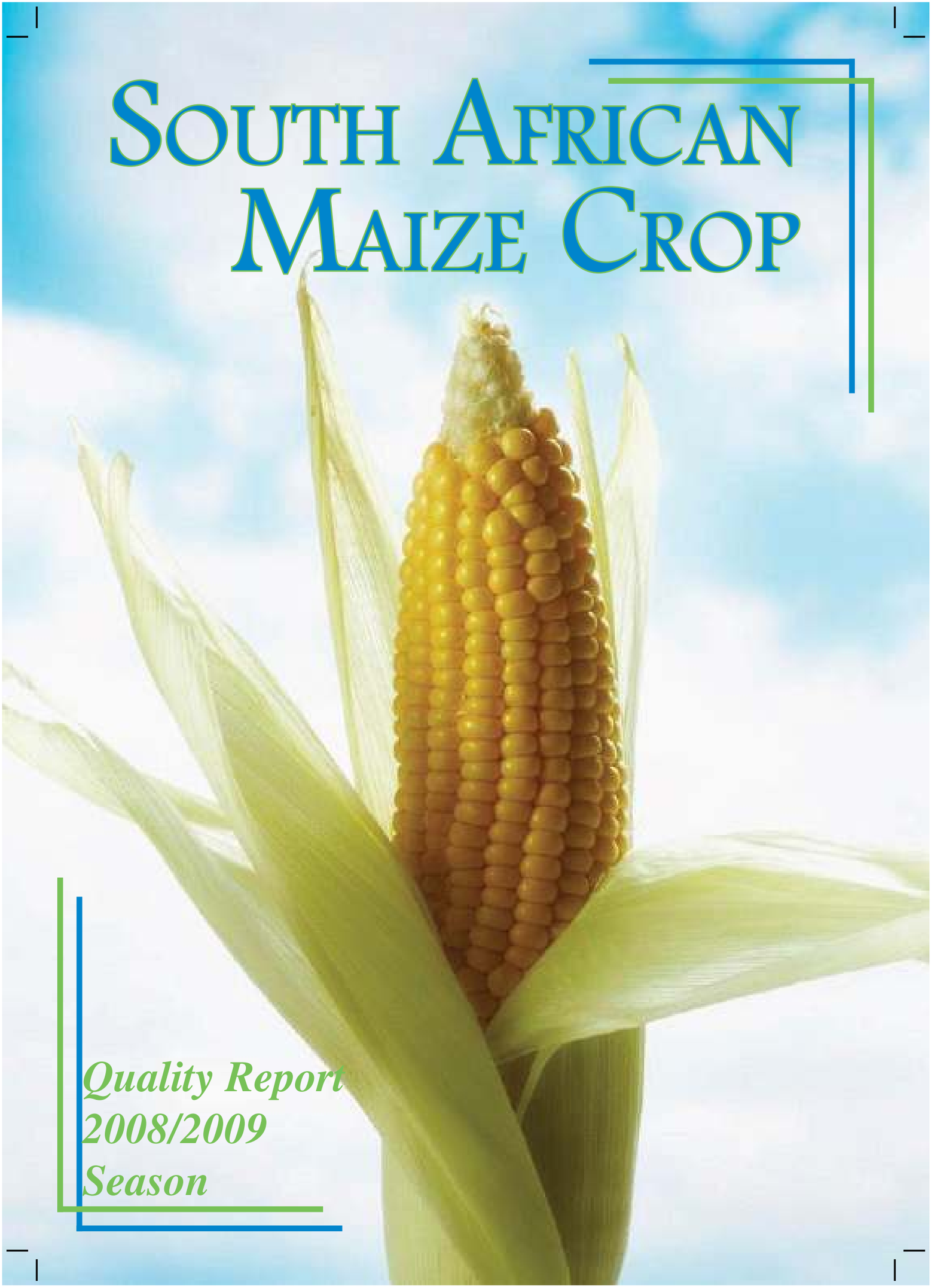
South African Maize Crop



Quality Report
2008/2009
Season

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SOUTH AFRICAN
COMMERCIAL MAIZE QUALITY
2008/2009

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1. Introduction

The calculated final commercial crop figure for maize for the 2008/2009 season by the National Crop Estimates Committee was 12 050 000 tons. This is 5 % less than the previous season's 12 700 000 tons. The major maize-producing region was the Free State (4 421 250 tons), followed by Mpumalanga (2 783 400 tons) and the North West (2 529 000 tons). White maize contributed 56 % to the total production, which is 3 % less than the previous season.

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

810 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 46 - 50.

The 810 samples analysed consisted of 483 white maize samples and 327 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 483 white maize samples analysed, 91 % were WM1, 7 % WM2, 1 % WM3 and 1 % graded Class Other Maize (COM). Of the 327 yellow maize samples analysed, 91 % were YM1, 7 % YM2, 1 % YM3 and 1 % COM. Most of the samples were downgraded due to the % defective kernels. Only a few samples were downgraded as a result of the % foreign matter and % other colour. The white and yellow maize graded similarly with regards to the sample percentage per grade.

The average percentage total deviation of 4.6 is 1.6 % lower than the weighted average (6.2 %) of the past ten seasons.

2.2 USA Grading

Of the 810 maize samples, 75 % were graded US1, 17 % US2, 4 % US3, 2 % US4, 1 % US5, 0.5 % mixed grade and 0.5 % sample grade, according to USA grading regulations. The samples were downgraded mostly because of the % total damaged kernels.

2.3 Nutritional Values

The average fat content of all samples was 3.8 %, average protein 8.3 % and average starch content 72.7 %. The average fat content is 0.2 % lower 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 72.7 % is 1 % higher than the ten year average.

Yellow maize had a lower fat content (3.6 %) than white maize (4.0 %) which is exactly the same as the previous season. The starch content in yellow maize averaged 73.2 % and was higher than in white maize (72.4 %). The average protein content in white maize was 8.3 % and in yellow maize 8.2 %.

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

The nutritional components, fat, starch and protein were reported as % 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 77.6 kg/hl compared to the 76.6 kg/hl of yellow maize. The hectolitre mass varied from 61.6 kg/hl to 82.2 kg/hl. Only 2 % of the samples were below the minimum requirement for USA grade 1 maize of 72.1 kg/hl.

The 100 kernel mass averaged 34.2 g (higher than the previous three seasons). The 100 kernel mass of the yellow maize averaged 32.9 g and 35.1 g in white maize.

Yellow maize kernels were smaller on average than white kernels as observed in Tables 12 and 13. The breakage susceptibility is similar to the previous seasons. The % stress cracks varied from 0 – 50 %, averaged 5 % and compared well with previous seasons.
The milling index varied from 68.6 to 115.4 and averaged 93.6. The average milling index for yellow and white maize is similar to each other.

2.5 Roff milling and whiteness index(WI)

The average % extraction of total meal with the Roff mill averaged 78.6 % and varied from 70.0 % to 84.9 % in white maize. These values are a little lower than the previous season (2007/2008) which had an average of 79.6 %, a minimum of 71.8 % and maximum of 85.5 %.

The whiteness index 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.

The higher the WI value, the whiter the meal. The main contributing factors causing lower WI values are cultivar and the presence of another colour maize like yellow maize. The sample with the lowest WI value of 16.2 (unsifted) and 3.7 (sifted) had a presence of 4.6 % other colour maize and graded WM2.

The whiteness index of the previous season averaged 27.9 and varied from 19.6 to 41.7 for unsifted maize meal. Sifted maize meal averaged 19.1, with a minimum of 8.5 and maximum of 37.4.

2.6 Mycotoxins

The percentage Fusarium infected kernels ranged from 0 to 5.8 % and averaged 0.6 %. The percentage Diplodia infected kernels ranged from 0 to 1.6 % and averaged 0.1 %.

The average mycotoxin levels were more or less the same than in previous seasons. The Fumonisin and Deoxynivalenol levels dominated the other toxin levels like previous seasons. The Fumonisin level averaged 0.5 ppm and ranged from 0 to 3.3 ppm. The Deoxynivalenol level averaged 0.4 ppm and ranged from 0 to 2.9 ppm. No Aflatoxin was found in the samples. Low levels of Ochratoxin and Zearalenone were found in a few 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-one 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 %. Ninety 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 were as follow:
a) The Free State contributed 38 % of which 59 % was white maize and 41 % yellow maize.
b) Mpumalanga contributed 24 % of which 46 % was white maize and 54 % yellow maize.
c) North West contributed 22 % of which 80 % was white maize and 20 % yellow maize.

These contributions of the three main production areas make 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 5 - 8).

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 4.4 %. North West averaged 4.9 % and Mpumalanga 4.5 %.

The maize produced in the Free State averaged a hectolitre mass of 77.1 kg/hl, North West 77.5 kg/hl and Mpumalanga 77.4 kg/hl.

North West gave the highest average protein of 8.4 %, followed by Free State with 8.2 % and Mpumalanga with 8.1 %. All three provinces gave an average fat content of between 3.8 % and 3.9 %. The starch content in these three production areas averaged between 72.6 % and 73.0 %.

The 100 kernel mass for the Free State averaged 33.5 g, North West 34.3 g and Mpumalanga 34.6 g.

The North West province had the "largest" kernel size with an average of 25.2 % of the maize having kernels > 10 mm. (Mpumalanga 20.6 % and the Free State 20.5 %.)

Stress cracks were the same for the Free State and Mpumalanga at 6 % and North West had 4 %.

The average milling index in the Free State was 92.7, in Mpumalanga 93.1 and 94.9 in North West.

The average percentage breakage susceptibility of maize kernels passing through the 6.35 mm sieve was very similar between the provinces with the Free State 1.7 %, North West 1.6 % and Mpumalanga 1.5 %.

The white maize from North West gave an average whiteness index of 30.3 (unsifted) and 21.1 (sifted). The Free State had an average of 29.4 (unsifted) and 20.2 (sifted) and Mpumalanga 29.3 (unsifted) and 20.6 (sifted).

The % extraction total meal with the Roff mill averaged 79.0 % in North West, 78.6 % in the Free State and 78.1 % in Mpumalanga.

4. Imported Maize (2007/2008)

Five imported maize samples were analysed. The maize was imported from Argentina. All of these samples were graded as 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 YM2 maize had an average hectolitre mass of 76.0 kg/hl. RSA YM2 maize had an average hectolitre mass of 75.0 kg/hl.

The imported maize had smaller kernels than the 2007/2008 and 2008/2009 local crop.

The average weighted fat, protein and starch contents of the imported maize were higher than the average of the RSA YM2 maize.

The mycotoxin and GMO analyses were done on a composite sample of the 5 imported samples received and compared with 2 randomly selected samples of the RSA YM2 maize samples.

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

The weighted average Fumonisin content of imported maize was 1.40 ppm (mg/kg). RSA maize in that same class and grade averaged 0.18 ppm (mg/kg).

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 non detective.

The imported maize tested negative for GMO-MON810 and positive for NK603(Roundup Ready) while the RSA maize tested positive for both.

The quality of the imported maize for the 2007/2008 season, compared to the average quality of the RSA maize of the same class and grade and season, are given on page 51.

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 2008/09 SEASON COMPARED TO THE 2007/08 SEASON

PROVINCES	FINAL ESTIMATE 2008/09			% difference between 2007/08 and 2008/09	FINAL ESTIMATE 2007/08		
	White Tons	Yellow Tons	Total Tons		White Tons	Yellow Tons	Total Tons
Western Cape	15 000	35 000	50 000	25	10 000	30 000	40 000
Northern Cape	28 750	576 000	604 750	-10	36 750	637000	673 750
Free State	2 627 250	1 794 000	4 421 250	-4	2 760 000	1 848 000	4 608 000
Eastern Cape	15 900	71 500	87 400	3	15 000	70 200	85 200
KwaZulu-Natal	248 000	264 600	512 600	5	237 800	252 000	489 800
Mpumalanga	1 290 000	1 493 400	2 783 400	1	1 447 200	1 300 000	2 747 200
Limpopo	171 600	72 000	243 600	11	164 000	56 000	220 000
Gauteng	358 800	150 000	508 800	-7	384 000	160 200	544 200
North West	2 016 000	513 000	2 529 000	-3	2 043 500	569 500	2 613 000
Total RSA	6 77 1300	4 969 500	11 740 800	-2	7 098 250	4 922 900	12 021 150
% of crop	58	42			59	41	
Figures obtained from the National Crop Estimates Committee							

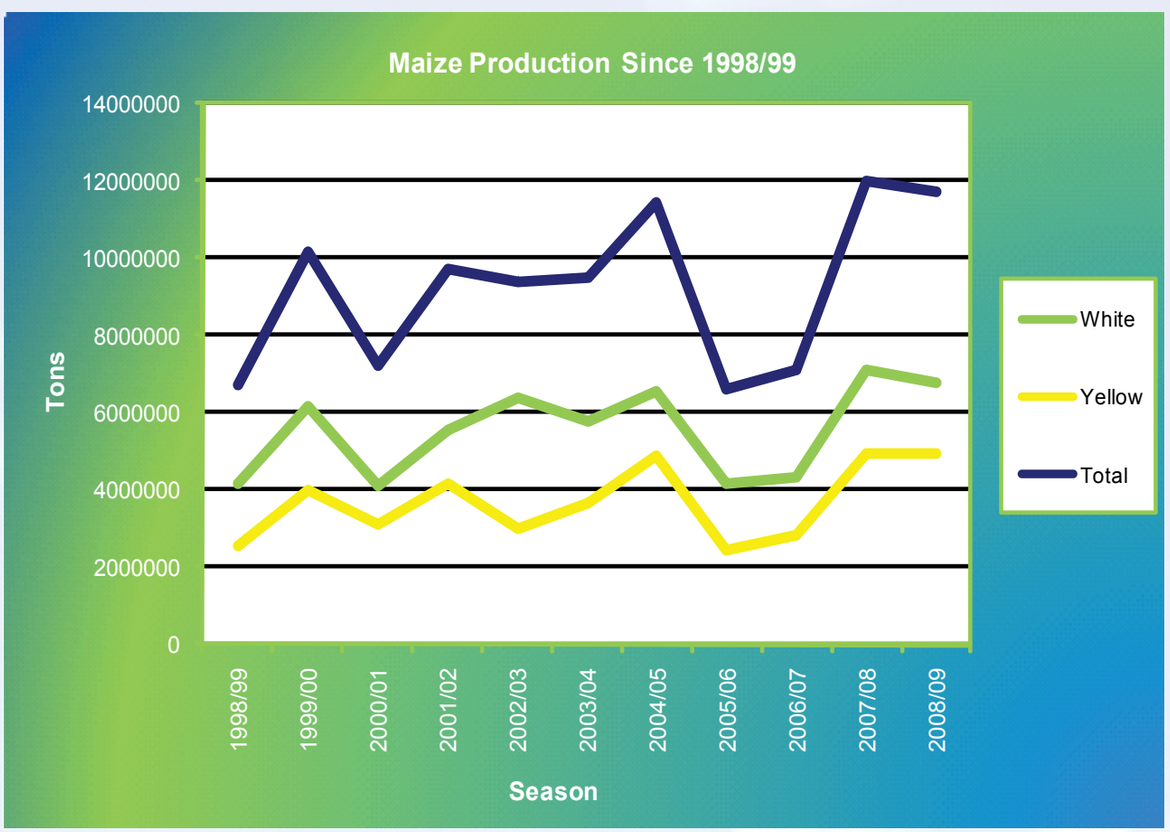


TABLE 2: RSA GRADING OF WHITE MAIZE (2008/2009)

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	1.8	1.8	1.8	0.1	0.1	0.1	1.9	1.9	1.9	0.0	0.0	0.0	0.5	0.5	0.5	2.3	2.3	2.3	0.0	0.0	0.0	0.2	0.2	0.2	0.6	0.6	0.6	0.2	0.2	0.2
13	Region 12	2.0	0.4	3.6	1.4	0.4	2.7	3.4	1.2	4.7	0.1	0.0	0.2	0.2	0.0	1.1	3.7	1.3	5.7	0.0	0.0	0.0	0.1	0.0	0.3	0.7	0.0	1.7	0.2	0.0	0.6
16	Region 13	2.9	2.2	4.7	1.0	0.4	1.6	3.9	2.7	6.2	0.1	0.1	0.3	0.3	0.0	1.4	4.3	2.8	7.8	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.0	1.2	0.3	0.0	0.7
35	Region 14	2.0	0.8	3.4	1.9	0.3	3.8	4.0	2.1	5.7	0.1	0.0	0.2	0.1	0.0	0.6	4.2	2.2	6.0	0.0	0.0	0.0	0.1	0.0	0.4	0.5	0.0	1.3	0.1	0.0	0.6
23	Region 15	1.9	1.1	2.6	1.8	1.2	2.6	3.7	2.9	4.6	0.2	0.1	0.3	0.1	0.0	0.5	3.9	3.0	4.8	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.8	0.0	0.0	0.2
38	Region 16	2.4	0.9	4.4	1.0	0.1	2.7	3.4	1.0	6.9	0.1	0.0	0.3	0.1	0.0	0.8	3.7	1.0	7.8	0.0	0.0	0.0	0.1	0.0	0.4	0.4	0.0	1.0	0.1	0.0	0.5
31	Region 17	2.5	1.0	4.0	2.0	0.7	4.8	4.4	2.1	6.4	0.2	0.1	0.3	0.1	0.0	0.4	4.7	2.5	6.9	0.0	0.0	0.4	0.2	0.0	0.7	0.6	0.0	1.1	0.1	0.0	0.5
10	Region 18	1.4	0.5	2.2	2.4	1.3	4.7	3.8	2.8	5.1	0.2	0.1	0.3	0.2	0.0	0.5	4.1	3.2	5.4	0.0	0.0	0.3	0.1	0.0	0.4	0.2	0.0	0.6	0.0	0.0	0.3
6	Region 19	3.4	2.9	4.0	1.4	0.9	2.0	4.8	4.0	6.0	0.2	0.1	0.3	0.3	0.0	0.7	5.4	4.5	6.9	0.0	0.0	0.0	0.3	0.2	0.4	0.7	0.5	1.1	0.1	0.0	0.3
15	Region 20	2.5	1.3	3.7	1.1	0.4	1.8	3.7	2.1	5.1	0.1	0.0	0.2	0.3	0.0	1.1	4.0	2.3	6.0	0.0	0.0	0.0	0.2	0.0	0.4	0.6	0.0	1.2	0.1	0.0	0.5
24	Region 21	2.4	1.1	4.6	1.6	0.9	2.9	4.1	2.3	6.7	0.2	0.1	0.3	0.2	0.0	0.7	4.4	2.5	7.4	0.0	0.0	0.4	0.2	0.0	0.5	0.7	0.0	1.4	0.1	0.0	0.4
19	Region 22	2.0	0.5	4.2	1.5	0.8	2.4	3.5	2.1	5.3	0.2	0.1	0.3	0.1	0.0	0.4	3.7	2.3	5.4	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.0	1.0	0.1	0.0	0.5
27	Region 23	1.5	0.9	2.7	1.6	1.0	3.1	3.1	1.9	4.8	0.2	0.1	0.2	0.1	0.0	0.4	3.4	2.0	4.9	0.0	0.0	0.0	0.1	0.0	0.5	0.2	0.0	0.6	0.1	0.0	0.4
16	Region 24	2.0	0.9	3.6	1.2	0.5	2.2	3.2	2.2	5.2	0.1	0.1	0.2	0.1	0.0	0.7	3.4	2.3	5.4	0.0	0.0	0.2	0.1	0.0	0.4	0.2	0.0	0.7	0.1	0.0	0.3
11	Region 25	1.9	0.7	5.2	1.5	0.2	4.1	3.3	2.2	5.3	0.1	0.0	0.2	0.3	0.0	1.1	3.8	2.6	5.3	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.6	0.0	0.0	0.2
17	Region 26	2.6	1.7	4.2	1.2	0.2	2.6	3.8	2.7	6.7	0.1	0.0	0.2	0.2	0.0	0.7	4.1	2.7	7.7	0.0	0.0	0.0	0.1	0.0	0.4	0.6	0.3	1.0	0.2	0.0	0.6
6	Region 27	2.4	1.0	3.3	1.8	1.3	2.3	4.2	2.7	5.2	0.2	0.1	0.2	0.1	0.0	0.2	4.5	2.8	5.4	0.0	0.0	0.0	0.1	0.0	0.3	0.7	0.0	1.1	0.2	0.0	0.5
22	Region 28	2.7	1.6	5.4	1.5	0.0	3.0	4.3	1.8	7.0	0.1	0.0	0.2	0.2	0.0	0.8	4.6	1.8	7.7	0.0	0.0	0.0	0.1	0.0	0.3	0.9	0.2	2.3	0.2	0.0	0.5
28	Region 29	2.0	0.7	5.8	1.6	0.5	3.8	3.5	1.5	6.6	0.1	0.0	0.3	0.2	0.0	1.0	3.8	1.5	7.6	0.0	0.0	0.0	0.1	0.0	0.3	0.5	0.0	1.6	0.2	0.0	0.7
18	Region 30	2.3	1.4	5.4	1.8	0.6	2.7	4.1	2.2	6.8	0.2	0.1	0.2	0.2	0.0	1.1	4.4	2.3	6.9	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.0	1.0	0.2	0.0	0.7
12	Region 31	2.2	1.6	2.9	1.1	0.5	1.8	3.2	2.5	4.2	0.1	0.0	0.3	0.3	0.0	0.8	3.6	3.0	4.3	0.0	0.0	0.0	0.1	0.0	0.3	0.5	0.0	0.7	0.1	0.0	0.3
18	Region 32	1.8	0.5	3.8	1.4	0.2	2.8	3.2	1.5	5.3	0.1	0.0	0.2	0.3	0.0	0.8	3.6	1.5	5.8	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	1.7	0.1	0.0	0.5
1	Region 33	0.9	0.9	0.9	0.7	0.7	0.7	1.7	1.7	1.7	0.1	0.1	0.1	0.2	0.2	0.2	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0
10	Region 34	2.2	1.4	3.7	1.2	0.7	1.6	3.3	2.3	5.3	0.2	0.1	0.3	0.1	0.0	0.3	3.6	2.5	5.5	0.0	0.0	0.0	0.1	0.0	0.4	0.6	0.0	1.4	0.2	0.0	0.6
9	Region 35	2.1	0.7	4.0	1.7	0.6	2.9	3.8	1.7	6.8	0.2	0.0	0.3	0.2	0.0	0.6	4.2	2.0	7.6	0.0	0.0	0.0	0.1	0.0	0.2	0.4	0.0	1.2	0.1	0.0	0.2
14	Region 36	2.9	1.1	5.7	2.0	0.3	2.9	4.9	1.4	7.0	0.2	0.1	0.3	0.2	0.0	0.8	5.2	1.9	7.1	0.0	0.0	0.0	0.1	0.0	0.4	0.7	0.0	1.9	0.2	0.0	0.6
440	**Ave WM 1**	**2.2**			**1.5**			**3.7**			**0.1**			**0.2**			**4.0**			**0.0**			**0.1**			**0.5**			**0.1**		
	Min WM 1		**0.4**			**0.1**			**1.0**			**0.0**			**0.0**			**1.0**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM 1			**5.8**			**4.8**			**7.0**			**0.3**			**1.4**			**7.8**			**0.4**			**0.7**			**2.3**			**0.7**

