;
(d) that have cavities in the germ or endosperm caused by insects or rodents;
(e) that are visibly soiled (smeared) or contaminated by smut, fire, soil, smoke or coal-dust;
(f) all matter that can pass through the 6.35 mm round-hole sieve; and
(g) that are of subspecies other than *Zea mays indentata* or *Zea mays indurata*
Provided that –
    (i) irregularity of shape and size of maize kernels shall not affect the grading thereof;
    (ii) chipped or cracked maize kernels or pieces of maize kernels which are in a sound condition and which appear in a sample of maize, but which do not pass through a 6.35 mm round-hole sieve, shall not be regarded as defective maize kernels under these regulations."

1.2 Foreign matter

The term "foreign matter" means all matter above the sieve other than maize, glass, stone, coal, dung or metal.

1.3 Other colour

"Other colour maize kernels" in relation to-

(a) white maize, means maize kernels or pieces of maize kernels of which the endosperm as a result of genetic (characteristics) composition have another colour than white, excluding pinked maize kernels;
(b) yellow maize, means maize kernels or pieces of maize kernels of which the endopserm as a result of genetic (characteristics) composition have another colour than yellow.

1.4 Total deviation

The term "total deviation" means the sum of defective kernels (above and below the 6.35 mm sieve), foreign matter and other colour kernels.

1.5 Pinked kernels

The term "pinked maize kernels" means kernels and pieces of kernels of white maize of which the pericarp or part thereof is shaded red or pink in colour.

The specification, according to the Grading Regulations for classes 1 to 3 of white maize is a maximum of

12 %. No specification for yellow maize according to the Grading Regulations.

1.6. Fungal infection

Kernels which are mouldy (fungi infected) are reported as defective kernels according to the grading regulations.

"Mouldy" means kernels and pieces of kernels that –

(a) are visibly infected by fungi and are characterised by black, blue, green, yellow or white fungi growth anywhere on the kernel, or are characterised by fungi growth underneath the bran layer of the kernel;

(b) are infected by ear-rot and are characterised by red, pink or brown discolorations. The kernel are partially to completely infected.

For this survey all samples were also inspected for the visual symptoms of Diplodia and Fusarium cobrot and reported separately.

Fusarium spp infections are localized on the cob with discoloured maize kernels, which become reddish (light pink to lilac).

Diplodia maydis normally rots the entire maize cob and infected maize kernels are recognized by a light ash colour to black colour that appears at the germ and can infest the whole kernel.

% Cobrot reported are the percentage maize kernels that are both Fusarium and Diplodia infected.

2. USA Grading

USA grading was determined in accordance with the method of the American Grading Regulations (United States Department of Agriculture).

There are seven grades or standards in US grading, Grades nos. 1 to 5, sample grade and mixed grade. No.1 is the most desirable followed by no. 2 down to sample grade and mixed grade.

Description of deviations relating to USA grading

2.1. Damaged kernels

Kernels and pieces of corn kernels that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, germ-damaged, heat-damaged, insect-bored, mould-damaged, sprout-damaged or otherwise materially damaged.

2.2. Heat damaged kernels

Kernels and pieces of kernels which are materially discolored by excessive respiration, with the dark discoloration extending out of the germ through the sides and into the back of the kernel as well as kernels and pieces of kernels which are puffed or swollen and materially discolored by external heat caused by artificial drying methods.

2.3. Broken corn and foreign material

Broken corn is all matter that passes readily through a 12/64-inch (4.76 mm) round-hole sieve and over a 6/64-inch (2.38 mm) round-hole sieve.

Foreign material is all matter that passes readily through a 2.38 mm round-hole sieve and all matter other than corn that remains on top of the 4.76 mm round-hole sieve after sieving.

Broken corn and foreign material is all matter that passes readily through a 4.76 mm round-hole sieve and all

matter other than corn that remains in the sieved sample.

2.4. Bushel weight

The specific mass (or grain density) of maize (expressed as hectolitre mass or bushel weight) is a quality characteristic which is important to some maize consumers and is applied as a grading factor in the USA grading regulations.

The Test weight per bushel apparatus is used to determine the approximate weight of a bushel of a particular lot of grain.

Bushel weight was determined on the maize crop samples and the results converted to hectoliter mass by multiplication with a factor of 1.2872.

2.5. Other colour

Maize samples are deemed to be mixed grade when maize kernels of another colour for white maize exceeds 2 % and for yellow maize exceeds 5 %.

3. Nutritional value

The fat, protein and starch contents are measured with the Infratec 1241 Whole Grain Analyzer. The measurements are based on the fact that the constituents to be measured in the grain, absorb electromagnetic radiation in the near-infrared region of the spectrum. Since the Infratec 1241 Grain Analyzer uses transmission absorption, the test is done on intact maize kernels.

The Infratec 1241 Grain Analyzer (Near Infrared) (NIT) was calibrated against international chemical methods for the determination of nutritional values.

The chemical methods used to establish a set of calibration samples were:
a) Fat: Petroleum ether extraction (Soxhlet) method (AACC 30-25, latest edition)
b) Protein: Dumas (Leco) method (AACC 46-30, latest edition)
c) Starch: Hydrochloric Acid dissolution method (Polarimeter) In house method 019 (Zeiss Polarimeter manual).

These sets of calibration samples were used to calibrate the Infratec 1241 Grain Analyzer (NIT) and results were checked by analysing every tenth sample by means of the primary methods.