TABLE 2: RSA GRADING OF WHITE MAIZE (2008/2009) (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 2																														
2	Region 12	6.1	4.7	7.5	1.9	1.8	2.1	8.1	6.8	9.3	0.2	0.2	0.3	0.6	0.2	1.0	8.9	8.1	9.7	0.0	0.0	0.0	0.3	0.2	0.5	1.6	1.1	2.1	0.6	0.4	0.9
1	Region 13	5.8	5.8	5.8	1.3	1.3	1.3	7.1	7.1	7.1	0.2	0.2	0.2	0.3	0.3	0.3	7.6	7.6	7.6	0.0	0.0	0.0	0.4	0.4	0.4	1.4	1.4	1.4	0.6	0.6	0.6
1	Region 14	2.4	2.4	2.4	5.1	5.1	5.1	7.5	7.5	7.5	0.3	0.3	0.3	0.0	0.0	0.0	7.7	7.7	7.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.2	0.2	0.2
2	Region 15	5.4	5.0	5.9	2.0	1.6	2.4	7.4	7.3	7.5	0.2	0.1	0.3	0.3	0.0	0.6	7.9	7.6	8.3	0.0	0.0	0.0	0.2	0.0	0.3	1.9	1.7	2.1	0.4	0.3	0.5
2	Region 16	5.5	3.8	7.2	1.8	0.3	3.3	7.3	7.1	7.5	0.1	0.0	0.3	0.2	0.2	0.2	7.6	7.5	7.7	0.0	0.0	0.0	0.4	0.4	0.4	1.3	0.8	1.8	0.1	0.0	0.2
2	Region 17	7.1	6.9	7.2	2.1	1.0	3.3	9.2	8.2	10.2	0.2	0.1	0.3	0.0	0.0	0.0	9.4	8.3	10.5	0.0	0.0	0.0	0.7	0.6	0.8	1.6	1.4	1.9	0.7	0.5	0.8
3	Region 19	7.0	5.9	7.9	2.0	1.3	2.6	9.0	7.2	10.6	0.3	0.2	0.3	1.4	0.3	3.2	10.6	7.7	12.6	0.0	0.0	0.0	0.6	0.5	0.7	2.7	2.5	3.0	0.8	0.4	1.1
2	Region 20	5.7	5.5	6.0	1.5	1.3	1.7	7.2	7.1	7.2	0.2	0.1	0.2	0.3	0.0	0.7	7.7	7.3	8.1	0.0	0.0	0.0	0.4	0.3	0.5	1.1	0.9	1.4	0.3	0.2	0.3
3	Region 23	5.7	5.4	6.0	1.8	1.2	2.3	7.5	7.1	8.1	0.2	0.1	0.2	0.5	0.0	1.1	8.1	7.3	8.6	0.3	0.0	0.6	0.5	0.4	0.6	1.2	0.9	1.5	0.2	0.2	0.3
1	Region 25	3.3	3.3	3.3	1.8	1.8	1.8	5.1	5.1	5.1	0.2	0.2	0.2	4.6	4.6	4.6	9.9	9.9	9.9	0.0	0.0	0.0	0.4	0.4	0.4	0.9	0.9	0.9	0.2	0.2	0.2
2	Region 26	6.8	5.6	7.9	3.6	2.3	4.9	10.4	7.9	12.8	0.2	0.2	0.2	0.3	0.2	0.3	10.8	8.4	13.2	0.0	0.0	0.0	0.3	0.2	0.3	1.6	1.0	2.3	0.8	0.8	0.9
3	Region 28	5.3	2.9	7.8	3.2	1.4	5.3	8.5	7.9	9.3	0.1	0.1	0.2	0.9	0.0	1.4	9.4	8.3	10.9	0.0	0.0	0.0	0.5	0.3	0.6	1.8	1.0	3.1	0.6	0.5	0.8
3	Region 29	3.5	1.1	6.6	2.9	1.2	5.5	6.4	3.3	8.2	0.2	0.2	0.2	1.7	0.0	5.0	8.3	7.9	8.4	0.0	0.0	0.0	0.1	0.0	0.2	1.1	0.2	2.2	0.4	0.2	0.7
4	Region 30	7.0	5.7	8.4	2.0	0.8	2.9	9.0	8.5	9.9	0.2	0.1	0.3	0.0	0.0	0.0	9.3	8.7	10.0	0.0	0.0	0.0	0.3	0.2	0.3	2.3	1.5	3.2	0.7	0.5	0.9
1	Region 32	7.0	7.0	7.0	0.2	0.2	0.2	7.2	7.2	7.2	0.1	0.1	0.1	0.5	0.5	0.5	7.8	7.8	7.8	0.0	0.0	0.0	1.2	1.2	1.2	0.7	0.7	0.7	0.2	0.2	0.2
2	Region 34	7.0	6.6	7.3	1.6	1.5	1.8	8.6	8.1	9.1	0.2	0.1	0.2	0.2	0.0	0.3	8.9	8.6	9.3	0.0	0.0	0.0	0.8	0.6	1.0	2.4	2.2	2.5	1.3	1.3	1.3
2	Region 36	4.7	2.0	7.4	1.5	1.1	1.9	6.2	3.0	9.3	0.3	0.2	0.5	0.9	0.6	1.3	7.5	4.8	10.1	0.0	0.0	0.0	0.2	0.0	0.4	1.6	0.6	2.6	0.2	0.0	0.4
36	**Ave WM 2**	**5.8**			**2.2**			**7.9**			**0.2**			**0.7**			**8.8**			**0.0**			**0.4**			**1.7**			**0.5**		
	Min WM 2		**1.1**			**0.2**			**3.0**			**0.0**			**0.0**			**4.8**			**0.0**			**0.0**			**0.2**			**0.0**	
	Max WM 2			**8.4**			**5.5**			**12.8**			**0.5**			**5.0**			**13.2**			**0.6**			**1.2**			**3.2**			**1.3**

TABLE 2: RSA GRADING OF WHITE MAIZE (2008/2009) (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																														
1	Region 16	16.1	16.1	16.1	1.8	1.8	1.8	17.9	17.9	17.9	0.2	0.2	0.2	2.1	2.1	2.1	20.2	20.2	20.2	0.0	0.0	0.0	0.4	0.4	0.4	2.6	2.6	2.6	0.2	0.2	0.2
1	Region 19	11.2	11.2	11.2	2.0	2.0	2.0	13.2	13.2	13.2	0.2	0.2	0.2	1.4	1.4	1.4	14.8	14.8	14.8	0.0	0.0	0.0	0.9	0.9	0.9	4.5	4.5	4.5	0.8	0.8	0.8
1	Region 25	11.9	11.9	11.9	2.2	2.2	2.2	14.0	14.0	14.0	0.3	0.3	0.3	0.9	0.9	0.9	15.2	15.2	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 36	16.9	16.9	16.9	0.8	0.8	0.8	17.7	17.7	17.7	0.1	0.1	0.1	0.0	0.0	0.0	17.8	17.8	17.8	0.0	0.0	0.0	1.6	1.6	1.6	4.2	4.2	4.2	2.1	2.1	2.1
4	**Ave WM3**	**14.0**			**1.7**			**15.7**			**0.2**			**1.1**			**17.0**			**0.0**			**0.7**			**2.8**			**0.8**		
	Min WM3		**11.2**			**0.8**			**13.2**			**0.1**			**0.0**			**14.8**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM3			**16.9**			**2.2**			**17.9**			**0.3**			**2.1**			**20.2**			**0.0**			**1.6**			**4.5**			**2.1**
GRADE: COM																														
2	Region 17	4.5	1.6	7.5	3.0	2.0	4.0	7.5	5.6	9.5	2.5	1.1	4.0	0.6	0.4	0.8	10.7	10.4	11.0	0.0	0.0	0.0	0.4	0.0	0.8	0.8	0.0	1.5	0.5	0.0	0.9
1	Region 28	2.4	2.4	2.4	0.0	0.0	0.0	2.4	2.4	2.4	0.9	0.9	0.9	0.0	0.0	0.0	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.0	0.0	0.0
3	**Ave COM**	**3.8**			**2.0**			**5.8**			**2.0**			**0.4**			**8.3**			**0.0**			**0.3**			**0.8**			**0.3**		
	Min COM		**1.6**			**0.0**			**2.4**			**0.9**			**0.0**			**3.3**			**0.0**			**0.0**			**0.8**			**0.0**	
	Max COM			**7.5**			**4.0**			**9.5**			**4.0**			**0.8**			**11.0**			**0.0**			**0.8**			**1.5**			**0.9**
483	**Ave white maize**	**2.6**			**1.6**			**4.2**			**0.2**			**0.2**			**4.5**			**0.0**			**0.1**			**0.6**			**0.2**		
	Min white maize		**0.4**			**0.0**			**1.0**			**0.0**			**0.0**			**1.0**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max white maize			**16.9**			**5.5**			**17.9**			**4.0**			**5.0**			**20.2**			**0.6**			**1.6**			**4.5**			**2.1**
810	**Ave maize**	**2.5**			**1.8**			**4.2**			**0.2**			**0.2**			**4.6**			**0.0**			**0.1**			**0.6**			**0.1**		
	Min maize		**0.4**			**0.0**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**16.9**			**10.6**			**17.9**			**4.0**			**13.3**			**29.6**			**0.6**			**1.6**			**5.8**			**2.5**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2008/2009)

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																														
15	Region 10	1.2	0.5	4.2	1.6	0.9	2.7	2.9	1.5	5.0	0.2	0.1	0.3	0.0	0.0	0.2	3.0	1.7	5.2	0.0	0.0	0.0	0.1	0.0	0.5	0.3	0.0	0.9	0.0	0.0	0.4
12	Region 11	1.2	0.5	1.9	2.0	0.0	3.3	3.2	1.3	4.8	0.1	0.0	0.3	0.0	0.0	0.4	3.3	1.3	5.1	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.7	0.1	0.0	0.4
5	Region 12	1.5	0.5	2.6	1.6	0.5	2.6	3.1	1.8	5.2	0.1	0.1	0.2	0.1	0.0	0.4	3.3	2.3	5.4	0.0	0.0	0.0	0.1	0.0	0.3	0.5	0.0	1.0	0.1	0.0	0.3
4	Region 13	2.9	1.3	6.2	1.2	0.4	1.8	4.2	1.7	8.0	0.1	0.1	0.2	0.5	0.0	1.6	4.8	2.0	8.2	0.0	0.0	0.0	0.2	0.0	0.4	0.8	0.3	2.0	0.3	0.0	0.7
12	Region 14	1.5	0.6	3.1	1.8	0.1	3.9	3.2	0.9	5.4	0.1	0.0	0.3	0.1	0.0	0.4	3.5	0.9	5.8	0.0	0.0	0.0	0.1	0.0	0.3	0.4	0.0	1.3	0.0	0.0	0.4
7	Region 15	2.8	1.1	4.1	1.8	1.1	2.3	4.6	2.1	6.3	0.1	0.1	0.2	0.0	0.0	0.0	4.7	2.2	6.5	0.0	0.0	0.0	0.2	0.0	0.2	1.0	0.0	1.9	0.2	0.0	0.4
8	Region 16	2.2	1.0	3.7	1.8	1.1	2.9	4.0	2.8	5.6	0.2	0.1	0.2	0.3	0.0	0.9	4.4	2.9	6.2	0.0	0.0	0.0	0.1	0.0	0.3	0.4	0.2	0.8	0.0	0.0	0.4
11	Region 17	2.2	0.6	4.5	1.9	0.5	3.6	4.1	1.5	8.1	0.1	0.0	0.3	0.2	0.0	1.2	4.4	1.7	8.4	0.0	0.0	0.0	0.2	0.0	0.4	0.6	0.0	1.3	0.1	0.0	0.5
4	Region 18	1.2	0.6	1.6	2.8	1.9	3.6	3.9	2.4	4.6	0.2	0.2	0.2	0.3	0.0	0.9	4.5	3.0	5.5	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.5	0.1	0.0	0.2
3	Region 19	2.9	1.8	4.1	2.6	1.3	3.8	5.5	5.4	5.6	0.2	0.2	0.3	0.2	0.0	0.7	6.0	5.5	6.5	0.0	0.0	0.0	0.1	0.0	0.2	0.7	0.3	0.9	0.3	0.0	0.4
5	Region 20	2.2	1.7	2.7	2.2	1.2	2.9	4.3	3.4	5.3	0.2	0.1	0.2	0.1	0.0	0.4	4.6	3.8	5.7	0.0	0.0	0.0	0.1	0.0	0.2	0.4	0.2	1.0	0.1	0.0	0.3
7	Region 21	2.2	0.5	3.7	1.9	1.1	3.1	4.1	2.1	5.7	0.2	0.1	0.2	0.3	0.0	0.8	4.6	3.0	5.9	0.1	0.0	0.4	0.1	0.0	0.4	0.6	0.0	1.3	0.2	0.0	0.3
4	Region 22	1.7	0.9	3.2	1.8	1.4	2.9	3.5	2.4	6.1	0.2	0.1	0.2	0.4	0.0	1.1	4.0	2.5	7.4	0.0	0.0	0.0	0.1	0.0	0.2	0.5	0.0	1.7	0.1	0.0	0.3
8	Region 23	2.6	1.5	3.3	2.4	1.2	3.3	5.0	2.7	6.5	0.2	0.1	0.2	0.2	0.0	1.3	5.3	4.1	6.7	0.1	0.0	0.3	0.3	0.0	0.6	0.9	0.4	1.7	0.1	0.0	0.4
4	Region 24	1.7	0.7	3.1	2.4	1.7	3.6	4.1	2.4	5.4	0.2	0.2	0.3	0.0	0.0	0.0	4.3	2.6	5.6	0.0	0.0	0.0	0.1	0.0	0.2	0.5	0.0	1.1	0.2	0.0	0.6
23	Region 25	1.9	0.9	3.2	1.4	0.7	2.2	3.3	1.9	5.0	0.1	0.1	0.2	0.0	0.0	0.4	3.5	2.0	5.6	0.0	0.0	0.0	0.1	0.0	0.4	0.4	0.0	0.9	0.0	0.0	0.0
14	Region 26	2.0	1.0	2.9	2.0	0.3	3.3	4.0	1.5	5.6	0.1	0.0	0.2	0.1	0.0	0.5	4.3	1.7	5.8	0.0	0.0	0.0	0.1	0.0	0.2	0.8	0.4	1.8	0.1	0.0	0.5
10	Region 27	2.4	1.1	3.6	2.1	1.3	3.3	4.5	3.6	5.5	0.2	0.1	0.3	0.0	0.0	0.2	4.7	3.8	5.7	0.0	0.0	0.3	0.2	0.0	0.4	0.8	0.0	1.3	0.2	0.0	0.7
46	Region 28	2.5	1.1	4.5	2.0	0.0	4.0	4.4	2.5	7.2	0.1	0.0	0.2	0.1	0.0	0.5	4.7	2.7	7.4	0.0	0.0	0.0	0.1	0.0	0.4	0.8	0.0	1.4	0.1	0.0	0.5
5	Region 29	1.9	0.9	3.2	2.0	1.3	3.1	3.9	2.2	4.7	0.2	0.1	0.3	0.3	0.0	1.6	4.3	3.6	4.9	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.2	1.0	0.1	0.0	0.3
23	Region 30	2.3	0.9	4.4	2.0	0.9	3.3	4.3	2.1	7.1	0.1	0.1	0.3	0.1	0.0	0.6	4.5	2.6	7.3	0.0	0.0	0.0	0.1	0.0	0.4	0.7	0.0	2.3	0.2	0.0	0.6
21	Region 31	1.6	0.6	3.5	1.7	0.8	3.1	3.4	2.2	5.1	0.1	0.1	0.2	0.0	0.0	0.4	3.6	2.3	5.3	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.0	1.3	0.0	0.0	0.3
15	Region 32	1.6	0.7	3.1	1.9	0.2	3.4	3.5	2.0	4.9	0.2	0.1	0.3	0.1	0.0	0.5	3.7	2.1	5.4	0.0	0.0	0.0	0.1	0.0	0.4	0.4	0.0	0.9	0.1	0.0	0.5
4	Region 33	2.4	2.0	2.9	2.1	1.5	2.8	4.5	3.9	5.7	0.2	0.1	0.3	0.0	0.0	0.0	4.7	4.2	5.9	0.0	0.0	0.0	0.4	0.3	0.7	0.7	0.4	0.9	0.1	0.0	0.3
8	Region 34	1.8	0.8	3.5	1.4	0.5	2.5	3.3	2.1	4.3	0.2	0.1	0.3	0.1	0.0	0.3	3.5	2.3	4.4	0.0	0.0	0.0	0.1	0.0	0.2	0.4	0.0	0.9	0.3	0.0	0.7
12	Region 35	1.5	0.6	3.1	1.5	0.8	3.9	2.9	1.4	6.5	0.1	0.1	0.2	0.0	0.0	0.0	3.0	1.5	6.7	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	1.2	0.0	0.0	0.3
7	Region 36	3.3	0.9	4.6	1.6	0.4	3.3	4.9	1.3	7.8	0.1	0.1	0.3	0.2	0.0	0.8	5.2	1.4	8.6	0.0	0.0	0.0	0.2	0.0	0.4	0.7	0.0	1.6	0.2	0.0	0.6
297	**Ave YM 1**	**2.0**			**1.8**			**3.9**			**0.1**			**0.1**			**4.1**			**0.0**			**0.1**			**0.6**			**0.1**		
	Min YM 1		**0.5**			**0.0**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.1**			**0.0**	
	Max YM 1			**6.2**			**4.0**			**8.1**			**0.3**			**1.6**			**8.6**			**0.6**			**0.7**			**2.3**			**0.7**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2008/2009) (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: YM 2																															
1	Region 10	1.4	1.4	1.4	2.5	2.5	2.5	3.9	3.9	3.9	0.4	0.4	0.4	0.0	0.0	0.0	4.3	4.3	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3
1	Region 12	6.5	6.5	6.5	2.1	2.1	2.1	8.6	8.6	8.6	0.3	0.3	0.3	0.6	0.6	0.6	9.5	9.5	9.5	0.0	0.0	0.0	0.4	0.4	0.4	3.1	3.1	3.1	0.8	0.8	0.8
2	Region 13	11.0	8.8	13.3	1.3	1.2	1.3	12.3	10.0	14.6	0.2	0.2	0.2	0.9	0.7	1.1	13.4	11.3	15.5	0.0	0.0	0.0	1.3	1.0	1.6	3.2	2.9	3.4	1.8	1.0	2.5
1	Region 17	2.6	2.6	2.6	5.0	5.0	5.0	7.6	7.6	7.6	0.1	0.1	0.1	0.5	0.5	0.5	8.2	8.2	8.2	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0
1	Region 18	0.8	0.8	0.8	6.3	6.3	6.3	7.1	7.1	7.1	0.2	0.2	0.2	0.2	0.2	0.2	7.6	7.6	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0
2	Region 19	3.7	3.7	3.8	3.9	3.4	4.4	7.6	7.2	8.0	0.3	0.2	0.5	0.6	0.0	1.2	8.5	8.2	8.8	0.0	0.0	0.0	0.4	0.3	0.4	1.1	1.0	1.1	0.4	0.3	0.5
1	Region 20	6.1	6.1	6.1	2.3	2.3	2.3	8.4	8.4	8.4	0.2	0.2	0.2	0.7	0.7	0.7	9.3	9.3	9.3	0.0	0.0	0.0	0.4	0.4	0.4	1.8	1.8	1.8	0.4	0.4	0.4
1	Region 25	1.1	1.1	1.1	6.2	6.2	6.2	7.2	7.2	7.2	0.4	0.4	0.4	0.2	0.2	0.2	7.9	7.9	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.2	0.2	0.2
1	Region 26	2.4	2.4	2.4	6.1	6.1	6.1	8.5	8.5	8.5	0.3	0.3	0.3	0.2	0.2	0.2	9.0	9.0	9.0	0.0	0.0	0.0	0.2	0.2	0.2	0.9	0.9	0.9	0.5	0.5	0.5
1	Region 28	5.8	5.8	5.8	2.6	2.6	2.6	8.4	8.4	8.4	0.3	0.3	0.3	0.9	0.9	0.9	9.6	9.6	9.6	0.0	0.0	0.0	0.4	0.4	0.4	1.6	1.6	1.6	0.7	0.7	0.7
3	Region 30	5.4	4.2	6.7	3.3	2.5	4.8	8.7	8.0	9.2	0.2	0.1	0.2	1.2	0.0	3.0	10.1	9.2	11.2	0.0	0.0	0.0	0.5	0.4	0.8	1.5	0.9	1.9	0.6	0.4	0.9
4	Region 31	5.0	1.7	6.5	4.5	3.5	6.4	9.5	8.1	10.1	0.1	0.1	0.2	0.0	0.0	0.0	9.7	8.3	10.2	0.0	0.0	0.0	0.4	0.0	0.7	1.4	0.2	1.8	0.2	0.2	0.3
1	Region 33	6.9	6.9	6.9	3.4	3.4	3.4	10.2	10.2	10.2	0.2	0.2	0.2	0.0	0.0	0.0	10.5	10.5	10.5	0.0	0.0	0.0	0.8	0.8	0.8	1.4	1.4	1.4	0.4	0.4	0.4
1	Region 34	5.6	5.6	5.6	2.9	2.9	2.9	8.5	8.5	8.5	0.2	0.2	0.2	1.5	1.5	1.5	10.3	10.3	10.3	0.0	0.0	0.0	0.4	0.4	0.4	1.3	1.3	1.3	0.2	0.2	0.2
1	Region 35	0.7	0.7	0.7	4.6	4.6	4.6	5.2	5.2	5.2	0.2	0.2	0.2	0.0	0.0	0.0	5.4	5.4	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Region 36	5.7	3.2	7.5	3.1	1.6	4.8	8.8	7.9	9.3	0.3	0.2	0.5	0.8	0.2	1.6	9.9	8.3	11.2	0.0	0.0	0.0	0.3	0.0	0.4	1.7	0.4	3.0	0.3	0.0	0.4
25	**Ave YM2**	**4.9**			**3.7**			**8.6**			**0.2**			**0.5**			**9.4**			**0.0**			**0.4**			**1.4**			**0.5**		
	Min YM2		**0.7**			**1.2**			**3.9**			**0.1**			**0.0**			**4.3**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM2			**13.3**			**6.4**			**14.6**			**0.5**			**3.0**			**15.5**			**0.0**			**1.6**			**3.4**			**2.5**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2008/2009) (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 17	0.9	0.9	0.9	10.6	10.6	10.6	11.5	11.5	11.5	0.3	0.3	0.3	0.0	0.0	0.0	11.8	11.8	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 30	1.7	1.7	1.7	1.9	1.9	1.9	3.5	3.5	3.5	0.6	0.6	0.6	0.0	0.0	0.0	4.1	4.1	4.1	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
2	**Ave YM3**	**1.3**			**6.2**			**7.5**			**0.4**			**0.0**			**8.0**			**0.0**			**0.1**			**0.1**			**0.2**		
	Min YM3		**0.9**			**1.9**			**3.5**			**0.3**			**0.0**			**4.1**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM3			**1.7**			**10.6**			**11.5**			**0.6**			**0.0**			**11.8**			**0.0**			**0.3**			**0.3**			**0.4**
GRADE: COM																															
1	Region 16	1.7	1.7	1.7	3.8	3.8	3.8	5.5	5.5	5.5	3.1	3.1	3.1	1.9	1.9	1.9	10.4	10.4	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.0	0.0	0.0
1	Region 19	15.1	15.1	15.1	0.9	0.9	0.9	16.1	16.1	16.1	0.2	0.2	0.2	13.3	13.3	13.3	29.6	29.6	29.6	0.0	0.0	0.0	1.3	1.3	1.3	5.8	5.8	5.8	0.9	0.9	0.9
1	Region 32	1.6	1.6	1.6	2.3	2.3	2.3	3.8	3.8	3.8	0.2	0.2	0.2	6.4	6.4	6.4	10.4	10.4	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.3	0.3	0.3
3	**Ave COM**	**6.1**			**2.3**			**8.5**			**1.2**			**7.2**			**16.8**			**0.0**			**0.4**			**2.3**			**0.4**		
	Min COM		**1.6**			**0.9**			**3.8**			**0.2**			**1.9**			**10.4**			**0.0**			**0.0**			**0.6**			**0.0**	
	Max COM			**15.1**			**3.8**			**16.1**			**3.1**			**13.3**			**29.6**			**0.0**			**1.3**			**5.8**			**0.9**
327	**Ave yellow maize**	**2.3**			**2.0**			**4.3**			**0.2**			**0.2**			**4.7**			**0.0**			**0.1**			**0.6**			**0.1**		
	Min yellow maize		**0.5**			**0.0**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max yellow maize			**15.1**			**10.6**			**16.1**			**3.1**			**13.3**			**29.6**			**0.4**			**1.6**			**5.8**			**2.5**
810	**Ave maize**	**2.5**			**1.8**			**4.2**			**0.2**			**0.2**			**4.6**			**0.0**			**0.1**			**0.6**			**0.1**		
	Min maize		**0.4**			**0.0**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**16.9**			**10.6**			**17.9**			**4.0**			**13.3**			**29.6**			**0.6**			**1.6**			**5.8**			**2.5**

TABLE 4: GRADING QUALITY OF SOUTH AFRICAN WHITE AND YELLOW MAIZE 1999/00 - 2008/09

Season	Number of samples	% Defective kernels above 6.35mm sieve			% Defective kernels below 6.35mm sieve			% Foreign matter			% Other colour			% Total deviation		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
White Maize																
1999/00	493	6.0	0.2	34.6	1.7	0.0	9.0	0.0	0.0	0.9	0.4	0.0	28.4	8.1	0.1	40.9
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
Weighted Average		**3.8**			**1.7**			**0.1**			**0.3**			**6.0**		
Minimum			**0.1**			**0.0**			**0.0**			**0.0**			**0.1**	
Maximum				**34.9**			**20.4**			**4.0**			**28.4**			**47.9**
Yellow Maize																
1999/00	407	6.5	0.2	40.0	2.1	0.0	14.4	0.0	0.0	0.4	0.2	0.0	3.1	8.8	0.5	48.5
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
Weighted Average		**3.9**			**2.2**			**0.2**			**0.2**			**6.5**		
Minimum			**0.0**			**0.0**			**0.0**			**0.0**			**0.0**	
Maximum				**67.7**			**17.3**			**3.1**			**16.7**			**70.0**
White and Yellow Maize																
1999/00	900	6.2	0.2	40.0	1.8	0.0	14.4	0.0	0.0	0.9	0.3	0.0	28.4	8.4	0.1	48.5
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
Weighted Average		**3.9**			**1.9**			**0.2**			**0.2**			**6.2**		
Minimum			**0.0**			**0.0**			**0.0**			**0.0**			**0.0**	
Maximum				**67.7**			**20.4**			**4.0**			**28.4**			**70.0**