4. Physical characteristics

4.1 Hectolitre mass (See USA grading- Bushel weight)

Hectolitre mass means the mass in kilogram per hectolitre. The specific mass (or grain density) of maize expressed as hectolitre mass is influenced by the following factors e.g cultivar, moisture content, foreign matter, other grain and damaged kernels like insect damaged and immature kernels. (See USA grading- Bushel weight).

4.2 Hundred (100) kernel mass - Industry accepted method 001

100 kernel mass is the weight in grams of one hundred whole maize kernels and provides a measure of grain size and density.

4.3 Kernel size - Industry accepted method 017

Kernel size is important to the sophisticated starch manufacturing industry. Kernels that are too small hamper the separation of kernel fractions in the wet milling process. The result is a lower starch yield. A mixture of small and large kernels causes additional problems, as homogeneous steeping cannot be achieved. On the other

hand, very large kernels can also cause problems since the ratio between volume and mass is unfavourable to proper steeping.

The dry milling industry also prefers fairly larger maize kernels. However, uniform kernel size is of particular importance to this industry, since too large kernels create problems especially when mixed with smaller kernels.

Kernel size is less important to the animal feed manufacturing industry. Larger kernels are nevertheless preferred, as small kernels are easily lost during the screening stage of processing. The determination of kernel size comprises the sieving of a 100 g representative whole maize sample through both 8 mm and 10 mm round-hole grading sieves, normally used in the seed industry.

4.4 Breakage susceptibility - Industry accepted method 007

Maize is normally cleaned before processing. In the cleaning process, broken kernels are removed together with other impurities, causing losses. Broken kernels are further broken during handling, resulting in excesive grain dust being generated. This creates the potential for dust explosions, health hazards, hygiene problems, etc. Maize containing a high percentage of broken kernels is more prone to insect infection and is subject to general deterioration.

In the modern dry milling industry, maize is cleaned first and then conditioned by dampening before the germ is removed. Broken kernels cause many problems during these stages of processing. Broken kernels can also lead to a lower extraction of the so-called high-quality products, like samp and maize grits. The presence of many broken kernels cause problems with the fibre and fat content of maize products, for example the various grades of maize meal, because the quantity of germ required to be returned to the milled endosperm cannot be determined accurately.

In the wet milling process broken kernels steep more rapidly than whole kernels and by the time the whole kernels have been sufficiently steeped, the broken kernels have been over-steeped, causing an ineffective separation of protein and starch.

In the livestock feed industry breakability is not an important quality characteristic, except for dust and hygiene reasons.

All samples were subjected to a breakage susceptibility test. After the sample of whole maize kernels was propelled in a Stein Breakage tester for 4 minutes, the fraction below the 6.35 mm and 4.75 mm sieves was collected and the percentage broken kernels < 6.35 mm and < 4.75 mm was determined.

4.5 Stress cracks - Industry accepted method 006

Stress cracks are determined by visual inspection of a certain amount of whole maize kernels examined on top of a light box for small internal cracks in the endosperm. Some kernels may even have two or more internal cracks. Any form of stress may cause internal cracks, for example rapid moisture loss in the field, during harvest or during drying.

4.6 Milling index - Industry accepted method 015

Milling index is an indication of the milling abilities and milling quality of maize kernels where a higher milling index means a higher extraction of the high-grade and most profitable products like samp, maize rice and maize grits (degermed products) that are manufactured from the corneous part of the endosperm. The milling index is an indication of the relative differences between samples tested. The milling index is measured with the Infratec 1241 Grain Analyzer. The SAGL uses a calibration developed by the Grain Crops Institute of the ARC.

4.7 Milling of maize on Roff maize mill - Industry accepted method 013

The Roff 150 Series maize mill is used to mill representative samples of 500 g. The mill should be pre-set to the following specifications: Break 1 roll nip - 0.3 mm, Break 2 roll nip - 0.18 mm and Break 3 roll nip -

0.08 mm. These settings are according to the specifications in the method developed by the ARC Grain Crops Institute. Every mill has three separations, namely germ, grits and maize meal. The grits from Break 1 are transferred to the Break 2 rolls and the grits from Break 2 are transferred to Break 3 rolls.

The following fractions are weighed and determined as percentage: Break 1 meal, Break 2 meal, Break 3 meal and Break 3 grits. Break 1, 2 and 3 germ and bran are combined and then weighed for determination of Bran/Germ %. Break 3 grits are weighed for determination of % Grits. Break 1, 2 and 3 meal are weighed for determination of % extraction total meal.

4.8 Whiteness index - Industry accepted method 004

Whiteness index of white maize meal was determined with the Hunterlab colorflex 45°/0°. Whiteness is associated with a region or volume in colour space in which objects are recognized as white. The degree of whiteness is measured by the degree of departure of the object from a perfect white. The higher the whiteness index value, the whiter the sample.

Whiteness index was done on unsifted and sifted maize meal obtained from Break 2 and 3 of the Roff mill. The sifted samples were sifted with a 300 µm sieve and then mixed to contain 87 % of maize meal >300 µm and 13 % of maize meal <300 µm.

5. Mycotoxin analyses

The pathogenic nature of certain species of fungi to plants has been observed virtually since the beginning of agriculture. These plant pathogens can produce metabolites (mycotoxins) that show toxic effects when they are ingested.

During 2010 SAGL implemented a multi-mycotoxin screening method using UPLC - MS/MS. 90 of the 800 maize crop samples were tested for Aflatoxin G_1; B_1; G_2; B_2, Fumonisin B_1 and B_2, Deoxynivalenol, T2 - Toxin, Zearalenone and Ochratoxin A.

6. GMO (Genetically Modified Organisms)

90 samples of the 800 maize crop samples were tested for *Bt* (MON810) and RUR (NK603) Modified maize.