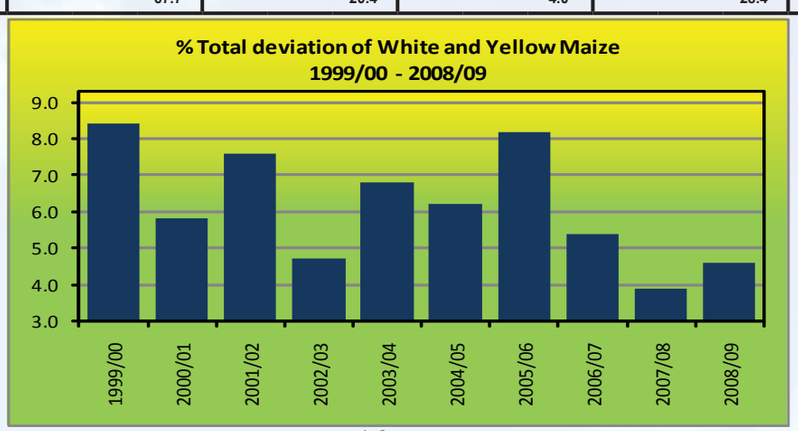


TABLE 5: USA GRADING OF WHITE MAIZE (2008/09)

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																
1	Region 11	0.0	0.0	0.0	1.8	1.8	1.8	0.0	0.0	0.0	80.9	80.9	80.9	0.5	0.5	0.5
12	Region 12	0.0	0.0	0.0	1.8	0.4	2.6	0.5	0.2	0.9	77.9	74.4	80.1	0.2	0.0	1.1
11	Region 13	0.0	0.0	0.0	2.5	2.3	3.0	0.4	0.2	0.6	77.8	76.6	79.1	0.2	0.0	0.6
30	Region 14	0.0	0.0	0.0	1.9	0.8	3.0	0.8	0.0	1.7	78.5	75.3	80.9	0.1	0.0	0.6
23	Region 15	0.0	0.0	0.0	2.0	1.1	2.8	0.6	0.4	0.9	79.4	76.2	80.5	0.1	0.0	0.5
27	Region 16	0.0	0.0	0.0	1.9	0.9	2.9	0.3	0.0	0.9	78.7	74.6	81.3	0.1	0.0	0.8
25	Region 17	0.0	0.0	0.0	2.4	1.0	3.0	0.7	0.3	1.5	76.3	72.6	79.0	0.1	0.0	0.4
10	Region 18	0.0	0.0	0.0	1.5	0.6	2.5	0.9	0.4	1.7	77.1	75.0	78.4	0.2	0.0	0.5
10	Region 20	0.0	0.0	0.0	2.1	1.5	2.5	0.4	0.0	0.7	77.2	74.3	78.7	0.2	0.0	1.1
19	Region 21	0.0	0.0	0.0	2.2	1.3	2.9	0.5	0.3	1.1	78.0	76.5	79.8	0.1	0.0	0.7
16	Region 22	0.0	0.0	0.0	1.8	0.6	2.9	0.6	0.3	1.1	78.5	77.3	80.7	0.1	0.0	0.4
27	Region 23	0.0	0.0	0.0	1.6	0.9	2.8	0.6	0.2	1.6	78.5	74.2	80.3	0.1	0.0	0.4
14	Region 24	0.0	0.0	0.0	1.8	0.8	2.5	0.5	0.2	0.8	78.1	76.6	79.9	0.1	0.0	0.7
10	Region 25	0.0	0.0	0.0	1.6	0.8	2.6	0.6	0.3	1.4	76.6	75.2	78.8	0.4	0.0	1.1
15	Region 26	0.0	0.0	0.0	2.5	1.8	2.9	0.3	0.0	0.9	76.3	73.6	78.1	0.2	0.0	0.7
4	Region 27	0.0	0.0	0.0	2.2	1.1	2.8	0.7	0.5	0.8	77.5	76.0	78.5	0.0	0.0	0.2
16	Region 28	0.0	0.0	0.0	2.2	1.6	2.8	0.5	0.0	0.9	77.0	73.9	79.1	0.2	0.0	0.8
26	Region 29	0.0	0.0	0.0	1.6	0.7	3.0	0.6	0.0	2.0	77.0	72.8	80.0	0.1	0.0	0.5
14	Region 30	0.0	0.0	0.0	1.8	1.4	2.7	0.6	0.3	0.8	77.7	75.9	79.0	0.2	0.0	1.1
12	Region 31	0.0	0.0	0.0	2.2	1.6	2.6	0.4	0.2	0.7	77.7	74.1	79.2	0.3	0.0	0.8
16	Region 32	0.0	0.0	0.0	1.6	0.5	2.6	0.6	0.1	1.5	77.9	76.3	79.1	0.3	0.0	0.8
1	Region 33	0.0	0.0	0.0	0.9	0.9	0.9	0.2	0.2	0.2	77.2	77.2	77.2	0.2	0.2	0.2
9	Region 34	0.0	0.0	0.0	2.0	1.4	2.9	0.4	0.2	0.6	77.7	73.8	79.8	0.1	0.0	0.3
7	Region 35	0.0	0.0	0.0	1.7	0.7	2.9	0.4	0.3	1.3	77.6	75.5	80.6	0.1	0.0	0.2
9	Region 36	0.0	0.0	0.0	2.1	1.2	2.9	0.7	0.1	0.9	76.9	74.4	78.0	0.3	0.0	1.3
364	**Ave US 1**	**0.0**			**1.9**			**0.6**			**77.8**			**0.1**		
	Min US 1		**0.0**			**0.4**			**0.0**			**72.6**			**0.0**	
	Max US 1			**0.0**			**3.0**			**2.0**			**81.3**			**1.3**
GRADE: US 2																
2	Region 12	0.0	0.0	0.0	4.1	3.6	4.7	0.4	0.0	0.9	78.1	77.2	78.9	0.7	0.3	1.0
5	Region 13	0.0	0.0	0.0	4.1	3.3	5.0	0.4	0.3	0.6	76.8	76.0	77.9	0.5	0.0	1.4
6	Region 14	0.0	0.0	0.0	3.2	2.5	3.4	0.9	0.1	2.6	80.3	79.0	82.8	0.1	0.0	0.3
12	Region 16	0.0	0.0	0.0	3.9	3.1	4.5	0.6	0.0	1.2	77.2	75.9	78.8	0.2	0.0	0.7
6	Region 17	0.0	0.0	0.0	3.3	2.0	4.1	0.9	0.5	1.1	75.1	70.1	77.1	0.2	0.0	0.3
6	Region 19	0.0	0.0	0.0	3.6	3.1	4.2	0.6	0.3	0.8	77.6	76.8	78.2	0.3	0.0	0.7
5	Region 20	0.0	0.0	0.0	3.5	3.1	3.7	0.5	0.4	0.6	77.4	75.2	78.6	0.4	0.0	0.7
5	Region 21	0.0	0.0	0.0	4.0	3.1	4.7	0.8	0.6	1.1	77.5	76.4	79.3	0.3	0.0	0.6
3	Region 22	0.0	0.0	0.0	3.8	3.3	4.3	0.5	0.3	0.7	78.4	77.5	79.0	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	3.8	3.8	3.8	0.6	0.6	0.6	78.5	78.5	78.5	0.0	0.0	0.0
2	Region 26	0.0	0.0	0.0	3.7	3.2	4.3	0.9	0.9	1.0	79.2	78.5	79.9	0.5	0.3	0.7
2	Region 27	0.0	0.0	0.0	3.2	3.1	3.3	0.7	0.6	0.8	76.6	76.4	76.8	0.1	0.0	0.2
5	Region 28	0.0	0.0	0.0	3.6	3.3	3.9	0.6	0.4	0.8	78.0	75.9	78.9	0.3	0.0	0.6
2	Region 29	0.0	0.0	0.0	3.6	3.5	3.8	0.6	0.2	0.9	79.1	77.4	80.7	0.4	0.0	0.9
3	Region 30	0.0	0.0	0.0	4.0	3.3	4.8	0.7	0.7	0.7	77.4	75.9	78.4	0.3	0.0	0.8
2	Region 32	0.0	0.0	0.0	3.7	3.6	3.8	0.3	0.2	0.5	78.0	76.5	79.4	0.2	0.2	0.2
1	Region 34	0.0	0.0	0.0	3.7	3.7	3.7	0.6	0.6	0.6	78.9	78.9	78.9	0.0	0.0	0.0
2	Region 35	0.0	0.0	0.0	3.7	3.3	4.1	1.4	1.3	1.5	75.0	74.5	75.4	0.4	0.2	0.6
4	Region 36	0.0	0.0	0.0	3.7	3.1	4.5	0.7	0.4	1.0	76.5	76.0	76.9	0.2	0.0	0.3
74	**Ave US 2**	**0.0**			**3.7**			**0.7**			**77.5**			**0.2**		
	Min US 2		**0.0**			**2.0**			**0.0**			**70.1**			**0.0**	
	Max US 2			**0.0**			**5.0**			**2.6**			**82.8**			**1.4**

TABLE 5: USA GRADING OF WHITE MAIZE (2008/09) (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	5.8	5.8	5.8	0.5	0.5	0.5	77.2	77.2	77.2	0.3	0.3	0.3
2	Region 15	0.0	0.0	0.0	5.5	5.2	5.9	0.8	0.6	0.9	78.4	78.4	78.4	0.3	0.0	0.6
1	Region 19	0.0	0.0	0.0	6.1	6.1	6.1	0.5	0.5	0.5	76.3	76.3	76.3	0.3	0.3	0.3
2	Region 20	0.0	0.0	0.0	5.8	5.6	6.0	0.6	0.6	0.7	77.5	77.0	77.9	0.3	0.0	0.7
3	Region 23	0.0	0.0	0.0	5.8	5.5	6.0	0.7	0.4	1.0	77.7	76.9	78.5	0.5	0.0	1.1
1	Region 25	0.0	0.0	0.0	5.2	5.2	5.2	0.1	0.1	0.1	75.9	75.9	75.9	0.0	0.0	0.0
1	Region 26	0.0	0.0	0.0	5.6	5.6	5.6	1.0	1.0	1.0	74.9	74.9	74.9	0.3	0.3	0.3
4	Region 28	0.0	0.0	0.0	4.6	2.9	5.4	1.4	0.5	3.4	78.6	76.9	79.7	0.5	0.0	1.1
2	Region 29	0.0	0.0	0.0	5.6	5.4	5.8	0.4	0.3	0.4	78.5	78.4	78.6	0.5	0.0	1.0
3	Region 30	0.0	0.0	0.0	5.9	5.4	6.4	0.8	0.5	1.0	75.9	75.4	76.4	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	6.8	6.8	6.8	0.5	0.5	0.5	76.1	76.1	76.1	0.3	0.3	0.3
2	Region 36	0.0	0.0	0.0	5.5	5.2	5.8	0.4	0.4	0.4	75.3	74.0	76.6	0.0	0.0	0.0
23	**Ave US 3**	**0.0**			**5.6**			**0.8**			**77.2**			**0.3**		
	Min US 3		**0.0**			**2.9**			**0.1**			**74.0**			**0.0**	
	Max US 3			**0.0**			**6.8**			**3.4**			**79.7**			**1.1**
GRADE: US 4																
1	Region 12	0.0	0.0	0.0	7.5	7.5	7.5	0.6	0.6	0.6	76.9	76.9	76.9	0.2	0.2	0.2
1	Region 16	0.0	0.0	0.0	7.2	7.2	7.2	0.1	0.1	0.1	78.7	78.7	78.7	0.2	0.2	0.2
4	Region 17	0.0	0.0	0.0	5.9	1.7	7.5	2.0	0.3	5.0	74.9	71.8	77.3	0.3	0.0	0.8
1	Region 19	0.0	0.0	0.0	8.1	8.1	8.1	1.0	1.0	1.0	77.2	77.2	77.2	0.6	0.6	0.6
1	Region 26	0.0	0.0	0.0	8.1	8.1	8.1	1.8	1.8	1.8	76.1	76.1	76.1	0.2	0.2	0.2
1	Region 28	0.0	0.0	0.0	8.0	8.0	8.0	0.6	0.6	0.6	75.8	75.8	75.8	1.4	1.4	1.4
2	Region 30	0.0	0.0	0.0	8.1	7.9	8.4	0.5	0.4	0.5	78.0	77.1	78.8	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	7.1	7.1	7.1	0.1	0.1	0.1	75.1	75.1	75.1	0.5	0.5	0.5
1	Region 34	0.0	0.0	0.0	7.4	7.4	7.4	0.6	0.6	0.6	74.3	74.3	74.3	0.0	0.0	0.0
1	Region 36	0.0	0.0	0.0	7.5	7.5	7.5	0.3	0.3	0.3	76.5	76.5	76.5	0.6	0.6	0.6
14	**Ave US 4**	**0.0**			**7.2**			**1.0**			**76.1**			**0.4**		
	Min US 4		**0.0**			**1.7**			**0.1**			**71.8**			**0.0**	
	Max US 4			**0.0**			**8.4**			**5.0**			**78.8**			**1.4**
GRADE: US 5																
1	Region 19	0.0	0.0	0.0	11.4	11.4	11.4	0.7	0.7	0.7	75.4	75.4	75.4	1.4	1.4	1.4
1	Region 24	0.0	0.0	0.0	2.3	2.3	2.3	0.1	0.1	0.1	61.6	61.6	61.6	0.0	0.0	0.0
1	Region 25	0.0	0.0	0.0	11.9	11.9	11.9	0.9	0.9	0.9	73.8	73.8	73.8	0.9	0.9	0.9
3	**Ave US 5**	**0.0**			**8.5**			**0.6**			**70.3**			**0.8**		
	Min US 5		**0.0**			**2.3**			**0.1**			**61.6**			**0.0**	
	Max US 5			**0.0**			**11.9**			**0.9**			**75.4**			**1.4**
GRADE: MIXED GRADE																
1	Region 19	0.0	0.0	0.0	7.3	7.3	7.3	0.8	0.8	0.8	78.4	78.4	78.4	3.2	3.2	3.2
1	Region 25	0.0	0.0	0.0	3.4	3.4	3.4	0.7	0.7	0.7	76.2	76.2	76.2	4.6	4.6	4.6
1	Region 29	0.0	0.0	0.0	1.1	1.1	1.1	0.7	0.7	0.7	78.6	78.6	78.6	5.0	5.0	5.0
3	**Ave Mixed Grade**	**0.0**			**3.9**			**0.7**			**77.7**			**4.3**		
	Min Mixed Grade		**0.0**			**1.1**			**0.7**			**76.2**			**3.2**	
	Max Mixed Grade			**0.0**			**7.3**			**0.8**			**78.6**			**5.0**
GRADE:SAMPLE GRADE																
1	Region 16	0.0	0.0	0.0	16.2	16.2	16.2	0.6	0.6	0.6	79.4	79.4	79.4	2.1	2.1	2.1
1	Region 36	0.0	0.0	0.0	16.9	16.9	16.9	0.3	0.3	0.3	75.2	75.2	75.2	0.0	0.0	0.0
2	**Ave Sample Grade**	**0.0**			**16.5**			**0.5**			**77.3**			**1.1**		
	Min Sample Grade		**0.0**			**16.2**			**0.3**			**75.2**			**0.0**	
	Max Sample Grade			**0.0**			**16.9**			**0.6**			**79.4**			**2.1**
483	**Ave white maize**	**0.0**			**2.6**			**0.6**			**77.6**			**0.2**		
	Min white maize		**0.0**			**0.4**			**0.0**			**61.6**			**0.0**	
	Max white maize			**0.0**			**16.9**			**5.0**			**82.8**			**5.0**
810	**Ave maize**	**0.0**			**2.5**			**0.7**			**77.2**			**0.2**		
	Min maize		**0.0**			**0.4**			**0.0**			**61.6**			**0.0**	
	Max maize			**1.9**			**16.9**			**7.5**			**82.8**			**13.3**

TABLE 6: USA GRADING OF YELLOW MAIZE (2008/09)

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																
14	Region 10	0.0	0.0	0.0	0.9	0.5	2.4	0.6	0.3	1.0	77.0	74.8	78.3	0.0	0.0	0.2
12	Region 11	0.0	0.0	0.0	1.3	0.5	1.9	0.8	0.0	1.4	77.0	76.0	77.9	0.0	0.0	0.4
5	Region 12	0.0	0.0	0.0	1.7	0.5	2.6	0.5	0.3	0.8	77.1	75.9	79.0	0.1	0.0	0.4
3	Region 13	0.0	0.0	0.0	1.9	1.3	2.4	0.3	0.1	0.5	77.9	77.6	78.0	0.6	0.0	1.6
11	Region 14	0.0	0.0	0.0	1.3	0.6	2.9	0.6	0.0	1.9	77.7	72.9	81.2	0.1	0.0	0.4
4	Region 15	0.0	0.0	0.0	2.0	1.2	2.7	0.6	0.4	0.7	77.2	76.7	77.8	0.0	0.0	0.0
6	Region 16	0.0	0.0	0.0	1.8	1.1	2.5	0.6	0.3	1.2	75.9	74.0	78.0	0.2	0.0	0.5
8	Region 17	0.0	0.0	0.0	1.6	0.6	2.7	0.7	0.0	1.7	75.8	73.6	77.4	0.2	0.0	0.5
4	Region 18	0.0	0.0	0.0	1.3	0.7	1.8	1.0	0.6	1.5	76.0	75.4	76.8	0.3	0.0	0.9
1	Region 19	0.0	0.0	0.0	2.0	2.0	2.0	1.5	1.5	1.5	79.6	79.6	79.6	0.0	0.0	0.0
5	Region 20	0.0	0.0	0.0	2.3	1.9	2.7	0.7	0.5	1.0	76.8	76.3	77.4	0.1	0.0	0.4
5	Region 21	0.0	0.0	0.0	1.8	0.7	2.8	0.7	0.3	1.1	75.9	73.5	77.3	0.3	0.0	0.7
3	Region 22	0.0	0.0	0.0	1.3	1.1	1.7	0.7	0.6	0.7	75.3	74.6	75.9	0.1	0.0	0.4
4	Region 23	0.0	0.0	0.0	2.1	1.5	2.6	0.8	0.3	1.3	77.2	76.6	77.9	0.3	0.0	1.3
3	Region 24	0.0	0.0	0.0	1.4	0.9	2.0	0.9	0.8	1.1	75.6	74.3	76.3	0.0	0.0	0.0
21	Region 25	0.0	0.0	0.0	2.0	1.0	2.8	0.5	0.2	0.8	76.3	74.6	77.7	0.0	0.0	0.0
14	Region 26	0.0	0.0	0.0	2.1	1.0	2.9	0.6	0.0	1.1	76.6	72.7	80.4	0.1	0.0	0.5
9	Region 27	0.0	0.0	0.0	2.4	1.1	3.0	0.7	0.3	1.0	76.7	75.9	77.5	0.0	0.0	0.2
37	Region 28	0.0	0.0	0.0	2.2	1.2	3.0	0.6	0.0	1.2	76.5	74.1	78.7	0.0	0.0	0.3
4	Region 29	0.0	0.0	0.0	1.5	0.9	2.6	0.7	0.5	0.9	77.0	75.4	78.3	0.4	0.0	1.6
20	Region 30	0.0	0.0	0.0	2.0	1.1	2.9	0.7	0.3	1.2	77.4	75.3	78.7	0.1	0.0	0.6
20	Region 31	0.0	0.0	0.0	1.7	0.7	2.6	0.7	0.2	1.3	78.2	76.3	80.1	0.0	0.0	0.4
14	Region 32	0.0	0.0	0.0	1.5	0.7	2.9	0.8	0.1	1.4	77.4	75.7	79.3	0.1	0.0	0.5
3	Region 33	0.0	0.0	0.0	2.5	2.1	2.8	0.6	0.3	0.9	76.2	73.0	78.2	0.0	0.0	0.0
7	Region 34	0.0	0.0	0.0	1.7	0.8	2.5	0.6	0.3	1.1	78.2	76.9	80.0	0.1	0.0	0.3
3	Region 35	0.0	0.0	0.0	1.4	0.8	2.8	0.4	0.3	0.6	75.3	74.0	77.8	0.0	0.0	0.0
2	Region 36	0.0	0.0	0.0	1.2	1.0	1.4	0.4	0.1	0.6	76.2	76.0	76.4	0.0	0.0	0.0
242	**Ave US 1**	**0.0**			**1.8**			**0.7**			**76.9**			**0.1**		
	Min US 1		**0.0**			**0.5**			**0.0**			**72.7**			**0.0**	
	Max US 1			**0.0**			**3.0**			**1.9**			**81.2**			**1.6**
GRADE: US 2																
2	Region 10	0.0	0.0	0.0	3.9	3.5	4.3	0.3	0.2	0.4	77.5	77.1	77.9	0.0	0.0	0.0
1	Region 14	0.0	0.0	0.0	3.1	3.1	3.1	1.1	1.1	1.1	77.1	77.1	77.1	0.2	0.2	0.2
3	Region 15	0.0	0.0	0.0	4.0	3.9	4.2	0.7	0.7	0.7	77.4	77.1	77.8	0.0	0.0	0.0
3	Region 16	0.0	0.0	0.0	3.1	1.8	3.8	1.2	0.5	2.2	76.5	74.9	77.8	1.0	0.2	1.9
4	Region 17	0.0	0.0	0.0	3.7	2.7	4.7	0.8	0.3	1.4	75.4	71.9	76.9	0.3	0.0	1.2
1	Region 18	0.0	0.0	0.0	1.1	1.1	1.1	2.3	2.3	2.3	75.3	75.3	75.3	0.2	0.2	0.2
4	Region 19	0.0	0.0	0.0	3.8	3.1	4.3	1.2	0.5	1.6	76.2	75.2	76.9	0.5	0.0	1.2
2	Region 21	0.0	0.0	0.0	3.4	3.1	3.8	0.6	0.4	0.7	76.4	75.7	77.1	0.4	0.0	0.8
1	Region 22	0.0	0.0	0.0	3.4	3.4	3.4	0.9	0.9	0.9	77.1	77.1	77.1	1.1	1.1	1.1
4	Region 23	0.0	0.0	0.0	3.4	3.3	3.5	1.0	0.5	1.3	76.8	75.9	77.9	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	3.1	3.1	3.1	0.7	0.7	0.7	77.0	77.0	77.0	0.0	0.0	0.0
3	Region 25	0.0	0.0	0.0	2.3	1.5	3.3	1.3	0.7	2.1	75.5	74.0	76.7	0.2	0.0	0.4
1	Region 27	0.0	0.0	0.0	3.8	3.8	3.8	0.7	0.7	0.7	79.2	79.2	79.2	0.0	0.0	0.0
9	Region 28	0.0	0.0	0.0	3.9	3.1	4.7	0.9	0.5	1.5	76.2	72.1	79.3	0.2	0.0	0.5
1	Region 29	0.0	0.0	0.0	3.2	3.2	3.2	0.5	0.5	0.5	78.7	78.7	78.7	0.0	0.0	0.0
4	Region 30	0.1	0.0	0.4	4.1	3.7	4.6	0.9	0.5	1.5	75.7	74.9	77.2	0.0	0.0	0.2
2	Region 31	0.0	0.0	0.0	2.8	1.9	3.7	1.8	0.9	2.7	77.3	77.0	77.6	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	3.1	3.1	3.1	0.2	0.2	0.2	78.1	78.1	78.1	0.0	0.0	0.0
1	Region 33	0.0	0.0	0.0	3.1	3.1	3.1	1.1	1.1	1.1	77.2	77.2	77.2	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	3.5	3.5	3.5	0.4	0.4	0.4	78.9	78.9	78.9	0.0	0.0	0.0