Quantitative analyses for MON810 maize were done using the procedure supplied with the Strategic Diagnostics Incorporated GMO *Bt* maize test kit. Cry 1 Ab protein in corn is produced from a gene derived from *Bacillus thuringiensis (Bt)*. This method is a quantitative enzyme-linked immunosorbent assay (ELISA) test for the determination of *Bt* modified corn in corn flour. Proprietary antibodies specific for Cry 1 Ab protein are used.

The GMO Soya test kit from Strategic Diagnostics Incorporated (SDI) were used to quantitatively determine Roundup Ready (RUR). The procedure was adapted by SDI for maize.

7. Sampling Procedure

All the samples tested and received from the grain storers are drawn in the following way:

With each consignment at the silos a 10 kg grading sample is drawn for grading purposes according to the Grading Regulations.

After the grading sample has been divided, 500 g of each of the 10 kg samples are transferred to a 50 kg bag representing a certain class and grade. When this bag is full, it is divided and a 3 kg sample according to class and grade per silo bin is sent to the SAGL.

A working sample is obtained by dividing the representative sample of the consignment according to ICC101/1 method.

SOUTH AFRICAN MAIZE CROP QUALITY 2009/2010 (Averages)

Class and grade of maize	WM1	WM2	WM3	WCOM	YM1	YM2	YM3	YCOM	Weighted Ave.
RSA Grading									
Defective kernels above 6.35 mm sieve, %	3.4	7.2	13.2	40.1	3.3	8.6	17.1	3.5	5.1
Defective kernels below 6.35 mm sieve, %	1.3	1.9	2.4	1.2	1.5	2.6	3.8	0.8	1.7
Total defective kernels, %	4.7	9.1	15.5	41.3	4.9	11.2	21.0	4.4	6.7
Other colour maize kernels, %	0.1	0.4	0.7	0.0	0.1	0.3	0.6	0.4	0.2
Foreign matter, %	0.1	0.2	0.2	0.2	0.1	0.2	0.2	4.1	0.1
Combined deviation, %	4.9	9.7	16.4	41.4	5.0	11.7	21.8	8.9	7.1
Pinked maize kernels, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious seeds	0	0	0	0	0	0	0	0	0
Physical Factors									
Hectolitre mass, kg/hl	78.1	77.8	76.9	76.0	76.9	76.0	75.6	72.9	77.4
100 Kernel mass, g	36.0	36.1	35.7	40.9	33.4	32.2	31.6	34.2	34.7
Stress cracks, %	4	4	3	4	5	5	2	18	4
Milling Index	92.4	90.1	85.8	90.0	90.0	86.1	82.0	101.2	90.3
Kernel Size									
% on top 10 mm	25.8	26.1	31.4	47.0	14.5	14.0	9.3	11.0	21.1
% on top 8 mm	63.3	62.1	56.4	49.5	68.9	67.4	70.8	79.9	65.1
% through 8 mm	10.8	11.8	12.2	3.5	16.7	18.5	19.9	9.1	13.7
Breakage susceptibility, g									
Below 6.35 mm sieve	1.4	1.8	2.0	2.7	2.0	2.4	2.7	3.0	1.8
Below 4.75 mm sieve	1.1	1.4	1.5	2.0	1.5	1.8	1.9	1.8	1.4
Nutritional Values									
Protein, %	8.4	8.3	8.3	9.7	8.2	7.9	8.5	8.5	8.3
Fat, % (db)	4.3	4.2	4.0	3.5	3.8	3.8	3.6	3.8	4.0
Starch, % (db)	72.5	72.8	73.0	72.9	73.3	73.6	73.9	72.0	72.9
Number of samples	***307***	***126***	***24***	***1***	***238***	***97***	***6***	***1***	***800***
Mycotoxins									
Total Aflatoxin, µg/kg (ppb) [max. value]	0 [0]	0 [0]	0 [0]	-	0 [0]	0 [0]	0 [0]	-	0 [0]
Total Fumonisin, µg/kg (ppb) [max. value]	187 [1 629]	396 [4 035]	711 [2 405]	-	92 [690]	384 [1 563]	0 [0]	-	251 [4 035]
Deoxynivalenol, µg/kg (ppb) [max. value]	230 [624]	324 [1 845]	241 [444]	-	100 [440]	109 [199]	42 [42]	-	206 [1 845]
Ochratoxin A, µg/kg (ppb) [max. value]	0 [0]	0 [0]	0 [0]	-	0 [0]	0 [0]	0 [0]	-	0 [0]
Zearalenone, µg/kg (ppb) [max. value]	0 [0]	0 [0]	0 [0]	-	0 [0]	0 [0]	0 [0]	-	0 [0]
T - 2 Toxin, µg/kg (ppb) [max. value]	0 [0]	0 [0]	0 [0]	-	0 [0]	0 [0]	0 [0]	-	0 [0]
Number of samples	***37***	***18***	***5***	***0***	***21***	***8***	***1***	***0***	***90***
GMO									
MON810, % Samples positive (> LOD of 0.15 %)	92	100	100	-	95	75	100	-	96
NK603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	59	56	80	-	67	50	100	-	61
Number of samples	***37***	***18***	***5***	***0***	***21***	***8***	***1***	***-***	***90***

Note: Non detective results are reported as 0, see LOD.

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality 2008/2009

Country of origin	ARGENTINA	RSA Crop Average
Class and grade yellow maize	**YM2**	**YM2**
RSA Grading		
Defective kernels above 6.35 mm sieve, %	2.8	4.9
Defective kernels below 6.35 mm sieve, %	7.0	3.7
Total defective kernels, %	9.8	8.6
Other colour maize kernels, %	0.0	0.5
Foreign matter, %	0.1	0.2
Combined deviation, %	9.9	9.4
Pinked maize kernels, %	0.0	0.0
Noxious seeds	0	0
Physical Factors		
Hectolitre mass, kg/hl	76.2	75.4
100 Kernel mass, g	28.2	30.7
Stress cracks, %	49	6
Milling Index	105.5	87.8
Kernel Size		
% on top 10 mm	4.2	12.2
% on top 8 mm	61.2	67.3
% through 8 mm	34.6	20.6
Breakage susceptibility, g		
Below 6.35 mm sieve	6.5	2.2
Below 4.8 mm sieve	4.3	1.6
Nutritional Factors		
Protein, %	8.6	8.0
Fat, % (db)	4.2	3.6
Starch, % (db)	73.3	73.4
Number of samples	***4***	***25***
Mycotoxins		
Total Aflatoxin, ppb (ug/kg) [max. value]	0.00 [0.00]	0.00 [<2]
Fumonisin, ppm (mg/kg) [max. value]	0.80 [0.80]	1.48 [3.00]
Deoxynivalenol, ppm (mg/kg) [max. value]	<0.25 [<0.25]	0.28 [0.50]
Ochratoxin A, ppb (ug/kg) [max. value]	0.00 [0.00]	0.00 [0.00]
Zearalenone, ppm (mg/kg) [max. value]	0.00 [0.00]	0.00 [0.00]
Number of samples	***1***	***3***
GMO		
MON810, % Samples positive (> LOD of 0.15 %)	<0.15 [<0.15]	>2 [>2]
NK603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	0.30 [0.30]	>1.8 [>1.8]
Number of samples	***1***	***3***

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality

2008/2009

Country of origin	BRAZIL		RSA Crop Average	
Class and grade yellow maize	**YM1**	**YM2**	**YM1**	**YM2**
RSA Grading				
Defective kernels above 6.35 mm sieve, %	2.8	2.1	2.0	4.9
Defective kernels below 6.35 mm sieve, %	3.6	5.2	1.8	3.7
Total defective kernels, %	6.3	7.3	3.9	8.6
Other colour maize kernels, %	0.0	0.0	0.1	0.5
Foreign matter, %	0.1	0.1	0.1	0.2
Combined deviation, %	6.4	7.4	4.1	9.4
Pinked maize kernels, %	0.0	0.0	0.0	0.0
Noxious seeds	0	0	0	0
Physical Factors				
Hectolitre mass, kg/hl	77.1	77.1	76.7	75.4
100 Kernel mass, g	31.0	31.1	33.1	30.7
Stress cracks, %	15	15	6	6
Milling Index	104.8	103.3	93.7	87.8
Kernel Size				
% on top 10 mm	5.8	5.7	16.0	12.2
% on top 8 mm	72.4	71.8	66.5	67.3
% through 8 mm	21.5	22.5	17.5	20.6
Breakage susceptibility, g				
Below 6.35 mm sieve	2.1	1.5	1.8	2.2
Below 4.8 mm sieve	1.4	1.0	1.2	1.6
Nutritional Factors				
Protein, %	8.1	8.1	8.2	8.0
Fat, % (db)	4.7	4.6	3.6	3.6
Starch, % (db)	74.0	72.1	73.1	73.4
Number of samples	***2***	***1***	***297***	***25***
Mycotoxins				
Total Aflatoxin, ppb (ug/kg) [max. value]	0.00 [0.00]		0.00 [<2]	0.00 [<2]
Fumonisin, ppm (mg/kg) [max. value]	1.90 [1.90]		0.25 [1.90]	1.48 [3.00]
Deoxynivalenol, ppm (mg/kg) [max. value]	0.00 [0.00]		0.36 [2.40]	0.28 [0.50]
Ochratoxin A, ppb (ug/kg) [max. value]	0.00 [0.00]		0.09 [1.00]	0.00 [0.00]
Zearalenone, ppm (mg/kg) [max. value]	0.00 [0.00]		0.01 [0.16]	0.00 [0.00]
Number of samples	***1***		***33***	***3***
GMO				
MON810, % Samples positive (> LOD of 0.15 %)	>2 [>2]		1.77 [>2]	>2 [>2]
NK603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	<0.25 [<0.25]		1.31 [>1.8]	>1.8 [>1.8]
Number of samples	***1***		***33***	***3***

Accuracy Awards

SAGL participates in several international proficiency schemes including AACC International, BIPEA and FAPAS, as part of our quality assurance procedures to demonstrate technical competency. SAGL has received the 2009 AACC International Accuracy Award for Feed Analysis (also received in 2004) as well as the AACC International Accuracy Award for Mixograph analysis (also received in 2006, 2007 and 2008).