TABLE 6: USA GRADING OF YELLOW MAIZE (2008/09) (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.
10	Region 35	0.0	0.0	0.0	1.4	0.6	3.1	0.4	0.2	0.7	71.2	69.9	77.8	0.0	0.0	0.0
6	Region 36	0.1	0.0	0.3	4.1	3.3	4.7	0.7	0.3	1.6	76.7	75.7	78.2	0.2	0.0	0.8
65	**Ave US 2**	**0.0**			**3.2**			**0.8**			**75.8**			**0.2**		
	Min US 2		**0.0**			**0.6**			**0.2**			**69.9**			**0.0**	
	Max US 2			**0.4**			**4.7**			**2.7**			**79.3**			**1.9**
GRADE: US 3																
1	Region 12	0.0	0.0	0.0	6.7	6.7	6.7	0.9	0.9	0.9	74.7	74.7	74.7	0.6	0.6	0.6
1	Region 13	0.0	0.0	0.0	6.2	6.2	6.2	0.6	0.6	0.6	75.6	75.6	75.6	0.0	0.0	0.0
1	Region 20	0.0	0.0	0.0	6.2	6.2	6.2	0.8	0.8	0.8	76.6	76.6	76.6	0.7	0.7	0.7
1	Region 26	0.0	0.0	0.0	2.7	2.7	2.7	3.7	3.7	3.7	76.7	76.7	76.7	0.2	0.2	0.2
1	Region 28	0.0	0.0	0.0	6.0	6.0	6.0	1.1	1.1	1.1	75.2	75.2	75.2	0.9	0.9	0.9
2	Region 30	0.3	0.0	0.5	4.8	2.8	6.7	0.9	0.8	1.0	75.5	73.1	77.9	0.2	0.0	0.4
3	Region 31	0.0	0.0	0.0	6.2	5.8	6.7	1.0	0.8	1.2	75.4	75.3	75.5	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	5.8	5.8	5.8	0.9	0.9	0.9	76.3	76.3	76.3	1.5	1.5	1.5
1	Region 36	0.0	0.0	0.0	6.5	6.5	6.5	0.9	0.9	0.9	77.1	77.1	77.1	0.5	0.5	0.5
12	**Ave US 3**	**0.0**			**5.7**			**1.2**			**75.8**			**0.4**		
	Min US 3		**0.0**			**2.7**			**0.6**			**73.1**			**0.0**	
	Max US 3			**0.5**			**6.7**			**3.7**			**77.9**			**1.5**
GRADE: US 4																
1	Region 13	0.0	0.0	0.0	8.9	8.9	8.9	0.6	0.6	0.6	75.7	75.7	75.7	1.1	1.1	1.1
1	Region 33	0.0	0.0	0.0	7.1	7.1	7.1	1.4	1.4	1.4	75.9	75.9	75.9	0.0	0.0	0.0
1	Region 36	0.0	0.0	0.0	7.7	7.7	7.7	0.7	0.7	0.7	71.8	71.8	71.8	1.6	1.6	1.6
3	**Ave US 4**	**0.0**			**7.9**			**0.9**			**74.5**			**0.9**		
	Min US 4		**0.0**			**7.1**			**0.6**			**71.8**			**0.0**	
	Max US 4			**0.0**			**8.9**			**1.4**			**75.9**			**1.6**
GRADE: US 5																
1	Region 13	0.0	0.0	0.0	13.3	13.3	13.3	0.6	0.6	0.6	75.3	75.3	75.3	0.7	0.7	0.7
1	Region 30	1.9	1.9	1.9	3.6	3.6	3.6	0.6	0.6	0.6	76.9	76.9	76.9	3.0	3.0	3.0
2	**Ave US 5**	**1.0**			**8.4**			**0.6**			**76.1**			**1.9**		
	Min US 5		**0.0**			**3.6**			**0.6**			**75.3**			**0.7**	
	Max US 5			**1.9**			**13.3**			**0.6**			**76.9**			**3.0**
GRADE: Mixed Grade																
1	Region 32	0.0	0.0	0.0	1.7	1.7	1.7	0.8	0.8	0.8	76.3	76.3	76.3	6.4	6.4	6.4
1	**Ave Mixed Grade**	**0.0**			**1.7**			**0.8**			**76.3**			**6.4**		
	Min Mixed Grade		**0.0**			**1.7**			**0.8**			**76.3**			**6.4**	
	Max Mixed Grade			**0.0**			**1.7**			**0.8**			**76.3**			**6.4**
GRADE: Sample Grade																
1	Region 17	0.0	0.0	0.0	0.9	0.9	0.9	7.5	7.5	7.5	75.2	75.2	75.2	0.0	0.0	0.0
1	Region 19	0.0	0.0	0.0	15.1	15.1	15.1	0.4	0.4	0.4	74.9	74.9	74.9	13.3	13.3	13.3
2	**Ave Sample Grade**	**0.0**			**8.0**			**3.9**			**75.1**			**6.7**		
	Min Sample Grade		**0.0**			**0.9**			**0.4**			**74.9**			**0.0**	
	Max Sample Grade			**0.0**			**15.1**			**7.5**			**75.2**			**13.3**
327	**Ave yellow maize**	**0.0**			**2.4**			**0.7**			**76.6**			**0.2**		
	Min yellow maize		**0.0**			**0.5**			**0.0**			**69.9**			**0.0**	
	Max yellow maize			**1.9**			**15.1**			**7.5**			**81.2**			**13.3**
810	**Ave maize**	**0.0**			**2.5**			**0.7**			**77.2**			**0.2**		
	Min maize		**0.0**			**0.4**			**0.0**			**61.6**			**0.0**	
	Max maize			**1.9**			**16.9**			**7.5**			**82.8**			**13.3**

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

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 (2008/09)

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	3.5	3.5	3.5	8.4	8.4	8.4	73.3	73.3	73.3
13	Region 12	4.0	3.8	4.3	8.4	8.0	8.8	72.2	71.1	72.9
16	Region 13	4.0	3.6	4.2	8.3	7.5	9.0	72.5	71.5	73.2
35	Region 14	4.1	3.9	4.7	8.5	8.0	9.4	72.3	71.1	73.4
23	Region 15	4.0	3.8	4.4	8.6	7.9	9.6	72.8	72.1	73.5
38	Region 16	4.0	3.6	4.5	8.2	7.5	8.8	72.5	71.5	74.2
31	Region 17	4.0	3.6	5.1	8.1	6.9	9.6	72.4	71.0	73.8
10	Region 18	4.0	3.9	4.2	8.6	7.9	9.2	72.3	71.7	73.1
6	Region 19	4.0	3.7	4.5	8.8	8.2	9.8	72.1	70.7	72.8
15	Region 20	4.0	3.8	4.3	8.3	7.0	9.3	72.4	71.4	73.1
24	Region 21	4.1	3.8	4.6	8.4	7.7	9.2	72.3	71.4	73.2
19	Region 22	4.1	3.8	4.7	8.4	7.8	9.1	71.9	70.7	72.6
27	Region 23	3.9	3.8	4.1	8.4	7.4	8.9	72.2	71.4	73.3
16	Region 24	4.1	3.9	4.4	8.6	7.0	10.1	72.0	70.7	74.1
11	Region 25	4.1	3.6	4.6	7.7	6.4	8.9	72.8	72.0	73.6
17	Region 26	4.0	3.8	4.2	7.9	6.9	8.6	72.4	71.7	73.2
6	Region 27	4.2	4.0	4.5	8.1	7.9	8.3	72.2	71.8	72.7
22	Region 28	4.0	3.6	4.3	8.0	7.4	8.7	72.7	71.7	73.7
28	Region 29	4.0	3.8	4.2	8.4	6.9	10.4	72.6	71.6	73.4
18	Region 30	4.0	3.6	4.4	8.3	7.1	9.5	72.7	72.1	73.6
12	Region 31	4.0	3.8	4.1	8.1	6.9	8.9	72.7	71.9	73.5
18	Region 32	4.1	3.9	4.8	8.0	7.0	8.6	72.6	71.9	73.4
1	Region 33	4.0	4.0	4.0	7.7	7.7	7.7	72.8	72.8	72.8
10	Region 34	4.1	3.8	4.5	8.0	6.6	9.0	72.4	71.4	72.9
9	Region 35	4.2	3.8	4.4	8.6	7.0	9.7	72.2	71.4	73.3
14	Region 36	4.1	3.6	4.7	8.5	8.2	8.9	72.4	71.4	73.2
440	**Ave WM 1**	**4.0**			**8.3**			**72.4**		
	Min WM 1		**3.5**			**6.4**			**70.7**	
	Max WM 1			**5.1**			**10.4**			**74.2**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2008/09)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1										
15	Region 10	3.2	3.1	3.4	7.6	7.0	8.3	73.8	72.9	74.6
12	Region 11	3.3	3.1	3.4	7.6	7.1	8.2	73.6	72.8	74.8
5	Region 12	3.5	3.3	3.6	8.9	8.4	9.4	72.9	72.7	73.2
4	Region 13	3.6	3.4	3.9	8.7	8.2	8.9	72.6	72.0	73.2
12	Region 14	3.6	3.3	3.8	8.7	8.1	9.2	73.0	71.9	73.6
7	Region 16	3.4	3.2	3.8	8.1	7.3	9.2	73.5	72.6	74.5
8	Region 15	3.5	2.9	4.0	8.6	8.0	9.7	73.0	72.1	74.2
11	Region 17	3.6	2.9	4.4	8.6	8.0	9.1	72.7	71.1	73.5
4	Region 18	3.6	3.5	3.8	8.5	8.3	8.9	72.6	72.0	73.4
3	Region 19	3.5	3.4	3.5	8.3	7.8	8.7	73.6	73.4	74.0
5	Region 20	3.7	3.6	3.8	8.3	8.0	8.7	73.0	72.6	73.5
7	Region 21	3.6	3.4	3.8	7.8	6.6	8.8	73.3	72.4	74.6
4	Region 22	3.5	3.4	3.6	8.3	7.3	9.1	72.7	72.2	73.2
8	Region 23	3.7	3.5	3.8	9.2	8.6	9.7	72.0	71.5	72.8
4	Region 24	3.7	3.6	3.7	8.5	7.6	8.9	72.9	72.4	73.7
23	Region 25	3.5	3.2	3.7	7.7	7.0	8.4	73.6	72.7	74.5
14	Region 26	3.6	3.4	3.9	8.4	7.3	9.7	72.9	72.2	74.1
10	Region 27	3.7	3.5	4.7	8.4	7.6	10.2	72.8	72.0	73.7
46	Region 28	3.6	3.0	4.2	8.2	7.0	9.4	73.2	71.3	74.7
5	Region 29	3.6	3.5	3.7	8.1	7.7	8.7	73.2	72.6	74.0
23	Region 30	3.6	3.1	4.1	7.9	7.0	9.3	73.6	72.5	74.7
21	Region 31	3.7	3.5	3.9	8.1	7.5	8.8	73.0	72.2	74.2
15	Region 32	3.7	3.2	3.9	8.1	6.2	9.1	73.3	72.2	74.1
4	Region 33	3.6	3.4	3.7	8.3	8.0	8.6	73.1	73.0	73.4
8	Region 34	3.8	3.5	4.0	8.5	8.1	9.1	73.0	72.4	74.0
12	Region 35	4.3	3.6	4.6	8.8	6.8	10.6	72.2	71.3	74.3
7	Region 36	3.5	3.3	3.8	7.9	7.4	8.3	73.6	72.8	74.3
297	**Ave YM 1**	**3.6**			**8.2**			**73.1**		
	Min YM 1		**2.9**			**6.2**			**71.1**	
	Max YM 1			**4.7**			**10.6**			**74.8**

TABLE 9: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE (2008/09) (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 2										
2	Region 12	3.9	3.8	4.0	8.1	8.0	8.2	72.5	72.2	72.9
1	Region 13	3.7	3.7	3.7	8.2	8.2	8.2	73.2	73.2	73.2
1	Region 14	4.0	4.0	4.0	8.3	8.3	8.3	73.1	73.1	73.1
2	Region 15	3.8	3.7	3.9	8.7	8.6	8.7	72.3	72.3	72.4
2	Region 16	3.9	3.8	4.0	8.2	7.9	8.5	72.9	72.2	73.6
2	Region 17	3.9	3.8	3.9	8.5	8.2	8.8	72.3	72.0	72.7
3	Region 19	3.8	3.7	4.0	8.7	8.6	8.8	72.4	71.7	72.9
2	Region 20	4.0	3.9	4.0	8.8	8.1	9.5	72.4	72.1	72.8
3	Region 23	3.8	3.8	3.9	8.8	8.3	9.6	72.2	71.7	72.6
1	Region 25	3.8	3.8	3.8	7.8	7.8	7.8	73.4	73.4	73.4
2	Region 26	3.9	3.7	4.0	7.7	7.6	7.8	72.9	72.6	73.3
3	Region 28	3.7	3.5	4.0	7.9	7.7	8.2	72.9	72.6	73.2
3	Region 29	3.9	3.8	3.9	8.0	7.9	8.1	72.7	72.4	73.0
4	Region 30	3.9	3.6	4.1	8.7	8.4	9.2	72.5	72.2	73.1
1	Region 32	4.3	4.3	4.3	8.0	8.0	8.0	71.6	71.6	71.6
2	Region 34	3.8	3.8	3.8	8.5	8.3	8.7	72.6	72.2	73.1
2	Region 36	4.2	3.9	4.5	8.8	8.7	8.8	72.1	71.6	72.6
36	**Ave WM 2**	**3.9**			**8.4**			**72.5**		
	Min WM 2		**3.5**			**7.6**			**71.6**	
	Max WM 2			**4.5**			**9.6**			**73.6**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2008/09) (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: YM 2										
1	Region 10	3.2	3.2	3.2	7.4	7.4	7.4	74.2	74.2	74.2
1	Region 12	3.5	3.5	3.5	8.8	8.8	8.8	73.0	73.0	73.0
2	Region 13	3.4	3.2	3.6	7.9	7.7	8.0	72.7	72.5	73.0
1	Region 17	4.0	4.0	4.0	7.9	7.9	7.9	73.8	73.8	73.8
1	Region 18	3.8	3.8	3.8	8.7	8.7	8.7	72.0	72.0	72.0
2	Region 19	3.3	3.2	3.4	8.9	8.6	9.1	73.5	73.1	74.0
1	Region 20	3.3	3.3	3.3	8.2	8.2	8.2	73.3	73.3	73.5
1	Region 25	3.2	3.2	3.2	7.2	7.2	7.2	74.4	74.4	74.4
1	Region 26	3.5	3.5	3.5	8.3	8.3	8.3	73.2	73.2	73.2
1	Region 28	3.5	3.5	3.5	7.1	7.1	7.1	74.4	74.4	74.4
3	Region 30	3.5	3.4	3.6	8.2	7.9	8.6	73.9	73.4	74.4
4	Region 31	3.8	3.6	3.9	7.5	6.7	7.9	73.2	71.9	74.6
1	Region 33	3.2	3.2	3.2	7.0	7.0	7.0	73.9	73.9	73.9
1	Region 34	3.4	3.4	3.4	8.1	8.1	8.1	73.6	73.6	73.6
1	Region 35	3.2	3.2	3.2	9.6	9.6	9.6	73.9	73.9	73.9
3	Region 36	3.9	3.5	4.4	7.5	6.6	8.2	73.1	72.7	73.9
25	**Ave YM 2**	**3.6**			**8.0**			**73.4**		
	Min YM 2		**3.2**			**6.6**			**71.9**	
	Max YM 2			**4.4**			**9.6**			**74.6**

TABLE 9: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE (2008/09) (continue)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3										
1	Region 16	3.8	3.8	3.8	9.7	9.7	9.7	71.9	71.9	71.9
1	Region 19	3.8	3.8	3.8	9.4	9.4	9.4	71.8	71.8	71.8
1	Region 25	4.2	4.2	4.2	7.5	7.5	7.5	72.5	72.5	72.5
1	Region 36	3.8	3.8	3.8	8.5	8.5	8.5	72.1	72.1	72.1
4	**Ave WM 3**	**3.9**			**8.8**			**72.0**		
	Min WM 3		**3.8**			**7.5**			**71.8**	
	Max WM 3			**4.2**			**9.7**			**72.5**
GRADE: COM										
2	Region 17	4.0	3.7	4.2	9.2	8.9	9.5	71.6	71.6	71.7
1	Region 28	4.0	4.0	4.0	8.0	8.0	8.0	72.1	72.1	72.1
3	**Ave COM**	**4.0**			**8.8**			**71.8**		
	Min COM		**3.7**			**8.0**			**71.6**	
	Max COM			**4.2**			**9.5**			**72.1**
483	**Ave White**	**4.0**			**8.3**			**72.4**		
	Min White		**3.5**			**6.4**			**70.7**	
	Max White			**5.1**			**10.4**			**74.2**
810	**Ave Maize**	**3.8**			**8.3**			**72.7**		
	Min Maize		**2.9**			**6.2**			**70.7**	
	Max Maize			**5.1**			**10.6**			**74.8**

TABLE 9: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE (2008/09) (continue)

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM3										
1	Region 17	3.9	3.9	3.9	8.9	8.9	8.9	72.8	72.8	72.8
1	Region 30	3.8	3.8	3.8	8.4	8.4	8.4	72.7	72.7	72.7
2	**Ave YM3**	**3.9**			**8.7**			**72.7**		
	Min YM3		**3.8**			**8.4**			**72.7**	
	Max YM3			**3.9**			**8.9**			**72.8**
GRADE: COM										
1	Region 16	3.7	3.7	3.7	8.6	8.6	8.6	73.1	73.1	73.1
1	Region 19	3.4	3.4	3.4	8.6	8.6	8.6	73.7	73.7	73.7
1	Region 32	3.5	3.5	3.5	7.5	7.5	7.5	73.3	73.3	73.3
3	**Ave COM**	**3.5**			**8.2**			**73.3**		
	Min COM		**3.4**			**7.5**			**73.1**	
	Max COM			**3.7**			**8.6**			**73.7**
327	**Ave Yellow**	**3.6**			**8.2**			**73.2**		
	Min Yellow		**2.9**			**6.2**			**71.1**	
	Max Yellow			**4.7**			**10.6**			**74.8**
810	**Ave Maize**	**3.8**			**8.3**			**72.7**		
	Min Maize		**2.9**			**6.2**			**70.7**	
	Max Maize			**5.1**			**10.6**			**74.8**

TABLE 10: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE (2008/2009)

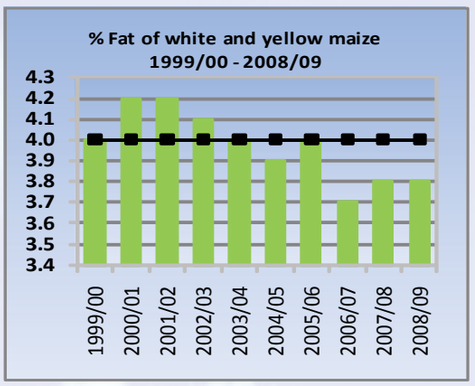
Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	WHITE									
1	Region 11	3.5	3.5	3.5	8.4	8.4	8.4	73.3	73.3	73.3
15	Region 12	4.0	3.8	4.3	8.4	8.0	8.8	72.2	71.1	72.9
17	Region 13	4.0	3.6	4.2	8.3	7.5	9.0	72.5	71.5	73.2
36	Region 14	4.1	3.9	4.7	8.5	8.0	9.4	72.3	71.1	73.4
25	Region 15	3.9	3.7	4.4	8.6	7.9	9.6	72.7	72.1	73.5
41	Region 16	4.0	3.6	4.5	8.2	7.5	9.7	72.5	71.5	74.2
35	Region 17	4.0	3.6	5.1	8.2	6.9	9.6	72.3	71.0	73.8
10	Region 18	4.0	3.9	4.2	8.6	7.9	9.2	72.3	71.7	73.1
10	Region 19	3.9	3.7	4.5	8.9	8.2	9.8	72.1	70.7	72.9
17	Region 20	4.0	3.8	4.3	8.4	7.0	9.5	72.4	71.4	73.1
24	Region 21	4.1	3.8	4.6	8.4	7.7	9.2	72.3	71.4	73.2
19	Region 22	4.1	3.8	4.7	8.4	7.8	9.1	71.9	70.7	72.6
30	Region 23	3.9	3.8	4.1	8.4	7.4	9.6	72.2	71.4	73.3
16	Region 24	4.1	3.9	4.4	8.6	7.0	10.1	72.0	70.7	74.1
13	Region 25	4.0	3.6	4.6	7.7	6.4	8.9	72.8	72.0	73.6
19	Region 26	4.0	3.7	4.2	7.9	6.9	8.6	72.5	71.7	73.3
6	Region 27	4.2	4.0	4.5	8.1	7.9	8.3	72.2	71.8	72.7
26	Region 28	4.0	3.5	4.3	8.0	7.4	8.7	72.7	71.7	73.7
31	Region 29	4.0	3.8	4.2	8.3	6.9	10.4	72.6	71.6	73.4
22	Region 30	4.0	3.6	4.4	8.4	7.1	9.5	72.7	72.1	73.6
12	Region 31	4.0	3.8	4.1	8.1	6.9	8.9	72.7	71.9	73.5
19	Region 32	4.1	3.9	4.8	8.0	7.0	8.6	72.5	71.6	73.4
1	Region 33	4.0	4.0	4.0	7.7	7.7	7.7	72.8	72.8	72.8
12	Region 34	4.0	3.8	4.5	8.1	6.6	9.0	72.4	71.4	73.1
9	Region 35	4.2	3.8	4.4	8.6	7.0	9.7	72.2	71.4	73.3
17	Region 36	4.1	3.6	4.7	8.6	8.2	8.9	72.3	71.4	73.2
483	**Ave white**	**4.0**			**8.3**			**72.4**		
	Min white		**3.5**			**6.4**			**70.7**	
	Max white			**5.1**			**10.4**			**74.2**
	YELLOW									
16	Region 10	3.2	3.1	3.4	7.6	7.0	8.3	73.8	72.9	74.6
12	Region 11	3.3	3.1	3.4	7.6	7.1	8.2	73.6	72.8	74.8
6	Region 12	3.5	3.3	3.6	8.9	8.4	9.4	72.9	72.7	73.2
6	Region 13	3.5	3.2	3.9	8.4	7.7	8.9	72.7	72.0	73.2
12	Region 14	3.6	3.3	3.8	8.7	8.1	9.2	73.0	71.9	73.6
7	Region 15	3.4	3.2	3.8	8.1	7.3	9.2	73.5	72.6	74.5
9	Region 16	3.6	2.9	4.0	8.6	8.0	9.7	73.0	72.1	74.2
13	Region 17	3.7	2.9	4.4	8.6	7.9	9.1	72.8	71.1	73.8
5	Region 18	3.6	3.5	3.8	8.5	8.3	8.9	72.5	72.0	73.4
6	Region 19	3.4	3.2	3.5	8.5	7.8	9.1	73.6	73.1	74.0
6	Region 20	3.6	3.3	3.8	8.3	8.0	8.7	73.0	72.6	73.5
7	Region 21	3.6	3.4	3.8	7.8	6.6	8.8	73.3	72.4	74.6
4	Region 22	3.5	3.4	3.6	8.3	7.3	9.1	72.7	72.2	73.2
8	Region 23	3.7	3.5	3.8	9.2	8.6	9.7	72.0	71.5	72.8
4	Region 24	3.7	3.6	3.7	8.5	7.6	8.9	72.9	72.4	73.7
24	Region 25	3.5	3.2	3.7	7.6	7.0	8.4	73.6	72.7	74.5

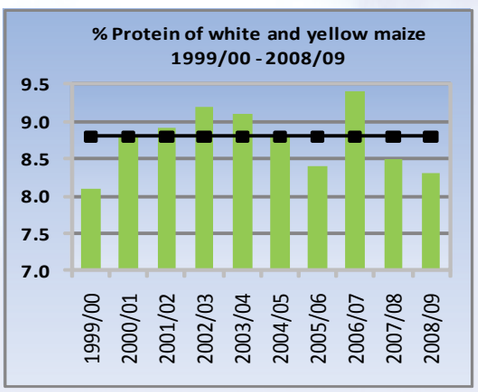
TABLE 10: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE (2008/2009) (continue)