AACC INTERNATIONAL

ACCURACY AWARD

Operation of the Mixograph

South African Grain Laboratory, Pretoria, South Africa

Is awarded this certificate for achieving the most accurate and precise results among Series J Check Sample Subscribers for 2009

Moisture, Peak Height, Peak Time
8-Minute Height, Descending Slope

Executive Vice President — *July 23, 2010* — President

AACC INTERNATIONAL Founded 1915

OUTSTANDING QUALITY

AACC INTERNATIONAL

ACCURACY AWARD

Feed Analysis

South African Grain Laboratory, Pretoria, Republic of South Africa

Is awarded this certificate for achieving the most accurate and precise results among Series D Check Sample Subscribers for 2009

Moisture, Protein, Ash, Crude Fat, Crude Fiber

Executive Vice President — *September 7, 2010* — President

AACC INTERNATIONAL Founded 1915

OUTSTANDING QUALITY

sanas
South African National Accreditation System

CERTIFICATE OF ACCREDITATION

In terms of section 22(2)(b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-

SOUTHERN AFRICAN GRAIN LABORATORY
Co. reg no: 1997/018518/08

Facility Accreditation Number: **T0116**

is a South African National Accreditation System accredited Testing laboratory provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying schedule of accreditation, Annexure "A", bearing the above accreditation number for

CHEMICAL & PHYSICAL ANALYSIS

The facility is accredited in accordance with the recognised International Standard

ISO/I EC 17025:2005

The accreditation demonstrates technical competency for a defined scope and the operation of a laboratory quality management system

While this certificate remains valid, the Accredited Facility named above is authorised to use the relevant SANAS accreditation symbol to issue facility reports and/or certificates

Mr R Josias
Chief Executive Officer

Effective Date: 01 November 2009
Certificate Expires: 31 October 2014

ANNEXURE A

SCHEDULE OF ACCREDITATION

Testing Laboratory Number: T0116

Permanent Address of Laboratory: Southern African Grain Laboratory Grain Building 477 Witherite Road The Willows 0040	**Technical Signatories** : Ms J Nortjé (All) : Ms M Hammes (Chemical) : Ms M E Vorster (Physical) : Mr B van der Linde (Grading) : Ms A de Jager (Vitamins & Minerals) : Mrs M Henning (In House Method 11) : Ms H Schoeman (In House Method 24)
Postal Address: PostNet Suite # 391 Private Bag X 1 The Willows 0041	**Nominated Representative** : Mrs S du Preez **Management Representative** : Mrs W Louw
Tel : (012) 807-4019 Fax : (012) 807-4160 E-mail : info@sagl.co.za	Issue No. : 15 Date of issue : 17 February 2011 Expiry date : 31 October 2014

Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used
CHEMICAL		
Ground barley	Moisture (Oven method)	Analytical EBC 3.2, 1997
Ground grains, semolina and flour	Moisture (Oven method)	ICC No 110/1, 1976
Whole and milled maize and soya beans	Moisture (Oven method)	AACC 44-15.02, 1999
All flours, cereal grains, oil seeds and animal feeds	Nitrogen and protein (Combustion method)	AACC 46-30.01, 1999
Food stuffs	Dietary fibre (total)	In-House Method 12
Food Stuff and Feeds	Carbohydrates (by difference) (calculation) Energy Value (calculation) Total Digestible Nutritional Value (calculation)	SOP MC 23
Food Stuffs and Feeds, Semolina and Milled Pasta	Determination of Ash	In-House Method 11
Wheat Kernels	Moisture (oven method)	Wheat Grading Regulation No. R905 including amendments
Flours of grains, e.g. barley, triticale, maize, rye, sorghum and wheat, oilseeds, feeds, mixed feeds and foodstuffs	Crude fat (Ether extraction by Soxhlet)	In-House Method 24

Original date of accreditation: 01 November 1999

Field Manager

ANNEXURE A

Laboratory No: T0116
Date of issue: 17 February 2011
Expiry date: 31 October 2014

Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/ Techniques Used
VITAMINS & MINERALS		
Grain based vitamin-fortified food and feed products and fortification mixes	Vitamin A as all trans Retinol (Saponification)	In-House Method 1
	Thiamine Mononitrate	In-House Method 2
	Riboflavin (Vitamin B2)	In-House Method 2
	Nicotinamide	In-House Method 2
	Pyridoxine Hydrochloride	In-House Method 2
	Folic Acid	In-House Method 3
Grain based fortified food and feed products and fortification mixes	Iron and Zinc (total) by AA	In-House Method 10
GRADING		
Maize	Defective Kernels (white maize, yellow maize)	Government Gazette 32190 (08 May 2009) Regulation R.473 including amendments
Cereals as grain (Wheat, barley, rye and oats)	Hectolitre mass (Kern 222)	ISO 7971-3
Wheat	Screenings	Government Gazette No. 19036 (10 July 1998), Regulation No. R905 including amendments.
Meal and flour of wheat, rye, barley, other grains, starch containing and malted products	Falling Number	ICC No 107/1, 1995
PHYSICAL		
Wheat flour	Alveograph (Rheological properties)	ICC No 121, 1992
Wheat Flour and brown bread flour	Farinograph (Rheological properties)	AACC 54-21.01, 1999 – Constant Flour Weight Procedure
Wheat flour and whole wheat flour of hard/soft/durum wheat	Mixograph (Rheological properties)	Industry Accepted Method 020 (Based on AACC 54-40.02,1999)

Original date of accreditation: 01 November 1999

ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

Field Manager

GOVERNMENT NOTICES
GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF AGRICULTURE
DEPARTEMENT VAN LANDBOU

No. R. 473 **8 May 2009**

AGRICULTURAL PRODUCT STANDARDS ACT, 1990
(ACT No. 119 OF 1990)

REGULATIONS RELATING TO THE GRADING, PACKING AND MARKING OF MAIZE INTENDED FOR SALE IN THE REPUBLIC OF SOUTH AFRICA

The Minister of Agriculture, acting under section 15 of the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990),

(a) made the regulations in the Schedule; and

(b) determined that the said regulations shall come into operation on date of publication.