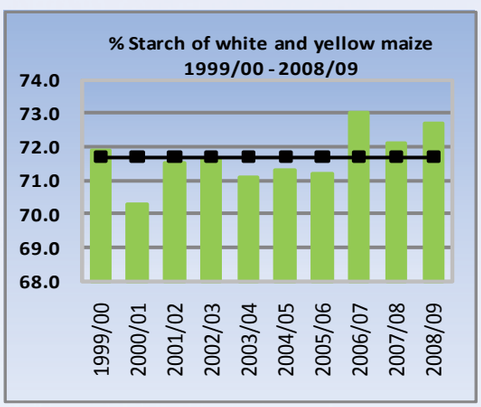
Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
YELLOW										
15	Region 26	3.6	3.4	3.9	8.4	7.3	9.7	72.9	72.2	74.1
10	Region 27	3.7	3.5	4.7	8.4	7.6	10.2	72.8	72.0	73.7
47	Region 28	3.6	3.0	4.2	8.1	7.0	9.4	73.3	71.3	74.7
5	Region 29	3.6	3.5	3.7	8.1	7.7	8.7	73.2	72.6	74.0
27	Region 30	3.6	3.1	4.1	7.9	7.0	9.3	73.6	72.5	74.7
25	Region 31	3.7	3.5	3.9	8.0	6.7	8.8	73.0	71.9	74.6
16	Region 32	3.7	3.2	3.9	8.1	6.2	9.1	73.3	72.2	74.1
5	Region 33	3.5	3.2	3.7	8.0	7.0	8.6	73.2	73.0	73.9
9	Region 34	3.7	3.4	4.0	8.4	8.1	9.1	73.1	72.4	74.0
13	Region 35	4.2	3.2	4.6	8.9	6.8	10.6	72.3	71.3	74.3
10	Region 36	3.6	3.3	4.4	7.8	6.6	8.3	73.5	72.7	74.3
327	**Ave yellow**	**3.6**			**8.2**			**73.2**		
	Min yellow		**2.9**			**6.2**			**71.1**	
	Max yellow			**4.7**			**10.6**			**74.8**
WHITE AND YELLOW										
16	Region 10	3.2	3.1	3.4	7.6	7.0	8.3	73.8	72.9	74.6
13	Region 11	3.3	3.1	3.5	7.6	7.1	8.4	73.6	72.8	74.8
21	Region 12	3.8	3.3	4.3	8.5	8.0	9.4	72.4	71.1	73.2
23	Region 13	3.9	3.2	4.2	8.3	7.5	9.0	72.6	71.5	73.2
48	Region 14	3.9	3.3	4.7	8.6	8.0	9.4	72.5	71.1	73.6
32	Region 15	3.8	3.2	4.4	8.5	7.3	9.6	72.9	72.1	74.5
50	Region 16	3.9	2.9	4.5	8.3	7.5	9.7	72.6	71.5	74.2
48	Region 17	3.9	2.9	5.1	8.3	6.9	9.6	72.5	71.0	73.8
15	Region 18	3.9	3.5	4.2	8.6	7.9	9.2	72.4	71.7	73.4
16	Region 19	3.7	3.2	4.5	8.7	7.8	9.8	72.7	70.7	74.0
23	Region 20	3.9	3.3	4.3	8.4	7.0	9.5	72.6	71.4	73.5
31	Region 21	4.0	3.4	4.6	8.2	6.6	9.2	72.5	71.4	74.6
23	Region 22	4.0	3.4	4.7	8.4	7.3	9.1	72.0	70.7	73.2
38	Region 23	3.9	3.5	4.1	8.6	7.4	9.7	72.2	71.4	73.3
20	Region 24	4.0	3.6	4.4	8.6	7.0	10.1	72.2	70.7	74.1
37	Region 25	3.7	3.2	4.6	7.7	6.4	8.9	73.3	72.0	74.5
34	Region 26	3.8	3.4	4.2	8.1	6.9	9.7	72.7	71.7	74.1
16	Region 27	3.9	3.5	4.7	8.3	7.6	10.2	72.6	71.8	73.7
73	Region 28	3.7	3.0	4.3	8.1	7.0	9.4	73.1	71.3	74.7
36	Region 29	3.9	3.5	4.2	8.3	6.9	10.4	72.7	71.6	74.0
49	Region 30	3.8	3.1	4.4	8.1	7.0	9.5	73.2	72.1	74.7
37	Region 31	3.8	3.5	4.1	8.0	6.7	8.9	72.9	71.9	74.6
35	Region 32	3.9	3.2	4.8	8.0	6.2	9.1	72.9	71.6	74.1
6	Region 33	3.6	3.2	4.0	8.0	7.0	8.6	73.1	72.8	73.9
21	Region 34	3.9	3.4	4.5	8.2	6.6	9.1	72.7	71.4	74.0
22	Region 35	4.2	3.2	4.6	8.8	6.8	10.6	72.2	71.3	74.3
27	Region 36	3.9	3.3	4.7	8.3	6.6	8.9	72.7	71.4	74.3
810	**Ave white & yellow**	**3.8**			**8.3**			**72.7**		
	Min white & yellow		**2.9**			**6.2**			**70.7**	
	Max white & yellow			**5.1**			**10.6**			**74.8**

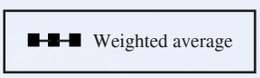
TABLE 11: NUTRITIONAL VALUES OF SOUTH AFRICAN WHITE AND YELLOW MAIZE 1999/00 - 2008/09

Season	Number of samples	% Fat			% Protein			% Starch		
		av.	min.	max.	av.	min.	max.	av.	min.	max.
White Maize										
1999/00	493	4.0	3.2	5.1	8.1	6.3	10.6	71.9	68.9	75.1
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
Weighted Average		**4.0**			**8.8**			**71.5**		
Minimum			**2.9**			**6.3**			**58.3**	
Maximum				**5.7**			**12.0**			**78.3**
Yellow Maize										
1999/00	407	4.1	3.0	5.1	8.0	6.3	9.9	72.0	68.4	74.4
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
Weighted Average		**3.9**			**8.7**			**71.9**		
Minimum			**2.8**			**6.2**			**66.0**	
Maximum				**5.5**			**12.7**			**75.9**
White and Yellow Maize										
1999/00	900	4.0	3.0	5.1	8.1	6.3	10.6	71.9	68.4	75.1
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
Weighted Average		**4.0**			**8.8**			**71.7**		
Minimum			**2.8**			**6.2**			**58.3**	
Maximum				**5.7**			**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 (2008/2009)

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			< 6.3 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	80.9	80.9	80.9	32.8	32.8	32.8	1.8	1.8	1.8	50.1	50.1	50.1	48.1	48.1	48.1	1.1	1.1	1.1	0.8	0.8	0.8	1	1	1	100.7	100.7	100.7
13	Region 12	78.0	74.4	80.1	35.1	29.6	37.5	26.0	10.5	36.2	63.7	58.3	71.7	10.2	5.1	17.8	1.5	0.7	3.3	1.1	0.3	2.0	3	0	7	94.4	79.7	103.5
16	Region 13	77.5	76.0	79.1	34.3	32.1	36.8	28.6	19.0	35.2	61.7	55.0	67.1	9.7	4.8	14.8	1.1	0.4	2.1	0.8	0.3	1.6	3	1	5	90.4	82.7	98.2
35	Region 14	78.8	75.3	82.8	35.3	28.0	38.4	31.1	14.9	41.6	59.6	49.8	69.5	9.3	3.8	18.0	1.1	0.3	2.4	0.8	0.2	1.7	3	0	13	98.1	91.2	111.9
23	Region 15	79.4	76.2	80.5	34.6	29.8	36.6	31.0	16.2	43.4	60.6	52.5	71.1	8.3	2.9	15.3	1.0	0.4	2.7	0.7	0.2	2.3	4	1	19	98.8	92.2	106.0
38	Region 16	78.3	74.6	81.3	35.7	31.2	43.4	27.9	1.7	42.4	62.6	52.0	77.9	9.6	2.9	37.8	1.4	0.5	4.3	1.1	0.3	4.1	3	0	13	94.3	82.2	106.0
31	Region 17	76.1	70.1	79.0	34.2	30.3	39.8	25.3	6.4	42.5	64.2	49.9	79.2	10.5	2.1	23.2	1.9	0.9	3.4	1.5	0.5	2.8	4	0	10	93.0	79.1	115.4
10	Region 18	77.1	75.0	78.4	35.9	31.4	38.4	27.7	18.7	34.5	63.4	57.8	69.6	8.9	5.1	14.4	1.8	0.9	3.3	1.4	0.4	2.9	5	0	18	97.7	87.9	106.0
6	Region 19	77.6	76.8	78.2	35.5	33.8	39.0	30.1	25.3	35.8	62.8	59.1	66.0	7.2	4.0	9.4	1.2	0.9	1.7	0.9	0.7	1.3	5	3	6	98.1	89.7	106.7
15	Region 20	77.2	74.3	78.7	34.7	31.3	40.1	25.6	8.8	36.3	64.5	57.6	75.6	9.9	4.8	15.6	1.7	0.6	3.1	1.3	0.5	2.4	7	0	31	91.7	81.7	103.7
24	Region 21	77.9	76.4	79.8	35.1	31.0	42.8	24.9	12.8	33.3	64.9	59.1	76.4	10.1	5.3	15.7	1.6	0.6	2.8	1.3	0.6	2.4	3	0	10	94.3	87.2	106.3
19	Region 22	78.5	77.3	80.7	35.8	32.1	38.0	31.5	16.4	43.1	60.9	54.3	73.5	7.6	2.6	14.4	1.1	0.5	2.4	0.8	0.3	2.2	1	0	8	98.1	91.4	103.1
27	Region 23	78.5	74.2	80.3	35.4	31.0	44.0	28.2	15.1	39.2	63.2	55.1	75.9	8.6	5.4	14.0	1.4	0.7	3.0	1.1	0.4	2.1	3	0	16	95.8	74.0	105.9
16	Region 24	77.1	61.6	79.9	35.3	27.9	40.5	22.5	0.5	39.0	63.6	48.5	74.8	13.9	4.2	51.0	1.9	0.6	6.1	1.4	0.4	3.6	5	0	15	91.7	80.7	106.5
11	Region 25	76.6	75.2	78.8	33.0	29.1	36.5	18.7	12.2	27.4	68.5	65.2	72.2	12.8	6.1	17.3	1.0	0.2	2.2	0.8	0.1	1.7	2	0	5	84.6	70.0	98.4
17	Region 26	76.7	73.6	79.9	33.3	30.5	36.6	20.9	12.4	40.9	66.0	52.1	76.6	13.1	7.0	24.8	1.6	0.5	3.7	1.2	0.4	2.7	4	0	16	92.2	72.5	100.3
6	Region 27	77.2	76.0	78.5	35.2	34.2	36.3	25.8	17.3	31.0	64.5	58.0	70.8	9.8	6.6	11.9	4.2	1.1	7.3	2.6	0.7	4.3	24	1	50	89.9	83.5	96.9
22	Region 28	77.5	73.9	79.1	34.8	31.6	37.7	24.3	13.1	37.4	65.6	57.1	74.1	10.2	5.5	19.2	1.3	0.4	4.3	1.0	0.2	3.9	8	2	23	89.9	82.8	96.2
28	Region 29	77.3	72.8	80.7	35.0	27.1	39.8	25.9	10.6	46.4	62.6	43.1	74.0	11.5	4.6	30.5	1.2	0.4	4.2	0.9	0.2	3.9	3	0	15	93.9	72.1	106.3
18	Region 30	77.6	75.9	79.0	34.6	31.5	38.3	19.1	4.5	43.0	66.6	46.8	78.4	14.3	4.7	36.5	1.5	0.4	6.3	1.0	0.1	4.2	9	2	33	94.7	82.4	107.8
12	Region 31	77.7	74.1	79.2	37.5	31.4	40.9	15.3	4.5	30.0	71.3	63.3	84.0	13.4	5.9	24.0	1.1	0.4	2.2	1.0	0.4	2.0	5	0	11	93.6	85.1	102.3
18	Region 32	77.9	76.3	79.4	36.8	33.3	40.1	29.4	22.8	42.0	62.0	52.7	69.0	8.6	5.3	11.1	1.2	0.3	2.6	0.9	0.2	2.3	6	0	20	89.9	78.6	107.5
1	Region 33	77.2	77.2	77.2	34.1	34.1	34.1	34.9	34.9	34.9	59.0	59.0	59.0	6.1	6.1	6.1	0.6	0.6	0.6	0.5	0.5	0.5	2	2	2	83.7	83.7	83.7
10	Region 34	77.9	73.8	79.8	36.2	34.1	38.7	30.8	2.7	45.2	59.1	50.4	67.7	10.1	4.4	29.6	1.2	0.3	2.4	0.9	0.2	1.8	5	1	16	89.7	70.6	100.2
9	Region 35	77.0	74.5	80.6	35.3	32.6	39.7	26.2	11.6	33.5	63.5	57.8	69.1	10.4	5.8	25.3	0.9	0.2	1.7	0.6	0.2	1.1	4	2	10	97.3	89.1	105.3
14	Region 36	76.7	74.0	78.0	34.0	31.1	37.4	17.9	4.3	26.0	66.5	59.6	80.0	15.6	9.2	22.5	1.4	0.3	2.4	1.1	0.3	1.7	10	2	24	98.6	89.0	103.6
440	**Ave WM 1**	**77.7**			**35.1**			**26.0**			**63.4**			**10.5**			**1.4**			**1.1**			**5**			**94.1**		
	Min WM 1		**61.6**			**27.1**			**0.5**			**43.1**			**2.1**			**0.2**			**0.1**			**0**			**70.0**	
	Max WM 1			**82.8**			**44.0**			**46.4**			**84.0**			**51.0**			**7.3**			**4.3**			**50**			**115.4**

TABLE 12: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE (2008/2009)
(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			< 6.3 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																												
2	Region 12	77.1	76.9	77.2	35.3	34.7	35.9	32.8	29.2	36.3	56.8	56.5	57.1	10.5	7.2	13.7	2.0	1.3	2.6	1.4	0.8	2.0	6	5	7	90.6	88.3	92.9
1	Region 13	77.2	77.2	77.2	32.6	32.6	32.6	29.5	29.5	29.5	61.1	61.1	61.1	9.4	9.4	9.4	1.0	1.0	1.0	0.8	0.8	0.8	3	3	3	91.4	91.4	91.4
1	Region 14	79.0	79.0	79.0	35.2	35.2	35.2	33.7	33.7	33.7	59.5	59.5	59.5	6.8	6.8	6.8	1.1	1.1	1.1	0.7	0.7	0.7	5	5	5	100.6	100.6	100.6
2	Region 15	78.4	78.4	78.4	33.8	32.6	35.0	30.4	25.7	35.0	61.2	58.0	64.4	8.5	7.0	9.9	1.9	0.9	2.8	1.3	0.8	1.7	7	0	13	100.9	98.8	102.9
2	Region 16	77.3	75.9	78.7	36.0	34.6	37.4	34.7	30.2	39.2	58.1	52.0	64.2	7.2	5.6	8.8	1.2	0.9	1.4	0.9	0.8	0.9	6	3	8	87.5	87.4	87.5
2	Region 17	76.8	76.3	77.3	32.5	32.2	32.7	27.4	25.9	28.9	62.0	60.0	63.9	10.7	10.2	11.1	1.5	1.4	1.6	1.0	0.7	1.2	2	1	3	88.9	88.6	89.2
3	Region 19	77.3	76.3	78.4	35.7	33.2	37.1	31.1	21.9	43.3	60.8	49.2	69.0	8.1	7.5	9.1	1.7	1.7	1.7	1.2	0.9	1.4	2	0	5	93.1	90.9	94.7
2	Region 20	77.5	77.0	77.9	35.3	33.3	37.2	25.2	21.6	28.8	66.1	64.6	67.5	8.8	6.6	10.9	1.8	1.6	2.0	1.6	1.5	1.7	4	3	4	96.3	89.0	103.5
3	Region 23	77.7	76.9	78.5	35.1	34.0	35.8	28.1	19.3	33.8	62.7	56.5	71.1	9.2	5.7	12.3	1.7	1.2	2.5	1.2	0.8	1.9	2	1	4	98.1	95.9	102.2
1	Region 25	76.2	76.2	76.2	32.9	32.9	32.9	15.4	15.4	15.4	63.1	63.1	63.1	21.5	21.5	21.5	2.7	2.7	2.7	1.9	1.9	1.9	5	5	5	81.5	81.5	81.5
2	Region 26	75.5	74.9	76.1	31.5	31.1	31.9	24.4	20.1	28.6	64.9	61.6	68.1	10.8	9.8	11.8	2.0	1.8	2.2	1.1	1.0	1.1	3	0	5	79.0	75.4	82.6
3	Region 28	77.5	75.8	79.7	33.2	30.9	34.9	21.7	20.2	22.8	64.8	63.6	67.2	13.5	10.8	16.2	1.9	1.4	2.8	1.4	1.2	1.7	7	3	14	92.7	89.1	96.0
3	Region 29	77.2	74.7	78.6	35.5	28.9	39.1	30.9	17.4	39.4	58.6	48.1	69.9	10.5	6.4	12.7	2.0	1.6	2.7	1.5	1.1	1.9	7	1	11	89.3	77.9	98.0
4	Region 30	76.8	75.4	78.8	36.9	33.6	40.8	30.5	11.0	43.3	58.4	47.0	65.6	11.1	3.3	23.4	5.6	0.5	11.7	3.9	0.2	8.7	23	5	39	91.9	70.4	104.3
1	Region 32	75.1	75.1	75.1	34.5	34.5	34.5	18.0	18.0	18.0	73.1	73.1	73.1	8.9	8.9	8.9	2.3	2.3	2.3	2.0	2.0	2.0	3	3	3	80.7	80.7	80.7
2	Region 34	75.2	74.3	76.1	35.0	32.3	37.6	28.8	14.2	43.3	60.7	49.5	71.8	10.6	7.2	14.0	2.0	1.5	2.4	1.5	1.1	1.8	2	1	2	86.6	82.3	90.9
2	Region 36	75.5	74.4	76.5	34.8	33.3	36.3	19.4	18.9	19.8	64.4	61.1	67.7	16.3	12.5	20.0	3.0	1.5	4.5	2.6	1.2	3.9	9	4	14	99.0	96.1	101.8
36	**Ave WM 2**	**76.9**			**34.7**			**27.8**			**61.6**			**10.6**			**2.3**			**1.6**			**7**			**91.6**		
	Min WM 2		**74.3**			**28.9**			**11.0**			**47.0**			**3.3**			**0.5**			**0.2**			**0**			**70.4**	
	Max WM 2			**79.7**			**40.8**			**43.3**			**73.1**			**23.4**			**11.7**			**8.7**			**39**			**104.3**

TABLE 12: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE (2008/2009)
(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			< 6.3 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																												
1	Region 16	79.4	79.4	79.4	40.5	40.5	40.5	39.1	39.1	39.1	55.5	55.5	55.5	5.4	5.4	5.4	2.4	2.4	2.4	1.6	1.6	1.6	2	2	2	100.5	100.5	100.5
1	Region 19	75.4	75.4	75.4	39.6	39.6	39.6	24.8	24.8	24.8	68.8	68.8	68.8	6.4	6.4	6.4	1.7	1.7	1.7	1.3	1.3	1.3	1	1	1	94.9	94.9	94.9
1	Region 25	73.8	73.8	73.8	33.1	33.1	33.1	33.3	33.3	33.3	56.9	56.9	56.9	9.8	9.8	9.8	10.8	10.8	10.8	8.1	8.1	8.1	29	29	29	82.9	82.9	82.9
1	Region 36	75.2	75.2	75.2	34.1	34.1	34.1	4.4	4.4	4.4	75.0	75.0	75.0	20.6	20.6	20.6	3.3	3.3	3.3	2.6	2.6	2.6	4	4	4	98.4	98.4	98.4
4	**Ave WM 3**	**76.0**			**36.8**			**25.4**			**64.1**			**10.6**			**4.6**			**3.4**			**9**			**94.2**		
	Min WM 3		**73.8**			**33.1**			**4.4**			**55.5**			**5.4**			**1.7**			**1.3**			**1**			**82.9**	
	Max WM 3			**79.4**			**40.5**			**39.1**			**75.0**			**20.6**			**10.8**			**8.1**			**29**			**100.5**
GRADE: COM																												
2	Region 17	72.9	71.8	74.0	34.3	33.5	35.0	33.8	26.8	40.7	59.6	56.3	62.9	6.7	3.0	10.3	1.9	1.8	1.9	1.2	1.1	1.3	6	2	9	101.5	97.1	105.9
1	Region 28	74.3	74.3	74.3	38.7	38.7	38.7	22.9	22.9	22.9	69.9	69.9	69.9	7.2	7.2	7.2	0.9	0.9	0.9	0.7	0.7	0.7	13	13	13	93.7	93.7	93.7
3	**Ave COM**	**73.4**			**35.7**			**30.1**			**63.0**			**6.8**			**1.5**			**1.0**			**8**			**98.9**		
	Min COM		**71.8**			**33.5**			**22.9**			**56.3**			**3.0**			**0.9**			**0.7**			**2**			**93.7**	
	Max COM			**74.3**			**38.7**			**40.7**			**69.9**			**10.3**			**1.9**			**1.3**			**13**			**105.9**
483	**Ave white maize**	**77.6**			**35.1**			**26.2**			**63.3**			**10.5**			**1.5**			**1.1**			**5**			**93.9**		
	Min white maize		**61.6**			**27.1**			**0.5**			**43.1**			**2.1**			**0.2**			**0.1**			**0**			**70.0**	
	Max white maize			**82.8**			**44.0**			**46.4**			**84.0**			**51.0**			**11.7**			**8.7**			**50**			**115.4**
810	**Ave maize**	**77.2**			**34.2**			**21.9**			**64.6**			**13.4**			**1.6**			**1.2**			**5**			**93.6**		
	Min maize		**61.6**			**24.2**			**0.5**			**43.1**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
	Max maize			**82.8**			**45.4**			**52.8**			**84.0**			**51.0**			**11.7**			**9.9**			**50**			**115.4**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2008/2009)

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			< 6.3 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																												
15	Region 10	77.2	75.1	78.3	37.6	33.2	45.4	6.6	2.9	10.4	72.2	64.4	79.9	21.2	13.9	31.2	1.8	0.6	10.3	1.5	0.2	9.9	3	0	6	86.3	81.1	95.7
12	Region 11	77.0	76.0	77.9	33.7	31.6	36.3	7.0	1.3	22.1	67.0	60.5	72.0	26.0	9.9	34.9	2.1	1.3	3.0	1.5	1.0	1.9	3	0	7	86.3	77.3	94.3
5	Region 12	77.1	75.9	79.0	31.3	30.2	32.7	12.9	5.4	17.0	71.2	67.9	73.5	15.9	11.5	21.1	1.6	1.0	2.6	1.3	0.9	2.3	4	1	6	93.3	88.9	97.7
4	Region 13	77.3	75.6	78.0	32.9	28.9	35.0	19.3	13.7	29.5	67.3	62.0	70.4	13.5	8.5	17.7	1.5	1.0	2.1	1.2	0.6	1.7	6	1	9	95.5	91.1	99.1
12	Region 14	77.7	72.9	81.2	33.4	26.6	37.8	20.8	6.2	33.3	66.6	52.8	75.5	12.6	6.6	24.2	2.1	1.2	3.2	1.6	0.9	3.1	4	1	8	99.4	86.4	105.3
7	Region 15	77.3	76.7	77.8	33.1	29.3	35.4	8.4	5.3	17.3	72.2	66.5	75.7	19.4	13.8	26.1	1.5	1.1	2.2	1.0	0.7	1.6	5	3	12	91.1	82.7	101.4
8	Region 16	76.0	74.0	78.0	32.4	30.8	33.8	14.9	8.0	22.5	68.8	58.9	75.6	16.3	11.8	22.0	2.4	0.8	5.4	1.5	0.5	3.5	9	3	14	93.6	79.3	103.2
11	Region 17	75.9	71.9	77.4	30.6	25.8	33.6	14.1	3.8	21.3	68.6	64.8	73.6	17.3	9.9	31.0	2.4	1.3	5.4	1.8	1.1	4.3	7	1	14	94.6	82.2	103.3
4	Region 18	76.0	75.4	76.8	34.0	31.9	37.0	26.2	18.4	37.8	62.0	59.1	66.1	11.8	3.1	18.8	2.5	1.8	3.1	2.0	1.7	2.3	2	1	3	90.6	83.6	97.3
3	Region 19	77.5	76.0	79.6	33.9	32.9	35.6	13.0	11.1	14.2	69.8	69.2	70.9	17.1	15.3	19.7	1.5	1.2	1.7	1.2	0.9	1.4	8	3	16	97.9	95.4	101.1
5	Region 20	76.8	76.3	77.4	33.6	31.2	38.2	18.6	14.6	24.4	64.2	54.9	68.1	17.2	10.6	29.7	2.8	1.8	3.4	2.1	1.5	2.5	7	1	11	94.9	89.6	98.0
7	Region 21	76.1	73.5	77.3	31.8	27.6	36.2	13.1	7.5	21.9	70.2	63.1	76.3	16.7	8.7	26.7	2.0	0.6	3.3	1.6	0.5	2.5	4	1	8	93.2	78.8	101.5
4	Region 22	75.8	74.6	77.1	32.4	30.0	35.0	16.7	11.6	22.8	70.2	66.4	73.4	13.1	8.6	16.2	2.0	1.5	2.6	1.4	1.0	1.6	2	0	5	96.9	91.6	105.2
8	Region 23	77.0	75.9	77.9	33.2	31.0	35.5	17.0	12.8	20.2	69.3	66.4	72.8	13.7	8.1	19.4	2.5	1.5	4.5	2.0	0.9	4.1	5	2	11	101.1	90.6	108.0
4	Region 24	76.0	74.3	77.0	30.9	26.9	33.1	15.5	10.1	20.5	67.3	63.8	69.8	17.2	12.3	26.1	1.7	0.8	2.9	1.1	0.2	2.1	4	0	8	96.1	83.8	103.3
23	Region 25	76.3	74.6	77.7	31.3	27.4	35.0	12.7	3.6	25.1	66.6	60.1	73.0	20.8	8.5	33.7	1.6	0.3	2.9	1.1	0.2	2.0	6	1	18	84.6	74.5	95.4
14	Region 26	76.6	72.7	80.4	31.0	28.7	33.7	13.0	5.6	22.5	66.1	55.6	74.1	20.9	11.0	33.7	2.2	0.9	6.6	1.4	0.4	4.1	7	1	29	98.5	92.0	108.1
10	Region 27	77.0	75.9	79.2	33.8	31.2	41.1	16.5	11.0	24.1	68.1	61.1	77.2	15.5	8.0	20.9	1.9	0.3	2.9	1.3	0.0	2.2	12	4	31	97.1	92.8	103.2
46	Region 28	76.5	72.1	79.3	32.0	25.4	36.6	15.5	3.0	32.6	65.1	49.2	75.9	19.3	8.5	39.3	1.6	0.2	4.2	1.0	0.1	2.9	9	1	32	92.0	68.6	102.8
5	Region 29	77.3	75.4	78.7	32.7	29.5	35.3	19.0	12.8	25.1	64.9	62.9	67.7	16.1	8.6	24.3	1.1	0.6	1.5	0.8	0.5	1.0	5	2	8	96.9	89.5	100.6
23	Region 30	77.2	74.9	78.7	33.2	28.2	38.8	13.4	4.8	28.5	68.1	57.8	75.4	18.5	10.3	25.5	1.3	0.1	2.6	0.8	0.1	1.5	5	0	11	90.3	74.4	106.4
21	Region 31	78.2	76.3	80.1	35.5	27.6	44.4	17.5	5.6	39.5	65.6	52.8	73.0	16.9	7.1	36.7	1.4	0.6	2.8	1.0	0.3	1.8	8	3	18	100.2	90.0	106.9
15	Region 32	77.5	75.7	79.3	32.9	26.4	40.3	19.3	4.3	33.9	65.0	58.7	76.8	15.7	4.9	32.3	1.7	0.9	2.8	1.3	0.8	2.0	6	2	14	94.2	76.0	109.0
4	Region 33	76.5	73.0	78.2	33.6	32.9	34.4	21.9	14.1	33.5	63.9	55.8	68.6	14.3	10.7	18.1	1.5	0.6	2.0	1.1	0.5	1.5	3	2	4	89.0	84.6	92.6
8	Region 34	78.3	76.9	80.0	33.6	31.7	35.1	22.9	12.0	37.8	65.7	55.9	74.6	11.4	6.3	18.2	1.3	0.6	1.8	0.9	0.4	1.4	4	1	6	99.0	92.5	104.4
12	Region 35	72.0	69.9	77.8	36.4	25.5	42.8	39.4	5.0	52.8	52.3	44.3	72.2	8.3	1.6	44.6	1.1	0.2	5.0	0.8	0.2	3.5	8	2	17	105.0	77.9	112.7
7	Region 36	76.4	75.7	77.5	32.3	28.6	34.2	13.2	8.2	19.1	65.1	60.4	68.9	21.7	16.1	27.5	2.6	1.9	4.6	1.8	1.0	3.1	7	1	14	93.0	89.8	95.0
297	**Ave YM 1**	**76.7**			**33.1**			**16.0**			**66.5**			**17.5**			**1.8**			**1.2**			**6**			**93.7**		
	Min YM 1		**69.9**			**25.4**			**1.3**			**44.3**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
	Max YM 1			**81.2**			**45.4**			**52.8**			**79.9**			**44.6**			**10.3**			**9.9**			**32**			**112.7**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2008/2009)
(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			< 6.3 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																												
1	Region 10	74.8	74.8	74.8	35.2	35.2	35.2	8.9	8.9	8.9	70.3	70.3	70.3	20.8	20.8	20.8	0.6	0.6	0.6	0.6	0.6	0.6	2	2	2	72.7	72.7	72.7
1	Region 12	74.7	74.7	74.7	32.8	32.8	32.8	12.4	12.4	12.4	74.0	74.0	74.0	13.6	13.6	13.6	1.9	1.9	1.9	1.6	1.6	1.6	5	5	5	87.1	87.1	87.1
2	Region 13	75.5	75.3	75.7	31.2	29.8	32.5	9.0	7.9	10.1	72.3	69.3	75.3	18.7	14.6	22.8	2.1	2.0	2.1	1.8	1.7	1.8	8	7	8	77.8	76.7	78.8
1	Region 17	73.6	73.6	73.6	31.3	31.3	31.3	15.3	15.3	15.3	72.1	72.1	72.1	12.6	12.6	12.6	2.9	2.9	2.9	2.0	2.0	2.0	2	2	2	83.5	83.5	83.5
1	Region 18	75.3	75.3	75.3	33.6	33.6	33.6	18.2	18.2	18.2	69.5	69.5	69.5	12.3	12.3	12.3	6.4	6.4	6.4	4.6	4.6	4.6	22	22	22	103.1	103.1	103.1
2	Region 19	76.0	75.2	76.7	28.8	27.3	30.2	9.7	6.0	13.4	64.4	61.3	67.4	26.0	19.2	32.7	2.0	1.6	2.4	1.4	1.0	1.7	2	1	2	94.6	90.8	98.3
1	Region 20	76.6	76.6	76.6	31.6	31.6	31.6	12.0	12.0	12.0	72.5	72.5	72.5	15.5	15.5	15.5	2.1	2.1	2.1	1.9	1.9	1.9	2	2	2	93.1	93.1	93.1
1	Region 25	74.0	74.0	74.0	28.0	28.0	28.0	2.1	2.1	2.1	58.8	58.8	58.8	39.1	39.1	39.1	2.4	2.4	2.4	1.8	1.8	1.8	2	2	2	74.8	74.8	74.8
1	Region 26	76.7	76.7	76.7	32.7	32.7	32.7	20.8	20.8	20.8	63.9	63.9	63.9	15.3	15.3	15.3	1.4	1.4	1.4	1.0	1.0	1.0	1	1	1	101.1	101.1	101.1
1	Region 28	75.2	75.2	75.2	29.0	29.0	29.0	3.7	3.7	3.7	64.0	64.0	64.0	32.3	32.3	32.3	1.5	1.5	1.5	1.1	1.1	1.1	4	4	4	83.2	83.2	83.2
3	Region 30	75.3	73.1	76.9	30.4	28.8	32.6	14.4	11.7	16.3	66.3	63.8	68.7	19.4	16.2	22.0	1.9	1.6	2.1	1.1	1.0	1.3	7	2	12	86.3	79.9	93.4
4	Region 31	75.8	75.3	77.0	30.4	28.8	32.3	19.4	8.1	28.3	64.9	59.5	67.7	15.8	11.8	24.2	2.0	1.4	2.7	1.4	1.0	2.1	8	4	14	95.3	86.0	100.0
1	Region 33	75.9	75.9	75.9	28.4	28.4	28.4	4.0	4.0	4.0	76.9	76.9	76.9	19.1	19.1	19.1	2.1	2.1	2.1	1.2	1.2	1.2	2	2	2	75.7	75.7	75.7
1	Region 34	76.3	76.3	76.3	30.9	30.9	30.9	11.4	11.4	11.4	72.5	72.5	72.5	16.1	16.1	16.1	1.9	1.9	1.9	1.6	1.6	1.6	5	5	5	88.3	88.3	88.3
1	Region 35	74.0	74.0	74.0	24.2	24.2	24.2	2.8	2.8	2.8	55.3	55.3	55.3	41.9	41.9	41.9	1.5	1.5	1.5	0.5	0.5	0.5	1	1	1	84.1	84.1	84.1
3	Region 36	75.7	71.8	78.2	32.5	29.0	36.1	11.8	6.4	17.6	66.6	65.5	68.0	21.6	14.4	28.1	2.8	1.4	4.0	2.1	1.1	3.0	7	3	11	88.2	72.2	100.8
25	**Ave YM 2**	**75.4**			**30.7**			**12.2**			**67.3**			**20.6**			**2.2**			**1.6**			**6**			**87.8**		
	Min YM 2		**71.8**			**24.2**			**2.1**			**55.3**			**11.8**			**0.6**			**0.5**			**1**			**72.2**	
	Max YM 2			**78.2**			**36.1**			**28.3**			**76.9**			**41.9**			**6.4**			**4.6**			**22**			**103.1**

TABLE 13: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE (2008/2009)
(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			< 6.3 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 17	75.2	75.2	75.2	29.8	29.8	29.8	16.7	16.7	16.7	67.3	67.3	67.3	16.0	16.0	16.0	1.8	1.8	1.8	1.5	1.5	1.5	5	5	5	100.8	100.8	100.8
1	Region 30	77.4	77.4	77.4	32.5	32.5	32.5	21.7	21.7	21.7	62.2	62.2	62.2	16.1	16.1	16.1	0.8	0.8	0.8	0.4	0.4	0.4	2	2	2	89.0	89.0	89.0
2	**Ave YM 3**	**76.3**			**31.2**			**19.2**			**64.8**			**16.1**			**1.3**			**0.9**			**4**			**94.9**		
	Min YM 3		**75.2**			**29.8**			**16.7**			**62.2**			**16.0**			**0.8**			**0.4**			**2**			**89.0**	
	Max YM 3			**77.4**			**32.5**			**21.7**			**67.3**			**16.1**			**1.8**			**1.5**			**5**			**100.8**
GRADE: COM																												
1	Region 16	76.9	76.9	76.9	31.1	31.1	31.1	13.9	13.9	13.9	67.4	67.4	67.4	18.7	18.7	18.7	2.2	2.2	2.2	1.6	1.6	1.6	3	3	3	93.8	93.8	93.8
1	Region 19	74.9	74.9	74.9	30.6	30.6	30.6	7.1	7.1	7.1	71.5	71.5	71.5	21.4	21.4	21.4	2.2	2.2	2.2	1.8	1.8	1.8	8	8	8	93.0	93.0	93.0
1	Region 32	76.3	76.3	76.3	30.6	30.6	30.6	11.0	11.0	11.0	61.2	61.2	61.2	27.8	27.8	27.8	2.1	2.1	2.1	1.6	1.6	1.6	11	11	11	81.3	81.3	81.3
3	**Ave COM**	**76.0**			**30.8**			**10.7**			**66.7**			**22.6**			**2.2**			**1.7**			**7**			**89.4**		
	Min COM		**74.9**			**30.6**			**7.1**			**61.2**			**18.7**			**2.1**			**1.6**			**3**			**81.3**	
	Max COM			**76.9**			**31.1**			**13.9**			**71.5**			**27.8**			**2.2**			**1.8**			**11**			**93.8**
327	**Ave yellow maize**	**76.6**			**32.9**			**15.7**			**66.5**			**17.8**			**1.8**			**1.3**			**6**			**93.2**		
	Min yellow maize		**69.9**			**24.2**			**1.3**			**44.3**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
	Max yellow maize			**81.2**			**45.4**			**52.8**			**79.9**			**44.6**			**10.3**			**9.9**			**32**			**112.7**
810	**Ave maize**	**77.2**			**34.2**			**21.9**			**64.6**			**13.4**			**1.6**			**1.2**			**5**			**93.6**		
	Min maize		**61.6**			**24.2**			**0.5**			**43.1**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
	Max maize			**82.8**			**45.4**			**52.8**			**84.0**			**51.0**			**11.7**			**9.9**			**50**			**115.4**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE (2008/2009)

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			< 6.3 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																												
1	Region 11	80.9	80.9	80.9	32.8	32.8	32.8	1.8	1.8	1.8	50.1	50.1	50.1	48.1	48.1	48.1	1.1	1.1	1.1	0.8	0.8	0.8	1	1	1	100.7	100.7	100.7
15	Region 12	77.9	74.4	80.1	35.1	29.6	37.5	26.9	10.5	36.3	62.8	56.5	71.7	10.3	5.1	17.8	1.6	0.7	3.3	1.1	0.3	2.0	3	0	7	93.9	79.7	103.5
17	Region 13	77.5	76.0	79.1	34.2	32.1	36.8	28.6	19.0	35.2	61.7	55.0	67.1	9.7	4.8	14.8	1.1	0.4	2.1	0.8	0.3	1.6	3	1	5	90.4	82.7	98.2
36	Region 14	78.8	75.3	82.8	35.3	28.0	38.4	31.2	14.9	41.6	59.6	49.8	69.5	9.2	3.8	18.0	1.1	0.3	2.4	0.8	0.2	1.7	3	0	13	98.2	91.2	111.9
25	Region 15	79.3	76.2	80.5	34.5	29.8	36.6	31.0	16.2	43.4	60.7	52.5	71.1	8.4	2.9	15.3	1.0	0.4	2.8	0.8	0.2	2.3	4	0	19	99.0	92.2	106.0
41	Region 16	78.3	74.6	81.3	35.8	31.2	43.4	28.5	1.7	42.4	62.2	52.0	77.9	9.3	2.9	37.8	1.4	0.5	4.3	1.1	0.3	4.1	3	0	13	94.1	82.2	106.0
35	Region 17	75.9	70.1	79.0	34.1	30.3	39.8	25.9	6.4	42.5	63.8	49.9	79.2	10.3	2.1	23.2	1.9	0.9	3.4	1.4	0.5	2.8	4	0	10	93.2	79.1	115.4
10	Region 18	77.1	75.0	78.4	35.9	31.4	38.4	27.7	18.7	34.5	63.4	57.8	69.6	8.9	5.1	14.4	1.8	0.9	3.3	1.4	0.4	2.9	5	0	18	97.7	87.9	106.0
10	Region 19	77.3	75.4	78.4	36.0	33.2	39.6	29.9	21.9	43.3	62.8	49.2	69.0	7.4	4.0	9.4	1.4	0.9	1.7	1.0	0.7	1.4	4	0	6	96.2	89.7	106.7
17	Region 20	77.2	74.3	78.7	34.7	31.3	40.1	25.5	8.8	36.3	64.7	57.6	75.6	9.8	4.8	15.6	1.7	0.6	3.1	1.3	0.5	2.4	7	0	31	92.2	81.7	103.7
24	Region 21	77.9	76.4	79.8	35.1	31.0	42.8	24.9	12.8	33.3	64.9	59.1	76.4	10.1	5.3	15.7	1.6	0.6	2.8	1.3	0.6	2.4	3	0	10	94.3	87.2	106.3
19	Region 22	78.5	77.3	80.7	35.8	32.1	38.0	31.5	16.4	43.1	60.9	54.3	73.5	7.6	2.6	14.4	1.1	0.5	2.4	0.8	0.3	2.2	1	0	8	98.1	91.4	103.1
30	Region 23	78.4	74.2	80.3	35.3	31.0	44.0	28.2	15.1	39.2	63.2	55.1	75.9	8.6	5.4	14.0	1.4	0.7	3.0	1.1	0.4	2.1	3	0	16	96.0	74.0	105.9
16	Region 24	77.1	61.6	79.9	35.3	27.9	40.5	22.5	0.5	39.0	63.6	48.5	74.8	13.9	4.2	51.0	1.9	0.6	6.1	1.4	0.4	3.6	5	0	15	91.7	80.7	106.5
13	Region 25	76.3	73.8	78.8	33.0	29.1	36.5	19.6	12.2	33.3	67.2	56.9	72.2	13.3	6.1	21.5	1.9	0.2	10.8	1.4	0.1	8.1	4	0	29	84.3	70.0	98.4
19	Region 26	76.5	73.6	79.9	33.1	30.5	36.6	21.3	12.4	40.9	65.9	52.1	76.6	12.8	7.0	24.8	1.6	0.5	3.7	1.2	0.4	2.7	4	0	16	90.8	72.5	100.3
6	Region 27	77.2	76.0	78.5	35.2	34.2	36.3	25.8	17.3	31.0	64.5	58.0	70.8	9.8	6.6	11.9	4.2	1.1	7.3	2.6	0.7	4.3	24	1	50	89.9	83.5	96.9
26	Region 28	77.4	73.9	79.7	34.8	30.9	38.7	23.9	13.1	37.4	65.6	57.1	74.1	10.5	5.5	19.2	1.3	0.4	4.3	1.0	0.2	3.9	8	2	23	90.3	82.8	96.2
31	Region 29	77.3	72.8	80.7	35.0	27.1	39.8	26.3	10.6	46.4	62.2	43.1	74.0	11.4	4.6	30.5	1.3	0.4	4.2	1.0	0.2	3.9	3	0	15	93.4	72.1	106.3
22	Region 30	77.4	75.4	79.0	35.0	31.5	40.8	21.2	4.5	43.3	65.1	46.8	78.4	13.7	3.3	36.5	2.2	0.4	11.7	1.5	0.1	8.7	11	2	39	94.1	70.4	107.8
12	Region 31	77.7	74.1	79.2	37.5	31.4	40.9	15.3	4.5	30.0	71.3	63.3	84.0	13.4	5.9	24.0	1.1	0.4	2.2	1.0	0.4	2.0	5	0	11	93.6	85.1	102.3
19	Region 32	77.8	75.1	79.4	36.7	33.3	40.1	28.8	18.0	42.0	62.6	52.7	73.1	8.6	5.3	11.1	1.3	0.3	2.6	1.0	0.2	2.3	5	0	20	89.5	78.6	107.5
1	Region 33	77.2	77.2	77.2	34.1	34.1	34.1	34.9	34.9	34.9	59.0	59.0	59.0	6.1	6.1	6.1	0.6	0.6	0.6	0.5	0.5	0.5	2	2	2	83.7	83.7	83.7
12	Region 34	77.4	73.8	79.8	36.0	32.3	38.7	30.5	2.7	45.2	59.3	49.5	71.8	10.2	4.4	29.6	1.3	0.3	2.4	1.0	0.2	1.8	4	1	16	89.2	70.6	100.2
9	Region 35	77.0	74.5	80.6	35.3	32.6	39.7	26.2	11.6	33.5	63.5	57.8	69.1	10.4	5.8	25.3	0.9	0.2	1.7	0.6	0.2	1.1	4	2	10	97.3	89.1	105.3
17	Region 36	76.5	74.0	78.0	34.1	31.1	37.4	17.3	4.3	26.0	66.8	59.6	80.0	16.0	9.2	22.5	1.7	0.3	4.5	1.4	0.3	3.9	9	2	24	98.7	89.0	103.6
483	**Ave white**	**77.6**			**35.1**			**26.2**			**63.3**			**10.5**			**1.5**			**1.1**			**5**			**93.9**		
	Min white		**61.6**			**27.1**			**0.5**			**43.1**			**2.1**			**0.2**			**0.1**			**0**			**70.0**	
	Max white			**82.8**			**44.0**			**46.4**			**84.0**			**51.0**			**11.7**			**8.7**			**50**			**115.4**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE (2008/2009)

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			< 6.3 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																												
16	Region 10	77.1	74.8	78.3	37.4	33.2	45.4	6.7	2.9	10.4	72.1	64.4	79.9	21.2	13.9	31.2	1.7	0.6	10.3	1.5	0.2	9.9	3	0	6	85.4	72.7	95.7
12	Region 11	77.0	76.0	77.9	33.7	31.6	36.3	7.0	1.3	22.1	67.0	60.5	72.0	26.0	9.9	34.9	2.1	1.3	3.0	1.5	1.0	1.9	3	0	7	86.3	77.3	94.3
6	Region 12	76.7	74.7	79.0	31.5	30.2	32.8	12.8	5.4	17.0	71.7	67.9	74.0	15.5	11.5	21.1	1.7	1.0	2.6	1.3	0.9	2.3	4	1	6	92.3	87.1	97.7
6	Region 13	76.7	75.3	78.0	32.3	28.9	35.0	15.8	7.9	29.5	69.0	62.0	75.3	15.2	8.5	22.8	1.7	1.0	2.1	1.4	0.6	1.8	6	1	9	89.6	76.7	99.1
12	Region 14	77.7	72.9	81.2	33.4	26.6	37.8	20.8	6.2	33.3	66.6	52.8	75.5	12.6	6.6	24.2	2.1	1.2	3.2	1.6	0.9	3.1	4	1	8	99.4	86.4	105.3
7	Region 15	77.3	76.7	77.8	33.1	29.3	35.4	8.4	5.3	17.3	72.2	66.5	75.7	19.4	13.8	26.1	1.5	1.1	2.2	1.0	0.7	1.6	5	3	12	91.1	82.7	101.4
9	Region 16	76.1	74.0	78.0	32.2	30.8	33.8	14.8	8.0	22.5	68.7	58.9	75.6	16.6	11.8	22.0	2.4	0.8	5.4	1.5	0.5	3.5	8	3	14	93.6	79.3	103.2
13	Region 17	75.6	71.9	77.4	30.6	25.8	33.6	14.4	3.8	21.3	68.8	64.8	73.6	16.8	9.9	31.0	2.4	1.3	5.4	1.8	1.1	4.3	6	1	14	94.2	82.2	103.3
5	Region 18	75.8	75.3	76.8	33.9	31.9	37.0	24.6	18.2	37.8	63.5	59.1	69.5	11.9	3.1	18.8	3.3	1.8	6.4	2.5	1.7	4.6	6	1	22	93.1	83.6	103.1
6	Region 19	76.6	74.9	79.6	31.6	27.3	35.6	10.9	6.0	14.2	68.3	61.3	71.5	20.8	15.3	32.7	1.8	1.2	2.4	1.4	0.9	1.8	6	1	16	96.0	90.8	101.1
6	Region 20	76.8	76.3	77.4	33.3	31.2	38.2	17.5	12.0	24.4	65.6	54.9	72.5	16.9	10.6	29.7	2.7	1.8	3.4	2.1	1.5	2.5	6	1	11	94.6	89.6	98.0
7	Region 21	76.1	73.5	77.3	31.8	27.6	36.2	13.1	7.5	21.9	70.2	63.1	76.3	16.7	8.7	26.7	2.0	0.6	3.3	1.6	0.5	2.5	4	1	8	93.2	78.8	101.5
4	Region 22	75.8	74.6	77.1	32.4	30.0	35.0	16.7	11.6	22.8	70.2	66.4	73.4	13.1	8.6	16.2	2.0	1.5	2.6	1.4	1.0	1.6	2	0	5	96.9	91.6	105.2
8	Region 23	77.0	75.9	77.9	33.2	31.0	35.5	17.0	12.8	20.2	69.3	66.4	72.8	13.7	8.1	19.4	2.5	1.5	4.5	2.0	0.9	4.1	5	2	11	101.1	90.6	108.0
4	Region 24	76.0	74.3	77.0	30.9	26.9	33.1	15.5	10.1	20.5	67.3	63.8	69.8	17.2	12.3	26.1	1.7	0.8	2.9	1.1	0.2	2.1	4	0	8	96.1	83.8	103.3
24	Region 25	76.2	74.0	77.7	31.2	27.4	35.0	12.2	2.1	25.1	66.2	58.8	73.0	21.5	8.5	39.1	1.6	0.3	2.9	1.1	0.2	2.0	6	1	18	84.2	74.5	95.4
15	Region 26	76.6	72.7	80.4	31.1	28.7	33.7	13.5	5.6	22.5	66.0	55.6	74.1	20.5	11.0	33.7	2.2	0.9	6.6	1.4	0.4	4.1	6	1	29	98.7	92.0	108.1
10	Region 27	77.0	75.9	79.2	33.8	31.2	41.1	16.5	11.0	24.1	68.1	61.1	77.2	15.5	8.0	20.9	1.9	0.3	2.9	1.3	0.0	2.2	12	4	31	97.1	92.8	103.2
47	Region 28	76.4	72.1	79.3	31.9	25.4	36.6	15.3	3.0	32.6	65.1	49.2	75.9	19.6	8.5	39.3	1.6	0.2	4.2	1.0	0.1	2.9	9	1	32	91.8	68.6	102.8
5	Region 29	77.3	75.4	78.7	32.7	29.5	35.3	19.0	12.8	25.1	64.9	62.9	67.7	16.1	8.6	24.3	1.1	0.6	1.5	0.8	0.5	1.0	5	2	8	96.9	89.5	100.6
27	Region 30	77.0	73.1	78.7	32.9	28.2	38.8	13.8	4.8	28.5	67.7	57.8	75.4	18.5	10.3	25.5	1.3	0.1	2.6	0.8	0.1	1.5	5	0	12	89.8	74.4	106.4
25	Region 31	77.8	75.3	80.1	34.7	27.6	44.4	17.8	5.6	39.5	65.5	52.8	73.0	16.7	7.1	36.7	1.5	0.6	2.8	1.0	0.3	2.1	8	3	18	99.4	86.0	106.9
16	Region 32	77.4	75.7	79.3	32.7	26.4	40.3	18.8	4.3	33.9	64.8	58.7	76.8	16.4	4.9	32.3	1.7	0.9	2.8	1.3	0.8	2.0	7	2	14	93.4	76.0	109.0
5	Region 33	76.4	73.0	78.2	32.6	28.4	34.4	18.3	4.0	33.5	66.5	55.8	76.9	15.2	10.7	19.1	1.6	0.6	2.1	1.1	0.5	1.5	3	2	4	86.4	75.7	92.6
9	Region 34	78.1	76.3	80.0	33.3	30.9	35.1	21.6	11.4	37.8	66.4	55.9	74.6	11.9	6.3	18.2	1.3	0.6	1.9	1.0	0.4	1.6	4	1	6	97.8	88.3	104.4
13	Region 35	72.1	69.9	77.8	35.5	24.2	42.8	36.6	2.8	52.8	52.5	44.3	72.2	10.9	1.6	44.6	1.2	0.2	5.0	0.7	0.2	3.5	8	1	17	103.4	77.9	112.7
10	Region 36	76.2	71.8	78.2	32.4	28.6	36.1	12.8	6.4	19.1	65.6	60.4	68.9	21.7	14.4	28.1	2.7	1.4	4.6	1.9	1.0	3.1	7	1	14	91.6	72.2	100.8
327	**Ave yellow**	**76.6**			**32.9**			**15.7**			**66.5**			**17.8**			**1.8**			**1.3**			**6**			**93.2**		
	Min yellow		**69.9**			**24.2**			**1.3**			**44.3**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
	Max yellow			**81.2**			**45.4**			**52.8**			**79.9**			**44.6**			**10.3**			**9.9**			**32**			**112.7**