SCHEDULE

Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act shall have that meaning and, unless the context otherwise indicates -

"**bag**" means a bag manufactured from -

(a) jute or phormium or a mixture of jute and phormium; or

(b) polypropylene that complies with SABS specification CKS632;

"**bulk container**" means any vehicle or container in which bulk maize is stored or transported-

"**consignment**" means -

(a) a quantity of maize of the same class, which belongs to the same owner, delivered at any one time under cover of the same consignment note, delivery note or receipt note, or delivered by the same vehicle or bulk container, or loaded from the same bin of a grain elevator or from a ship's hold; or

(b) in the case where a quantity referred to in paragraph (a), is subdivided into different grades, each such quantity of each of the different grades;

"**coffee stained maize kernels**" means maize kernels with a shiny brown colour that occurs anywhere on the pericarp of the maize kernel;

"**container**" means a bag or a bulk container;

"**defective maize kernels**" means maize kernels and pieces of maize kernels-

(a) that are shrivelled, obviously immature, frost-damaged, heat damaged, water damaged, mouldy or chalky;

(b) that are discoloured by external factors such as water and sun: Provided that discoloration on both sides of the maize kernel limited to less than a quarter from the bottom tip of the maize kernel shall not be considered as defective; oxidation stained maize kernels; coffee stained maize kernels; and pinked maize kernels shall not be considered as defective;

(c) that have sprouted, including kernels of which the shoot (plumule) in the germ is visibly discoloured;

(d) that have cavities in the germ or endosperm caused by insects or rodents;

(e) that are visibly soiled (smeared) or contaminated by smut, fire, soil, smoke or coal-dust;

(f) all matter that can pass through the 6,35 mm round-hole sieve; and

(g) that are of subspecies other than *Zea mays indentata* or *Zea mays indurata*.

Provided that:

(i) irregularity of shape and size of maize kernels shall not affect the grading thereof;

(ii) chipped or cracked maize kernels or pieces of maize kernels which are in a sound condition and which appear in a sample of maize, but which do not pass through a 6,35 mm round-hole sieve, shall not be regarded as defective maize kernels under these regulations;

"**discoloured maize kernels**" means maize kernels that are as a result of environmental conditions more than 25% discoloured on both sides of the kernel, excluding coffee stained maize kernels, oxidation stained maize kernels and pinked maize kernels;

"**foreign matter**" means all matter above the sieve other than maize, glass, stone, coal, dung or metal;

"**frost damaged**" means maize kernels that are covered with wrinkles on both sides of the kernel to the crown and have a pearl-like appearance. Maize kernels of which the bran is flaking is considered frost damaged if signs of frost damage are present;

"**heat damaged**" means kernels that are as a result of external heat or internal fermentation affected with excess moisture and have at least one of the following characteristics:

(a) Kernels or pieces of kernels that are amber, brown, dark-brown or black discoloured;

(b) Kernels of which the germ has dark-brown to black discoloration;

"**insect**" in relation to maize, means any live insect which is injurious to stored grain, irrespective of the stage of development of the insect;

"**maize**" means the threshed kernels or pieces of kernels of the plants of *Zea mays indurata* and *Zea mays indentata* or one or more crossings of the two types;

"**mouldy**" means kernels or pieces of kernels that-

(a) are visibly infected by fungi and are characterised by black, blue, green, yellow or white fungi growth anywhere on the kernel, or are characterised by fungi growth underneath the bran layer of the kernel;

(b) are infected by ear-rot and are characterised by red, pink or brown discolorations. The kernels are partially to completely infected;

"**other colour maize kernels**" in relation to -

(a) white maize, means maize kernels or pieces of maize kernels of which the endosperm as a result of genetic (characteristics) composition have another colour than white, excluding pinked maize kernels;

(b) yellow maize, means maize kernels or pieces of maize kernels of which the endosperm as a result of genetic (characteristics) composition have another colour than yellow;

"**oxidation stained maize kernels**" means maize kernels with a shiny light brown colour that are discoloured from the crown and not from the tip cap;

"**pinked maize kernels** "means kernels and pieces of kernels of white maize of which the pericarp or part thereof is shaded red or pink in colour;

"**poisonous seeds**" means seeds or part of seeds of plant species that may in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972) represent a hazard to human or animal health when consumed, including seeds of *Argemone mexicana, Convolvulus* spp., *Crotalaria* spp., *Datura* spp., *Ipomoea* spp. *Lolium temulentum, Ricinus communis* or *Xanthium* spp;

"**shrivelled or obviously immature maize kernels**" means maize kernels with a thin and shrunken appearance;

"**sprouted maize kernels**" means maize kernels which have sprouted so far that developing roots and/or sprouts are clearly visible, or the shoot (plumule) in the germ is visibly discoloured;

"**the Act**" means the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990);

"**the 6,35 mm round-hole sieve**"means a sieve-

(a) with a flat metal sheet bottom of 1,0 mm thickness perforated with round holes of 6,35 mm (± 0,05 mm) in diameter that are arranged with the centres of the holes at the points of intersection of an equilateral triangular grid with a pitch of 8 mm;

(b) of which the upper surface of the bottom is smooth;

(c) the frame of which is at least 40 mm high;

(d) with the inner width of at least 200 mm and the inner length of at least 300 mm, or, in the case of a circular sieve, the inner diameter of at least 278 mm;

(e) with a minimum area of 600cm^2 and a maximum of 750cm^2; and

(f) that fits onto a tray with a solid bottom and must be at least 20mm above the bottom of the tray; and

"**water damaged maize kernels**" means maize kernels with a light yellow shine from the tip cap in a band around the maize kernel.

Scope of regulations

2. These regulations are the minimum standards applicable to maize that are destined for sale in the Republic of South Africa but does not include –

(a) maize in retail quantities; and

(b) maize for seed production purposes.