TABLE 14: PHYSICAL QUALITY FACTORS OF MAIZE FOR (2008/2009)

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			< 6.3 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																												
16	Region 10	77.1	74.8	78.3	37.4	33.2	45.4	6.7	2.9	10.4	72.1	64.4	79.9	21.2	13.9	31.2	1.7	0.6	10.3	1.5	0.2	9.9	3	0	6	85.4	72.7	95.7
13	Region 11	77.3	76.0	80.9	33.6	31.6	36.3	6.6	1.3	22.1	65.7	50.1	72.0	27.7	9.9	48.1	2.0	1.1	3.0	1.5	0.8	1.9	3	0	7	87.4	77.3	100.7
21	Region 12	77.5	74.4	80.1	34.1	29.6	37.5	22.9	5.4	36.3	65.3	56.5	74.0	11.8	5.1	21.1	1.6	0.7	3.3	1.2	0.3	2.3	4	0	7	93.4	79.7	103.5
23	Region 13	77.3	75.3	79.1	33.7	28.9	36.8	25.3	7.9	35.2	63.6	55.0	75.3	11.1	4.8	22.8	1.2	0.4	2.1	0.9	0.3	1.8	4	1	9	90.2	76.7	99.1
48	Region 14	78.5	72.9	82.8	34.8	26.6	38.4	28.6	6.2	41.6	61.4	49.8	75.5	10.1	3.8	24.2	1.3	0.3	3.2	1.0	0.2	3.1	4	0	13	98.5	86.4	111.9
32	Region 15	78.9	76.2	80.5	34.2	29.3	36.6	26.0	5.3	43.4	63.2	52.5	75.7	10.8	2.9	26.1	1.1	0.4	2.8	0.8	0.2	2.3	4	0	19	97.2	82.7	106.0
50	Region 16	77.9	74.0	81.3	35.2	30.8	43.4	26.0	1.7	42.4	63.4	52.0	77.9	10.6	2.9	37.8	1.6	0.5	5.4	1.2	0.3	4.1	4	0	14	94.1	79.3	106.0
48	Region 17	75.8	70.1	79.0	33.2	25.8	39.8	22.8	3.8	42.5	65.1	49.9	79.2	12.1	2.1	31.0	2.0	0.9	5.4	1.5	0.5	4.3	5	0	14	93.5	79.1	115.4
15	Region 18	76.7	75.0	78.4	35.3	31.4	38.4	26.7	18.2	37.8	63.4	57.8	69.6	9.9	3.1	18.8	2.3	0.9	6.4	1.8	0.4	4.6	5	0	22	96.2	83.6	106.0
16	Region 19	77.0	74.9	79.6	34.4	27.3	39.6	22.8	6.0	43.3	64.8	49.2	71.5	12.4	4.0	32.7	1.6	0.9	2.4	1.2	0.7	1.8	4	0	16	96.1	89.7	106.7
23	Region 20	77.1	74.3	78.7	34.3	31.2	40.1	23.4	8.8	36.3	64.9	54.9	75.6	11.6	4.8	29.7	1.9	0.6	3.4	1.5	0.5	2.5	6	0	31	92.8	81.7	103.7
31	Region 21	77.5	73.5	79.8	34.4	27.6	42.8	22.3	7.5	33.3	66.1	59.1	76.4	11.6	5.3	26.7	1.7	0.6	3.3	1.3	0.5	2.5	3	0	10	94.1	78.8	106.3
23	Region 22	78.0	74.6	80.7	35.2	30.0	38.0	28.9	11.6	43.1	62.5	54.3	73.5	8.6	2.6	16.2	1.3	0.5	2.6	0.9	0.3	2.2	1	0	8	97.9	91.4	105.2
38	Region 23	78.1	74.2	80.3	34.9	31.0	44.0	25.8	12.8	39.2	64.5	55.1	75.9	9.7	5.4	19.4	1.7	0.7	4.5	1.3	0.4	4.1	3	0	16	97.1	74.0	108.0
20	Region 24	76.9	61.6	79.9	34.4	26.9	40.5	21.1	0.5	39.0	64.4	48.5	74.8	14.6	4.2	51.0	1.9	0.6	6.1	1.3	0.2	3.6	4	0	15	92.6	80.7	106.5
37	Region 25	76.3	73.8	78.8	31.8	27.4	36.5	14.8	2.1	33.3	66.6	56.9	73.0	18.6	6.1	39.1	1.7	0.2	10.8	1.2	0.1	8.1	5	0	29	84.2	70.0	98.4
34	Region 26	76.5	72.7	80.4	32.2	28.7	36.6	17.9	5.6	40.9	65.9	52.1	76.6	16.2	7.0	33.7	1.8	0.5	6.6	1.3	0.4	4.1	5	0	29	94.3	72.5	108.1
16	Region 27	77.1	75.9	79.2	34.3	31.2	41.1	19.9	11.0	31.0	66.7	58.0	77.2	13.3	6.6	20.9	2.7	0.3	7.3	1.8	0.0	4.3	16	1	50	94.4	83.5	103.2
73	Region 28	76.8	72.1	79.7	32.9	25.4	38.7	18.4	3.0	37.4	65.3	49.2	75.9	16.3	5.5	39.3	1.5	0.2	4.3	1.0	0.1	3.9	8	1	32	91.3	68.6	102.8
36	Region 29	77.3	72.8	80.7	34.7	27.1	39.8	25.3	10.6	46.4	62.6	43.1	74.0	12.1	4.6	30.5	1.3	0.4	4.2	0.9	0.2	3.9	4	0	15	93.9	72.1	106.3
49	Region 30	77.2	73.1	79.0	33.8	28.2	40.8	17.1	4.5	43.3	66.5	46.8	78.4	16.4	3.3	36.5	1.7	0.1	11.7	1.1	0.1	8.7	8	0	39	91.8	70.4	107.8
37	Region 31	77.8	74.1	80.1	35.6	27.6	44.4	17.0	4.5	39.5	67.4	52.8	84.0	15.6	5.9	36.7	1.4	0.4	2.8	1.0	0.3	2.1	7	0	18	97.5	85.1	106.9
35	Region 32	77.6	75.1	79.4	34.9	26.4	40.3	24.2	4.3	42.0	63.6	52.7	76.8	12.2	4.9	32.3	1.5	0.3	2.8	1.1	0.2	2.3	6	0	20	91.2	76.0	109.0
6	Region 33	76.5	73.0	78.2	32.8	28.4	34.4	21.1	4.0	34.9	65.3	55.8	76.9	13.7	6.1	19.1	1.5	0.6	2.1	1.0	0.5	1.5	3	2	4	85.9	75.7	92.6
21	Region 34	77.7	73.8	80.0	34.8	30.9	38.7	26.7	2.7	45.2	62.4	49.5	74.6	10.9	4.4	29.6	1.3	0.3	2.4	1.0	0.2	1.8	4	1	16	92.9	70.6	104.4
22	Region 35	74.2	69.9	80.6	35.4	24.2	42.8	32.3	2.8	52.8	57.0	44.3	72.2	10.7	1.6	44.6	1.1	0.2	5.0	0.7	0.2	3.5	6	1	17	100.9	77.9	112.7
27	Region 36	76.4	71.8	78.2	33.5	28.6	37.4	15.6	4.3	26.0	66.3	59.6	80.0	18.1	9.2	28.1	2.1	0.3	4.6	1.6	0.3	3.9	8	1	24	96.0	72.2	103.6
810	**Ave w & y**	**77.2**			**34.2**			**21.9**			**64.6**			**13.4**			**1.6**			**1.2**			**5**			**93.6**		
Min white & yellow			**61.6**			**24.2**			**0.5**			**43.1**			**1.6**			**0.1**			**0.0**			**0**			**68.6**	
Max white & yellow				**82.8**			**45.4**			**52.8**			**84.0**			**51.0**			**11.7**			**9.9**			**50**			**115.4**

TABLE 15: PHYSICAL QUALITY FACTORS OF WHITE AND YELLOW MAIZE 1999/00 - 2008/09

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			< 6.3mm sieve			<4.75mm sieve					
		av.	min.	max.	av.	min.	max.	av.	min.	max.	av.	min.	max.	av.	min.	max.	av.	min.	max.	av.	min.	max.	av.	min.	max.
White Maize																									
1999/00	493	74.8	64.9	79.9	34.2	21.2	43.2	27.2	0.0	64.0	58.9	30.6	75.0	13.8	1.9	69.4	4.3	1.1	19.2	2.2	0.0	12.7	-	-	-
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
Weighted Average		**77.5**			**33.8**			**24.9**			**61.5**			**13.6**			**1.8**			**1.2**			**5**		
Minimum			**58.3**			**17.0**			**0.0**			**16.7**			**0.0**			**0.0**			**0.0**			**0**	
Maximum				**83.2**			**58.8**			**73.9**			**84.2**			**81.6**			**23.0**			**22.5**			**60**
Yellow Maize																									
1999/00	407	74.6	62.6	79.0	32.3	18.5	43.6	19.8	0.4	63.1	61.2	19.4	77.4	19.0	0.4	80.2	5.1	1.5	22.4	2.5	0.1	15.6	-	-	-
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
Weighted Average		**76.5**			**31.6**			**16.0**			**64.0**			**20.0**			**2.3**			**1.5**			**6**		
Minimum			**53.4**			**16.6**			**0.0**			**7.8**			**0.4**			**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																									
1999/00	900	74.7	62.6	79.9	33.3	18.5	43.6	23.9	0.0	64.0	60.0	19.4	77.4	16.2	0.4	80.2	4.7	1.1	22.4	2.3	0.0	15.6	-	-	-
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
Weighted Average		**77.1**			**32.9**			**21.3**			**62.5**			**16.2**			**2.0**			**1.3**			**5**		
Minimum			**53.4**			**16.6**			**0.0**			**7.8**			**0.0**			**0.0**			**0.0**			**0**	
Maximum				**83.2**			**62.9**			**73.9**			**84.2**			**92.1**			**71.7**			**71.4**			**60**

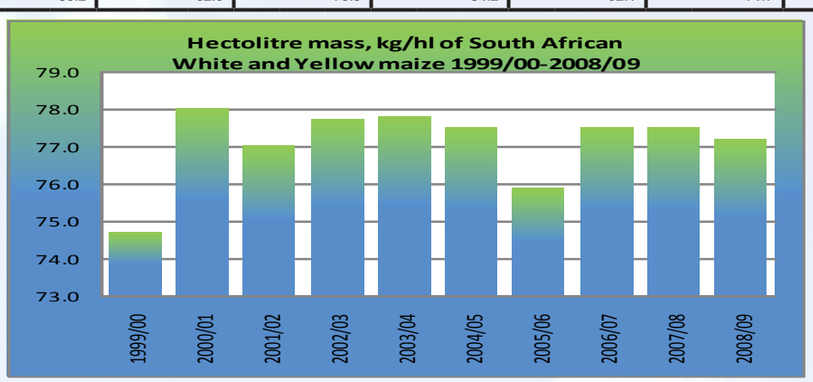


TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2008/2009)

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	13.8	13.8	13.8	9.5	9.5	9.5	30.2	30.2	30.2	25.9	25.9	25.9	20.7	20.7	20.7	79.3	79.3	79.3	26.3	26.3	26.3	16.2	16.2	16.2
13	Region 12	14.0	11.5	18.3	9.5	9.0	10.3	28.3	25.6	30.8	27.3	23.7	29.9	21.2	17.6	25.5	78.8	74.5	82.4	31.5	27.9	36.5	22.7	18.3	25.5
16	Region 13	14.3	12.7	16.0	9.9	8.2	10.7	28.6	27.1	29.5	25.7	23.4	28.1	21.5	18.8	23.0	78.5	77.0	81.2	31.0	27.0	35.7	20.5	14.7	23.8
35	Region 14	13.2	12.2	14.5	9.8	8.8	11.1	28.8	25.5	31.8	27.0	25.1	29.6	21.0	17.3	23.9	79.0	76.1	82.7	31.8	24.2	36.9	21.7	15.7	26.5
23	Region 15	12.8	11.7	14.0	9.6	8.8	11.6	28.7	26.9	30.1	27.6	25.5	29.1	21.3	19.3	24.3	78.7	75.7	80.7	32.3	28.6	36.9	22.6	17.4	29.0
38	Region 16	13.9	11.4	15.9	10.3	9.3	13.4	29.5	24.6	31.8	26.0	23.1	29.0	20.3	15.1	23.0	79.7	77.0	84.9	29.9	25.1	35.1	22.0	15.9	29.0
31	Region 17	14.2	11.3	16.8	10.4	9.2	11.6	29.3	27.3	31.0	25.1	21.8	28.2	21.0	17.0	25.0	79.0	75.0	83.0	29.5	22.8	34.8	20.7	10.8	26.5
10	Region 18	13.2	11.8	14.2	9.9	8.9	10.5	28.4	26.0	32.8	26.8	24.5	29.3	21.8	18.6	24.7	78.2	75.3	81.4	27.9	22.3	31.2	20.1	13.0	29.3
6	Region 19	13.5	12.5	15.0	9.7	9.1	10.6	28.7	28.1	29.9	26.0	24.2	27.0	22.1	21.0	23.2	77.9	76.8	79.0	27.1	24.1	31.8	18.4	15.5	21.7
15	Region 20	14.4	11.6	16.6	10.4	9.3	12.0	28.8	27.3	30.6	25.4	22.4	27.6	21.0	18.7	23.6	79.0	76.4	81.3	29.3	24.6	36.0	19.3	14.8	23.6
24	Region 21	14.2	12.0	15.5	10.0	7.1	11.4	28.3	25.0	31.3	26.9	23.8	29.6	20.6	17.4	23.7	79.4	76.3	82.6	27.6	19.7	35.4	20.2	12.7	35.0
19	Region 22	14.0	13.0	15.6	9.9	7.3	10.6	27.8	25.1	32.1	27.9	24.4	29.7	20.4	17.8	23.1	79.6	76.9	82.2	28.6	23.8	31.4	20.9	11.5	25.3
27	Region 23	14.1	12.9	16.6	10.1	9.4	11.2	27.8	24.8	31.2	27.8	24.6	30.1	20.2	17.1	22.5	79.8	77.5	82.9	30.5	24.2	36.1	21.1	15.7	27.1
16	Region 24	13.7	11.5	15.8	9.9	9.1	10.8	27.1	23.4	32.2	27.7	23.8	31.4	21.7	16.6	30.0	78.3	70.0	83.4	28.8	20.5	36.0	18.5	12.3	25.8
11	Region 25	16.1	12.4	20.7	9.6	7.1	11.6	26.4	22.9	31.2	24.7	20.8	27.2	23.2	18.1	26.3	76.8	73.7	81.9	28.4	22.4	32.5	18.2	11.7	24.4
17	Region 26	15.1	13.5	17.3	10.0	9.0	11.3	27.4	24.6	30.8	25.6	21.9	28.2	21.9	17.0	24.2	78.1	75.8	83.0	30.8	17.7	37.5	21.1	10.7	26.6
6	Region 27	14.4	13.7	14.8	9.9	9.3	10.6	27.4	26.0	28.3	26.0	24.7	28.4	22.2	20.8	23.7	77.8	76.3	79.2	30.1	24.2	34.5	19.2	13.4	22.1
22	Region 28	15.2	13.5	17.4	10.0	8.2	11.5	27.5	25.4	29.0	24.9	23.4	27.0	22.4	20.6	23.8	77.6	76.2	79.4	31.3	24.1	34.9	21.2	16.7	25.4
28	Region 29	14.1	10.9	16.9	9.7	9.0	11.3	27.3	24.8	29.4	26.8	23.4	29.3	22.1	19.0	24.5	77.9	75.5	81.0	30.5	23.8	36.1	22.0	12.6	29.5
18	Region 30	14.0	12.3	16.4	10.2	8.0	13.2	28.3	22.7	32.3	25.6	23.3	30.2	22.0	18.6	25.4	78.0	74.6	81.4	29.8	18.8	38.1	20.1	12.4	25.9
12	Region 31	13.4	11.3	15.4	9.7	8.8	10.5	28.6	24.8	30.2	27.1	23.0	30.3	21.3	19.5	25.8	78.7	74.2	80.5	25.7	19.8	35.6	18.2	12.0	25.1
18	Region 32	13.9	10.3	17.1	9.7	8.0	11.6	27.3	24.7	31.0	26.7	23.3	29.6	22.4	18.1	25.2	77.6	74.8	81.9	29.7	22.1	33.8	20.9	13.7	23.8
1	Region 33	15.8	15.8	15.8	10.1	10.1	10.1	27.8	27.8	27.8	24.4	24.4	24.4	21.9	21.9	21.9	78.1	78.1	78.1	27.2	27.2	27.2	25.5	25.5	25.5
10	Region 34	14.6	12.7	16.7	10.1	9.3	11.4	28.2	26.0	29.7	25.1	22.7	26.9	21.9	20.1	24.6	78.1	75.4	79.9	28.4	26.1	30.6	19.8	17.6	22.3
9	Region 35	13.2	10.8	15.4	9.5	8.8	10.6	27.8	27.1	29.3	27.1	24.9	30.2	22.3	20.4	23.3	77.7	76.7	79.6	31.3	28.0	37.2	20.7	17.1	23.2
14	Region 36	12.9	11.0	14.2	9.5	9.0	10.8	28.9	27.2	30.6	26.5	24.5	28.2	22.2	17.5	24.4	77.8	75.6	82.5	26.8	23.2	31.7	17.6	14.9	20.1
440	**Ave WM 1**	**14.0**			**9.9**			**28.2**			**26.4**			**21.4**			**78.6**			**29.8**			**20.7**		
	Min WM 1		**10.3**			**7.1**			**22.7**			**20.8**			**15.1**			**70.0**			**17.7**			**10.7**	
	Max WM 1			**20.7**			**13.4**			**32.8**			**31.4**			**30.0**			**84.9**			**38.1**			**35.0**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2008/2009) (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																									
2	Region 12	15.1	14.6	15.5	10.0	9.8	10.1	27.9	27.5	28.4	27.8	26.4	29.1	19.3	17.8	20.7	80.7	79.3	82.2	31.2	28.9	33.5	19.7	17.7	21.8
1	Region 13	13.3	13.3	13.3	10.9	10.9	10.9	28.9	28.9	28.9	25.7	25.7	25.7	21.1	21.1	21.1	78.9	78.9	78.9	33.9	33.9	33.9	21.3	21.3	21.3
1	Region 14	12.8	12.8	12.8	10.1	10.1	10.1	28.7	28.7	28.7	27.9	27.9	27.9	20.5	20.5	20.5	79.5	79.5	79.5	35.9	35.9	35.9	22.8	22.8	22.8
2	Region 15	13.0	12.4	13.6	9.7	9.7	9.8	29.0	28.4	29.5	27.8	27.4	28.3	20.4	19.8	21.1	79.6	78.9	80.2	30.1	28.5	31.7	21.3	19.5	23.1
2	Region 16	14.0	13.4	14.5	10.1	9.8	10.3	29.8	29.5	30.2	25.8	25.2	26.3	20.4	19.8	20.9	79.6	79.1	80.2	30.6	27.9	33.2	31.1	29.1	33.0
2	Region 17	14.2	13.6	14.8	10.8	10.2	11.3	30.0	28.6	31.4	25.4	24.8	25.9	19.7	18.8	20.6	80.3	79.4	81.2	28.2	28.1	28.2	17.7	16.7	18.8
3	Region 19	13.8	13.3	14.5	9.9	9.7	10.2	29.2	28.5	29.9	26.7	26.3	27.0	20.4	19.1	21.5	79.6	78.5	80.9	25.3	22.6	29.6	15.6	9.8	20.8
2	Region 20	14.2	12.6	15.9	9.8	9.5	10.0	27.9	26.9	28.9	25.8	23.7	27.9	22.3	21.0	23.5	77.7	76.5	79.0	27.2	22.4	31.9	15.3	12.9	17.7
3	Region 23	13.5	12.5	14.0	10.0	9.9	10.1	28.9	27.8	29.8	27.3	26.8	28.2	20.4	19.6	21.2	79.6	78.8	80.4	25.4	23.7	26.6	21.7	17.1	27.3
1	Region 25	16.4	16.4	16.4	10.3	10.3	10.3	26.8	26.8	26.8	23.3	23.3	23.3	23.2	23.2	23.2	76.8	76.8	76.8	16.2	16.2	16.2	3.7	3.7	3.7
2	Region 26	17.0	16.5	17.5	10.8	10.3	11.2	25.2	25.0	25.5	23.3	22.0	24.6	23.7	22.1	25.3	76.3	74.7	77.9	30.1	29.8	30.3	19.3	18.6	20.0
3	Region 28	14.4	14.4	14.5	9.2	8.9	9.6	27.9	27.3	28.5	25.6	25.4	25.7	22.9	22.5	23.3	77.1	76.7	77.5	30.8	29.8	32.3	19.6	18.1	21.1
3	Region 29	15.3	14.3	17.1	9.9	9.5	10.5	28.3	26.9	29.0	26.0	24.3	27.2	20.5	19.9	21.2	79.5	78.8	80.1	27.9	20.6	35.3	16.8	6.3	23.5
4	Region 30	12.9	12.3	13.6	9.6	9.4	10.0	28.6	27.6	30.4	27.4	26.6	28.8	21.5	18.5	23.1	78.5	76.9	81.5	29.2	27.4	31.3	21.7	20.6	23.7
1	Region 32	15.5	15.5	15.5	10.2	10.2	10.2	26.4	26.4	26.4	26.4	26.4	26.4	21.4	21.4	21.4	78.6	78.6	78.6	29.2	29.2	29.2	19.5	19.5	19.5
2	Region 34	14.9	14.1	15.7	9.9	9.6	10.2	27.9	27.1	28.8	25.2	25.1	25.3	22.1	21.9	22.2	77.9	77.8	78.1	29.0	27.7	30.3	20.7	18.9	22.4
2	Region 36	13.7	13.2	14.2	10.1	9.1	11.0	29.3	29.2	29.5	26.8	25.7	27.8	20.1	17.4	22.8	79.9	77.2	82.6	24.7	23.3	26.1	14.4	14.4	14.5
36	**Ave WM 2**	**14.2**			**10.0**			**28.4**			**26.3**			**21.1**			**78.9**			**28.4**			**19.3**		
	Min WM 2		**12.3**			**8.9**			**25.0**			**22.0**			**17.4**			**74.7**			**16.2**			**3.7**	
	Max WM 2			**17.5**			**11.3**			**31.4**			**29.1**			**25.3**			**82.6**			**35.9**			**33.0**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2008/2009) (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																									
1	Region 16	12.6	12.6	12.6	10.1	10.1	10.1	31.1	31.1	31.1	27.5	27.5	27.5	18.7	18.7	18.7	81.3	81.3	81.3	24.4	24.4	24.4	13.5	13.5	13.5
1	Region 19	13.2	13.2	13.2	9.7	9.7	9.7	29.8	29.8	29.8	26.1	26.1	26.1	21.3	21.3	21.3	78.7	78.7	78.7	20.0	20.0	20.0	6.6	6.6	6.6
1	Region 25	14.0	14.0	14.0	9.6	9.6	9.6	26.3	26.3	26.3	24.9	24.9	24.9	25.2	25.2	25.2	74.8	74.8	74.8	36.7	36.7	36.7	21.3	21.3	21.3
1	Region 36	13.1	13.1	13.1	10.2	10.2	10.2	28.3	28.3	28.3	25.5	25.5	25.5	22.9	22.9	22.9	77.1	77.1	77.1	25.7	25.7	25.7	12.8	12.8	12.8
4	**Ave WM 3**	**13.2**			**9.9**			**28.9**			**26.0**			**22.0**			**78.0**			**26.7**			**13.5**		
	Min WM 3		**12.6**			**9.6**			**26.3**			**24.9**			**18.7**			**74.8**			**20.0**			**6.6**	
	Max WM 3			**14.0**			**10.2**			**31.1**			**27.5**			**25.2**			**81.3**			**36.7**			**21.3**
GRADE: COM																									
2	Region 17	12.7	12.4	13.1	10.2	10.0	10.4	28.7	28.4	28.9	28.0	26.8	29.2	20.4	18.8	22.0	79.6	78.0	81.2	27.3	26.7	28.0	18.5	16.9	20.0
1	Region 28	15.3	15.3	15.3	9.5	9.5	9.5	26.5	26.5	26.5	25.6	25.6	25.6	23.1	23.1	23.1	76.9	76.9	76.9	28.7	28.7	28.7	17.2	17.2	17.2
3	**Ave COM**	**13.6**			**10.0**			**28.0**			**27.2**			**21.3**			**78.7**			**27.8**			**18.0**		
	Min COM		**12.4**			**9.5**			**26.5**			**25.6**			**18.8**			**76.9**			**26.7**			**16.9**	
	Max COM			**15.3**			**10.4**			**28.9**			**29.2**			**23.1**			**81.2**			**28.7**			**20.0**
483	**Ave white maize**	**14.0**			**9.9**			**28.3**			**26.4**			**21.4**			**78.6**			**29.7**			**20.5**		
	Min white maize		**10.3**			**7.1**			**22.7**			**20.8**			**15.1**			**70.0**			**16.2**			**3.7**	
	Max white maize			**20.7**			**13.4**			**32.8**			**31.4**			**30.0**			**84.9**			**38.1**			**35.0**