Restrictions on sale of maize

3. (1) No person shall sell maize in the Republic of South Africa -

(a) unless the maize is sold according to the classes set out in regulation 4;

(b) unless the maize complies with the standards for the class concerned set out in regulation 5;

(c) unless the maize complies with the grades of maize and the standards for grades, where applicable, set out in regulations 6 and 7 respectively;

(d) unless the maize is packed in accordance with the packing requirements set out in regulation 8;

(e) unless the containers or sale documents, as the case may be, are marked in accordance with the marking requirements set out in regulation 9; and

(f) if such maize contains a substance that renders it unfit for human consumption or for processing into or utilisation thereof as food or feed.

(2) The Executive Officer may grant written exemption, entirely or partially to any person on such conditions as he or she may deem necessary, from the provisions of subregulation 1: Provided that such exemption is done in terms of section 3 (1) (c) of the Act.

PART I
QUALITY STANDARDS

Classes of maize

4. The classes of Maize shall be -

(a) Class White Maize;

(b) Class Yellow Maize; and

(c) Class Other Maize.

Standards for classes of maize

5. (1) A consignment of maize shall be classified as Class White Maize if -

(a) subject to the allowable deviation in respect of other colour maize kernels that apply to the different grades of white maize, it consists of maize the endosperm of which is by nature white in colour; and

(b) it complies with the standards for one of the grades of white maize set out in regulation 7.

(2) A consignment of maize shall be classified as Class Yellow Maize if -

(a) subject to the allowable deviation in respect of other colour maize kernels that apply to the different grades of yellow maize, it consists of maize the endosperm of which is by nature yellow in colour; and

(b) it complies with the standards for one of the grades of yellow maize set out in regulation 7.

(3) A consignment of maize shall be classified as Class Other Maize if the consignment does not comply with the standards for Class White Maize or Class Yellow Maize.

Grades of maize

6. (1) Maize of the Class White Maize shall be graded as WM1, WM2 or WM3.

(2) Maize of the Class Yellow Maize shall be graded as YM1, YM2 or YM3.

(3) No grades are determined for Class Other Maize.

Standards for grades of Class White Maize and Class Yellow Maize

7. All grades of maize -

(a) shall be free from a musty, sour or other undesired odour;

(b) shall be free from glass, metal, coal or dung;

(c) shall be free from a substance which renders it unfit for human consumption or for processing into or utilisation thereof as food or feed;

(d) shall be free from insects;

(e) shall be free from stones which cannot pass through the 6,35 mm round-hole sieve;

(f) shall contain not more than one gram of stones, which can pass through the 6,35 mm round-hole sieve, per 10 kg;

(g) shall contain not more poisonous seeds than permitted in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972);

(h) shall have a moisture content of not more than 14 per cent; and

(i) shall not exceed the maximum percentage of permissible deviation as determined in the table in the Annexure for each grade.

PART II
PACKING AND MARKING REQUIREMENTS

Packing requirements

8. Maize of different classes and grades shall be packed in different containers.

Marking requirements

9. Each container or the accompanying sales document of a consignment of maize shall be marked or endorsed with -

(a) the class of the maize;

(b) the grade, in the case of Class White Maize or Class Yellow Maize; and

PART III
SAMPLING

Obtaining sample

10. (1) A sample of a consignment of maize shall -

(a) in the case of maize delivered in bags and subject to regulation 11, be obtained by sampling at least ten per cent of the bags, chosen from that consignment at random, with a bag probe: Provided that at least 25 bags in a consignment shall be sampled and where a consignment consists of less than 25 bags, all the bags in that consignment shall be sampled; and

(b) in the case of maize delivered in bulk and subject to regulation 10, be obtained by sampling that consignment throughout the whole depth of the layer, in at least six different places, chosen at random in that bulk quantity, with a bulk sampling apparatus.

(2) The collective sample obtained in subregulation (1) (a) or (b) shall -

(a) have a total mass of at least 10 kg; and

(b) be thoroughly mixed by means of dividing before further examination.

(3) If it is suspected that the sample referred to in subregulation (1)(a) is not representative of that consignment, an additional five per cent of the remaining bags, chosen from that consignment
at random, shall be emptied into a suitable bulk container and sampled in the manner contemplated in subregulation (1)(b).

(4) A sample taken in terms of these regulations shall be deemed representative of the consignment from which it was taken.

Sampling if contents differ

11. (1) If, after an examination of the maize taken from different bags in a consignment in terms of regulation 10(1), it appears that the contents of those bags differ substantially -

(a) the bags concerned shall be placed separately;

(b) all the bags in the consignment concerned shall be sampled in order to do such separation; and

(c) each group of bags with similar contents in that consignment shall for the purposes of these regulations be deemed to be a separate consignment.

(2) If, after the discharge of a consignment of maize in bulk has commenced, it is suspected that the consignment could be of a class or grade other than that determined by means of the initial sampling, the discharge shall immediately be stopped and the part of the consignment remaining in the bulk container, as well as the grain that is already in the collecting tray, shall be sampled anew with a bulk sampling apparatus or by catching at least 20 samples at regular intervals throughout the whole offloading period with a suitable container from the stream of grain that is flowing in bulk.

Working sample

12. A working sample shall be obtained by dividing the representative sample of the consignment according to the ICC 101/1 method.

PART IV
DETERMINATION OF OTHER SUBSTANCES

Determination of undesirable odours and harmful substances

13. A sample of a consignment of maize shall be sensorial assessed or chemically analysed in order to determine -

(a) whether it has a musty, sour or other undesirable odour: Provided that a working sample of unscreened maize that is ground in a grain mill to a fine meal may be used for the determination concerned; and

(b) whether it contains a substance that renders the maize unfit for human consumption or for processing into or for utilisation as food or feed.

Determination of glass, metal, coal, dung, stone, poisonous seed and insect content

14. A consignment of maize shall be sensorial assessed and a sample of that consignment shall be sensorial assessed and sorted by hand in order to determine whether the sample contains glass, metal, coal, dung, insects, stones and poisonous seeds.

Determination of percentage of foreign matter

15. The percentage of foreign matter in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Remove all foreign matter from the working sample and determine the mass thereof.

(c) Express the mass thus determined as a percentage of the total mass of the working sample.

(d) Such percentage shall represent the percentage of foreign matter in the consignment concerned.

PART V
MAIZE KERNELS

Determination of percentage of defective maize kernels

16. The percentage of defective maize kernels in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Place the working sample on the 6, 35 mm round-hole sieve and screen the sample by moving the sieve 20 strokes to and fro, alternately away from and towards the operator of the sieve. Move the sieve, which rests on a table or other suitable smooth surface, 250 mm to 460 mm away from and towards the operator with each stroke. The prescribed 20 strokes must be completed within 20 to 30 seconds.

(c) Determine the mass of the matter that has passed through the sieve and express it as a percentage of the mass of the working sample.

(d) Remove all defective maize kernels from that part of the working sample remaining on the sieve and determine the mass thereof.

(e) Express the mass as a percentage of the mass of the working sample.

(f) Calculate the sum of the masses determined in terms of paragraphs (c) and (d).

(g) Express the combined mass calculated in terms of paragraph (f) as a percentage of the mass of the working sample.

(h) In the case of yellow maize the percentage obtained -

(i) in terms of paragraph (c), represents the percentage of defective maize kernels in the consignment concerned, which can pass through the 6,35 mm round-hole sieve; and

(ii) in terms of paragraph (e), represents the percentage of defective maize kernels in the consignment concerned, which can not pass through the 6,35 mm round-hole sieve.

(i) In the case of white maize, the percentage obtained in terms of paragraph (g) represents the percentage of defective maize kernels in the consignment concerned.

Determination of percentage of other colour maize kernels

17. The percentage of other colour maize kernels in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Remove all other colour maize kernels from the working sample and determine the mass thereof.

(c) Express the mass thus determined as a percentage of the mass of the working sample.

(d) Such percentage shall represent the percentage of other colour maize kernels in the consignment concerned.

Determination of percentage of pinked maize kernels

18. The percentage of pinked maize kernels in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Remove all pinked maize kernels from the working sample and determines the mass thereof.

(c) Express the mass thus determined as a percentage of the mass of the working sample.

(d) Such percentage shall represent the percentage of pinked maize kernels in the consignment concerned.

PART VI
MOISTURE CONTENT

Determination of moisture content

19. The moisture content of a consignment of maize may be determined according to any suitable method: Provided that the results thus obtained are in accordance with the maximum permissible deviation for a class 1 moisture meter as detailed in ISO 7700/1based on the results of the 72 hour, 103°C oven dried method (AACC Method 44-15A).

OFFENCE AND PENALTIES

20. Any person who contravenes or fails to comply with any provision of these regulations shall be guilty of an offence and upon conviction be liable to a fine or imprisonment in terms of section 11 of the Act.

ANNEXURE/AANHANGSEL
TABLE/TABEL

STANDARDS FOR GRADES OF CLASS WHITE MAIZE AND CLASS YELLOW MAIZE/
STANDAARDE VIR GRADE VAN KLAS WITMIELIES EN KLAS GEELMIELIES

	Maximum permissible deviation/ Maksimum toelaatbare afwyking					
Deviation/Afwyking	White maize/ Witmielies			Yellow maize/ Geelmielies		
	WM1	WM 2	WM 3	YM1	YM2	YM3
1	2	3	4	5	6	7
1. Foreign matter [regulation 15]/ Vreemde voorwerpe [regulasie 15]	0,3%	0,5%	0,75 %	0,3%	0,5%	0,75%
2. Defective maize kernels, above and below the 6,35 mm round-hole sieve [regulations 16]/ *Gebrekkige mieliepitte, bo en onder die 6,35 mm-rondegatsif [regulasies 16]*	7%	13%	30%	*	*	*
3. Defective maize kernels that can pass through the 6,35 mm round-hole sieve [regulation 16(c)]/ *Gebrekkige mieliepitte wat deur die 6,35 mm rondegastsif kan gaan [regulasie 16(c)]*	*	*	*	4%	10%	30%
4. Defective maize kernels that can not pass through the 6,35 mm round-hole sieve [regulation 16(e)]/ *Gebrekkige mieliepitte wat nie deur die 6,35 mm-rondegatsif kan gaan nie [regulasie 16(e)]*	*	*	*	9%	20%	30%
5. Other colour maize kernels [regulation 17]/ *Mieliepitte van 'n ander kleur [regulasie 17]*	3%	6%	10%	2%	5%	5%
6. Deviations referred to in items 1, 3, 4 and 5 individually within the specified limits/ *Afwykings in items 1, 3, 4 en 5 bedoel,gesamentlik: met dien verstande dat die afwykings individueel binne die gespesifisserde perke is*	8%	16%	30%	9%	20%	30%
7. Pinked maize kernels [regulation 18]/ *Verrooide mieliepitte [regulasie 18]*	12%	12%	12%	*	*	*

* Not specified/Nie gespesifiseer nie.