TABLE 16: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE (2008/2009)

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																									
1	Region 11	13.8	13.8	13.8	9.5	9.5	9.5	30.2	30.2	30.2	25.9	25.9	25.9	20.7	20.7	20.7	79.3	79.3	79.3	26.3	26.3	26.3	16.2	16.2	16.2
15	Region 12	14.1	11.5	18.3	9.6	9.0	10.3	28.0	25.6	30.8	27.3	23.7	29.9	21.0	17.6	25.5	79.0	74.5	82.4	31.5	27.9	36.5	22.3	17.7	25.5
17	Region 13	14.2	12.7	16.0	10.0	8.2	10.9	28.6	27.1	29.5	25.7	23.4	28.1	21.5	18.8	23.0	78.5	77.0	81.2	31.2	27.0	35.7	20.5	14.7	23.8
36	Region 14	13.2	12.2	14.5	9.8	8.8	11.1	28.8	25.5	31.8	27.1	25.1	29.6	21.0	17.3	23.9	79.0	76.1	82.7	32.0	24.2	36.9	21.7	15.7	26.5
25	Region 15	12.8	11.7	14.0	9.6	8.8	11.6	28.7	26.9	30.1	27.6	25.5	29.1	21.3	19.3	24.3	78.7	75.7	80.7	32.1	28.5	36.9	22.5	17.4	29.0
41	Region 16	13.9	11.4	15.9	10.3	9.3	13.4	29.6	24.6	31.8	26.0	23.1	29.0	20.2	15.1	23.0	79.8	77.0	84.9	29.8	24.4	35.1	22.3	13.5	33.0
35	Region 17	14.1	11.3	16.8	10.4	9.2	11.6	29.3	27.3	31.4	25.3	21.8	29.2	20.9	17.0	25.0	79.1	75.0	83.0	29.3	22.8	34.8	20.4	10.8	26.5
10	Region 18	13.2	11.8	14.2	9.9	8.9	10.5	28.4	26.0	32.8	26.8	24.5	29.3	21.8	18.6	24.7	78.2	75.3	81.4	27.9	22.3	31.2	20.1	13.0	29.3
10	Region 19	13.5	12.5	15.0	9.8	9.1	10.6	28.9	28.1	29.9	26.2	24.2	27.0	21.5	19.1	23.2	78.5	76.8	80.9	25.8	20.0	31.8	16.4	6.6	21.7
17	Region 20	14.4	11.6	16.6	10.3	9.3	12.0	28.7	26.9	30.6	25.5	22.4	27.9	21.2	18.7	23.6	78.8	76.4	81.3	29.1	22.4	36.0	18.8	12.9	23.6
24	Region 21	14.2	12.0	15.5	10.0	7.1	11.4	28.3	25.0	31.3	26.9	23.8	29.6	20.6	17.4	23.7	79.4	76.3	82.6	27.6	19.7	35.4	20.2	12.7	35.0
19	Region 22	14.0	13.0	15.6	9.9	7.3	10.6	27.8	25.1	32.1	27.9	24.4	29.7	20.4	17.8	23.1	79.6	76.9	82.2	28.6	23.8	31.4	20.9	11.5	25.3
30	Region 23	14.0	12.5	16.6	10.1	9.4	11.2	27.9	24.8	31.2	27.8	24.6	30.1	20.2	17.1	22.5	79.8	77.5	82.9	30.0	23.7	36.1	21.2	15.7	27.3
16	Region 24	13.7	11.5	15.8	9.9	9.1	10.8	27.1	23.4	32.2	27.7	23.8	31.4	21.7	16.6	30.0	78.3	70.0	83.4	28.8	20.5	36.0	18.5	12.3	25.8
13	Region 25	16.0	12.4	20.7	9.6	7.1	11.6	26.4	22.9	31.2	24.6	20.8	27.2	23.3	18.1	26.3	76.7	73.7	81.9	28.1	16.2	36.7	17.3	3.7	24.4
19	Region 26	15.3	13.5	17.5	10.1	9.0	11.3	27.1	24.6	30.8	25.4	21.9	28.2	22.1	17.0	25.3	77.9	74.7	83.0	30.7	17.7	37.5	21.0	10.7	26.6
6	Region 27	14.4	13.7	14.8	9.9	9.3	10.6	27.4	26.0	28.3	26.0	24.7	28.4	22.2	20.8	23.7	77.8	76.3	79.2	30.1	24.2	34.5	19.2	13.4	22.1
26	Region 28	15.1	13.5	17.4	9.9	8.2	11.5	27.6	25.4	29.0	25.0	23.4	27.0	22.5	20.6	23.8	77.5	76.2	79.4	31.1	24.1	34.9	20.8	16.7	25.4
31	Region 29	14.2	10.9	17.1	9.7	9.0	11.3	27.4	24.8	29.4	26.7	23.4	29.3	21.9	19.0	24.5	78.1	75.5	81.0	30.2	20.6	36.1	21.5	6.3	29.5
22	Region 30	13.8	12.3	16.4	10.0	8.0	13.2	28.3	22.7	32.3	25.9	23.3	30.2	21.9	18.5	25.4	78.1	74.6	81.5	29.7	18.8	38.1	20.4	12.4	25.9
12	Region 31	13.4	11.3	15.4	9.7	8.8	10.5	28.6	24.8	30.2	27.1	23.0	30.3	21.3	19.5	25.8	78.7	74.2	80.5	25.7	19.8	35.6	18.2	12.0	25.1
19	Region 32	14.0	10.3	17.1	9.8	8.0	11.6	27.3	24.7	31.0	26.6	23.3	29.6	22.3	18.1	25.2	77.7	74.8	81.9	29.7	22.1	33.8	20.8	13.7	23.8
1	Region 33	15.8	15.8	15.8	10.1	10.1	10.1	27.8	27.8	27.8	24.4	24.4	24.4	21.9	21.9	21.9	78.1	78.1	78.1	27.2	27.2	27.2	25.5	25.5	25.5
12	Region 34	14.6	12.7	16.7	10.1	9.3	11.4	28.2	26.0	29.7	25.1	22.7	26.9	21.9	20.1	24.6	78.1	75.4	79.9	28.5	26.1	30.6	19.9	17.6	22.4
9	Region 35	13.2	10.8	15.4	9.5	8.8	10.6	27.8	27.1	29.3	27.1	24.9	30.2	22.3	20.4	23.3	77.7	76.7	79.6	31.3	28.0	37.2	20.7	17.1	23.2
17	Region 36	13.0	11.0	14.2	9.6	9.0	11.0	28.9	27.2	30.6	26.5	24.5	28.2	22.0	17.4	24.4	78.0	75.6	82.6	26.5	23.2	31.7	17.0	12.8	20.1
483	**Ave white**	**14.0**			**9.9**			**28.3**			**26.4**			**21.4**			**78.6**			**29.7**			**20.5**		
	Min white		**10.3**			**7.1**			**22.7**			**20.8**			**15.1**			**70.0**			**16.2**			**3.7**	
	Max white			**20.7**			**13.4**			**32.8**			**31.4**			**30.0**			**84.9**			**38.1**			**35.0**

Table 17: Presence of Genetically Modified Maize (2008/2009)

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	>1.8
10	YM1	0.5	0.4	25	YM1	>2	>1.8
11	WM1	>2	0.3	26	WM2	>2	0.4
11	YM1	>2	<0.25	26	YM1	>2	>1.8
12	WM1	>2	>1.8	26	YM1	>2	1.4
12	WM2	>2	0.5	26	YM2	>2	>1.8
12	YM1	>2	1.2	27	WM1	>2	>1.8
12	YM1	>2	>1.8	27	YM1	>2	>1.8
13	WM1	>2	>1.8	28	WM1	>2	>1.8
13	WM1	>2	>1.8	28	WM2	>2	0.8
13	WM1	>2	>1.8	28	YM1	>2	>1.8
14	WM1	>2	1.5	28	YM1	>2	>1.8
14	WM1	>2	>1.8	28	YM1	>2	1.6
14	WM1	>2	>1.8	28	YM1	>2	1.0
14	YM1	>2	1.8	28	YM1	>2	1.5
14	YM1	>2	1.1	28	YM2	>2	>1.8
15	WM1	>2	>1.8	29	WM1	>2	>1.8
15	WM2	>2	>1.8	29	WM1	1.3	>1.8
16	WM1	>2	>1.8	29	WM1	<0.15	>1.8
16	WM1	>2	>1.8	29	WM1	>2	>1.8
16	WM1	>2	>1.8	29	WM1	>2	>1.8
16	WM2	>2	<0.25	30	WM1	>2	>1.8
16	YM1	>2	0.9	30	WM1	0.7	<0.25
17	COM (W)	>2	>1.8	30	WM1	1.7	0.5
17	WM1	>2	>1.8	30	WM2	>2	>1.8
17	WM1	>2	>1.8	30	YM1	>2	1.5
17	WM1	>2	>1.8	30	YM1	>2	>1.8
18	WM1	>2	0.9	30	YM2	>2	>1.8
18	WM1	>2	>1.8	31	WM1	1.4	1.4
19	COM (Y)	>2	>1.8	31	WM1	<0.15	0.4
19	WM1	0.2	0.3	31	WM1	<0.15	<0.25
20	YM1	>2	0.7	31	YM1	<0.15	<0.25
20	YM1	>2	>1.8	32	WM1	<0.15	<0.25
21	WM1	>2	>1.8	32	WM2	<0.15	<0.25
21	WM1	>2	>1.8	32	YM1	>2	>1.8
21	YM1	>2	>1.8	33	YM1	<0.15	<0.25
22	WM1	>2	>1.8	34	WM1	>2	>1.8
22	WM1	>2	>1.8	34	WM1	>2	>1.8
22	YM1	>2	>1.8	34	YM1	<0.15	0.4
23	WM1	>2	>1.8	35	YM1	>2	0.4
23	WM2	>2	>1.8	35	YM1	>2	0.4
24	WM1	>2	>1.8	36	WM1	>2	>1.8
24	YM1	>2	>1.8	36	WM2	>2	>1.8
24	YM1	>2	>1.8	36	YM1	>2	>1.8
25	WM1	>2	<0.25	36	YM1	>2	>1.8

n	Season	% Samples positive for MON810 *(Bt)*	n	Season	% Samples positive for NK603 (RUR)
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 (2008/2009)

Region	RSA Grade	Aflatoxin ppb (LOD: 2ppb)	Fumonisin ppm (LOD: 0.1ppm)	Deoxynivalenol ppm (LOD: 0.25ppm)	Zearalenone ppm (LOD: 0.025ppm)	Ochratoxin ppb (LOD: 1ppb)
10	YM1	0	0	0.40	0.16	0
10	YM1	0	0.40	2.40	0.05	0
11	WM1	0	0.40	0	0	0
11	YM1	0	1.00	0.50	0	0
12	WM1	0	0.75	0	0	0
12	WM2	0	0.10	0.40	0	0
12	YM1	0	0	0	0	0
12	YM1	0	0.15	0	0	0
13	WM1	0	0.10	0	0	0
13	WM1	0	1.50	0	0	0
13	WM1	0	2.10	0.30	0	1.00
14	WM1	0	0	0	0	0
14	WM1	0	0	0.50	0	0
14	WM1	0	0.70	0.25	0	0
14	YM1	0	1.90	0.35	0	0
14	YM1	0	0	0.60	0	0
15	WM1	0	0	0	0	0
15	WM2	0	0.40	0.70	0	0
16	WM1	0	1.00	0.25	0	0
16	WM1	0	0.20	0.40	0	0
16	WM1	0	0	0	0	0
16	WM2	0	0.85	0.75	0	0
16	YM1	0	0.10	0	0	0
17	COM (W)	0	3.20	2.70	0	0
17	WM1	0	0.10	0.85	0	0
17	WM1	0	0	0	0	0
17	WM1	0	2.70	1.00	0	0
18	WM1	0	0	0.25	0	0
18	WM1	0	0.35	0.30	0	1.00
19	COM (Y)	0	0.15	0	0	0
19	WM1	0	1.60	1.50	0	0
20	YM1	0	0	0.70	0.04	0
20	YM1	0	0	0.25	0	0
21	WM1	0	0.60	0.40	0	0
21	WM1	0	0.70	0.90	0	0
21	YM1	0	0.10	0	0	0
22	WM1	0	1.50	0	0	0
22	WM1	0	1.10	0	0	1.00
22	YM1	0	1.50	0	0	0
23	WM1	0	2.10	0.25	0	0
23	WM2	0	0.75	1.30	0	0
24	WM1	0	0.10	0	0	0
24	YM1	0	0.70	0	0	0
24	YM1	0	0	0	0	1.00
25	WM1	0	0	0.65	0	0
25	WM1	0	0	0	0	0
25	YM1	0	0.30	0.25	0	0
26	WM2	0	0	0.75	0	0

Table 18: Mycotoxin results - Maize Crop Quality (2008/2009) (continue)

Region	RSA Grade	Aflatoxin ppb (LOD: 2ppb)	Fumonisin ppm (LOD: 0.1ppm)	Deoxynivalenol ppm (LOD: 0.25ppm)	Zearalenone ppm (LOD: 0.025ppm)	Ochratoxin ppb (LOD: 1ppb)
26	YM1	0	0	0	0	0
26	YM1	0	0.35	0.35	0	1.00
26	YM2	0	0.70	0	0	0
27	WM1	0	0.60	0.45	0	0
27	YM1	0	0	0.55	0	0
28	WM1	0	0	0	0	1.00
28	WM2	0	0.75	0.50	0	0
28	YM1	0	0	0.50	0	0
28	YM1	0	0	0.60	0	0
28	YM1	0	0	0	0	0
28	YM1	0	0	0.40	0	0
28	YM1	0	0	0	0	0
28	YM2	0	0	1.00	0	0
29	WM1	0	0	0	0	0
29	WM1	0	0	0.45	0.10	1.00
29	WM1	0	0	0.45	0.12	1.00
29	WM1	0	0.25	0	0	1.00
29	WM1	0	0	0	0	0
30	WM1	0	0	1.00	0	0
30	WM1	0	0	0.50	0	0
30	WM1	0	0	0.40	0	0
30	WM2	0	1.00	2.90	0.05	0
30	YM1	0	0	1.30	0	0
30	YM1	0	0	0.45	0	0
30	YM2	0	3.00	0.35	0	0
31	WM1	0	0	0	0	0
31	WM1	0	0.45	0.40	0	1.00
31	WM1	0	0	0.50	0	1.00
31	YM1	0	0	0.80	0	0
32	WM1	0	3.30	0	0	0
32	WM2	0	0	0.35	0	0
32	YM1	0	0.20	0	0	0
33	YM1	0	0	0.30	0	0
34	WM1	0	0.60	0.65	0	0
34	WM1	0	0.35	0.65	0	0
34	YM1	0	0.70	0	0	1.00
35	YM1	0	0	0	0	0
35	YM1	0	0	0	0	0
36	WM1	0	0.40	1.00	0.04	0
36	WM2	0	1.90	0.65	0.05	0
36	YM1	0	0.75	0.80	0	0
36	YM1	0	0	0.35	0	0
2008/2009 Average		**0**	**0.49**	**0.43**	**0.01**	**0.13**
2008/2009 Max		**0**	**3.30**	**2.90**	**0.16**	**1.00**
2008/2009 Number of samples		**90**	**90**	**90**	**90**	**90**

Note: All results < LOD and non detected are reported as 0

LOD: Limit of detection, see table

Table 19: MYCOTOXIN RESULTS - SUMMARY OF SEASON 1999/2000 TO 2008/2009

Season	Number of samples received	Number of samples tested for mycotoxins	Aflatoxin ppb			Fumonisin ppm			Deoxynivalenol ppm			Zearalenone ppm			Ochratoxin ppb			T-2 ppm		
			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	0.65	0.03	4.9	Not analysed			Not analysed			Not analysed			Not analysed		
2000/2001	900	57	<1	0	22	1.67	0	8.1	0.68	0	5.4	<0.1	0	0.12	<2.0	0	0	0	0	0
2001/2002	900	90	0	0	0	0.76	0	5.1	0.63	0	2.2	<0.1	0	0.30	<2.0	0	0	0	0	0
2002/2003	900	90	0	0	0	0.73	0	3.9	<0.5	0	4.3	<0.1	0	0.14	<2.0	0	2.0	<0.15	0	0.3
2003/2004	900	90	0	0	0	1.14	0.16	5.6	0.20	0	13.0	<0.1	0	1.20	<2.0	0	5.7	Not analysed		
2004/2005	1000	100	0	0	0	1.08	0	5.3	0.60	0	3.9	<0.1	0	0.44	<2.0	0	2.4	Not analysed		
2005/2006	900	90	0	0	0	0.97	0	13.0	2.74	0	6.2	0.03	0	0.39	<2.0	0	2.9	Not analysed		
2006/2007	900	90	<1	0	9	0.64	0	4.5	0.53	0	3.1	0	0	0	<2.0	0	6.5	Not analysed		
2007/2008	900	100	0	0	2	0.47	0	5.5	0.24	0	1.7	0	0	0.10	<1.0	0	2.0	Not analysed		
2008/2009	810	90	0	0	0	0.49	0	3.3	0.43	0	2.9	<0.025	0	0.16	<1.0	0	1.0	Not analysed		
Total	10192	1182																		
Min				**0**			**0**			**0**			**0**			**0**			**0**	
Max					**22**			**13.0**			**13.0**			**1.20**			**6.5**			**0.29**

Mycotoxin methodology

Method used from season 1997/1998 - 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	LOD for maize
Aflatoxin	0 - 300 ppb	1.0 ppb
Fumonisin	0 - 10 ppm	0.25 ppm
Deoxynivalenol	0.5 - 50 ppm	0.5 ppm
Zearalenone	0 - 5.0 ppm	0.1 ppm
Ochratoxin A	0 - 50 ppb	2 ppb
T - 2	0.15 - 2 ppm	0.15 ppm

Method 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	LOD for maize
Aflatoxin	0 - 100 ppb	2 ppb
Fumonisin	0 - 60 ppm	0.1 ppm
Deoxynivalenol	0 - 5 ppm	0.25 ppm
Zearalenone	0 - 1 ppm	0.025 ppm
Ochratoxin A	0 - 150 ppb	1 ppb

Notes:

Limit of detection (LOD) means the lowest level that can be detected accurately by the method.
A result above zero but lower than the limit of detection, is reported as <"LOD".
All not detected results are reported as 0, see LOD.

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, 1999)
b) Protein: Dumas (Leco) method (AACC 46-30,1999)
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.

The SAGL uses ROSA (Rapid One Step Assay) Quantitative tests, which are lateral flow immuno asay tests, together with the ROSA-M Reader for measuring the mycotoxin content. This methods are GIPSA approved (GIPSA: Grain Inspection, Packers and Stockyards Administration (USA)). 90 of the 810 maize crop samples were tested for Aflatoxin, Fumonisin, Deoxynivalenol, Zearalenone and Ochratoxin.

6. GMO (Genetically Modified Organisms)

90 samples of the 810 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 5 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.

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality 2007/2008

Country of origin	Argentina Average	RSA Crop Average
Class and grade yellow maize	**YM2**	**YM2**
RSA Grading		
Defective kernels above 6.35 mm sieve, %	2.6	2.5
Defective kernels below 6.35 mm sieve, %	8.4	4.2
Total defective kernels, %	11.0	6.7
Other colour maize kernels, %	0.0	0.4
Foreign matter, %	0.2	0.2
Combined deviation, %	11.2	7.3
Pinked maize kernels, %	9.9	0.0
Noxious seeds	0	0
Physical Factors		
Hectolitre mass, kg/hl	76.0	75.0
100 Kernel mass, g	27.4	31.6
Stress cracks, %	36	8
Milling Index	95.2	92.7
Kernel Size		
% on top 10 mm	3.4	15.8
% on top 8 mm	64.1	63.2
% through 8 mm	32.5	21.0
Breakage susceptibility, g		
Below 6.35 mm sieve	4.5	3.6
Below 4.8 mm sieve	2.8	2.5
Nutritional Factors		
Protein, %	8.9	8.4
Fat, % (db)	4.8	3.7
Starch, % (db)	72.4	72.0
Number of samples	***5***	***27***
Mycotoxins		
Total Aflatoxin, ppb (ug/kg) [max. value]	0 [0]	0 [0]
Fumonisin, ppm (mg/kg) [max. value]	1.40 [1.40]	0.18 [0.36]
Deoxynivalenol, ppm (mg/kg) [max. value]	<0.25 [<0.25]	<0.25 [<0.25]
Ochratoxin, ppb (ug/kg) [max. value]	0 [0]	0.5 [1.00]
Zearalenone, ppm (mg/kg) [max. value]	0 [0]	0 [0]
Number of samples	***1***	***2***
GMO		
MON810, % Samples positive (> LOD of 0.15 %)	0	100
NK603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	100	100
Number of samples	***1***	***2***

SOUTH AFRICAN MAIZE CROP QUALITY 2008/2009 (Averages)

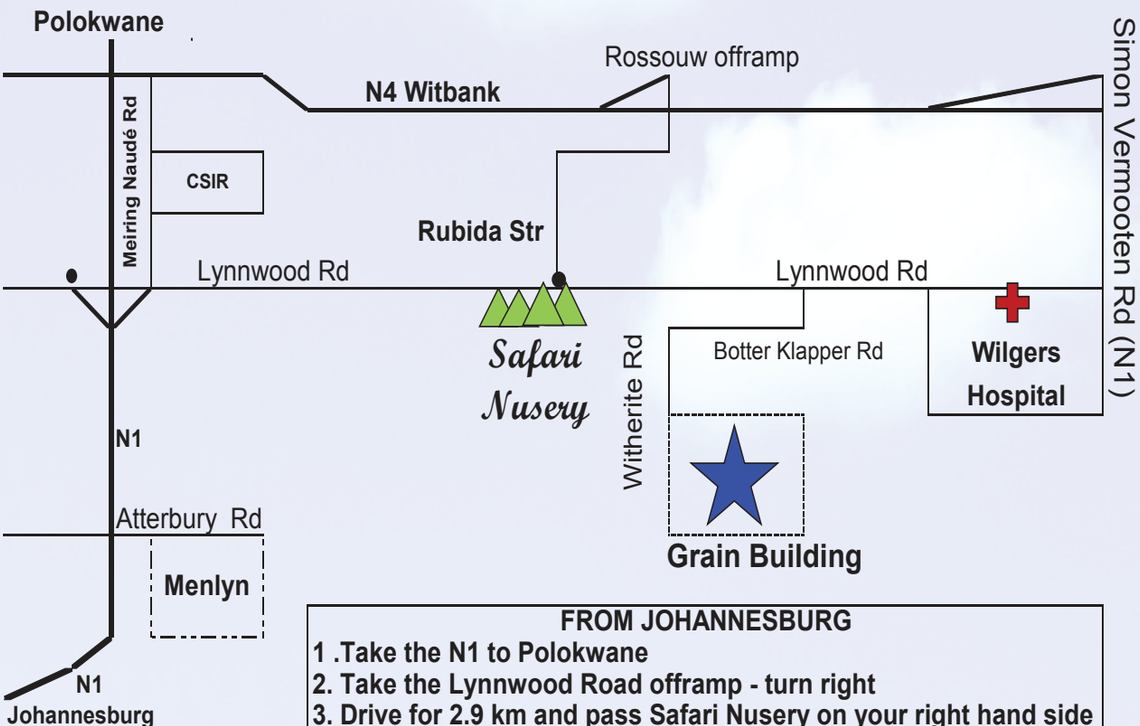
Class and grade of maize	WM1	WM2	WM3	WCOM	YM1	YM2	YM3	YCOM	Weighted Ave
RSA Grading									
Defective kernels above 6.35 mm sieve, %	2.2	5.8	14.0	3.8	2.0	4.9	1.3	6.1	2.5
Defective kernels below 6.35 mm sieve, %	1.5	2.2	1.7	2.0	1.8	3.7	6.2	2.3	1.8
Total defective kernels, %	3.7	7.9	15.7	5.8	3.9	8.6	7.5	8.5	4.2
Other colour maize kernels, %	0.2	0.7	1.1	0.4	0.1	0.5	0.0	7.2	0.2
Foreign matter, %	0.1	0.2	0.2	2.0	0.1	0.2	0.4	1.2	0.2
Combined deviation, %	4.0	8.8	17.0	8.3	4.1	9.4	8.0	16.8	4.6
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	77.7	76.9	76.0	73.4	76.7	75.4	76.3	76.0	77.2
100 Kernel mass, g	35.1	34.7	36.8	35.7	33.1	30.7	31.2	30.8	34.2
Stress cracks, %	5	7	9	8	6	6	4	7	5
Milling Index	94.1	91.6	94.2	98.9	93.7	87.8	94.9	89.4	93.6
Kernel Size									
% on top 10 mm	26.0	27.8	25.4	30.1	16.0	12.2	19.2	10.7	21.9
% on top 8 mm	63.4	61.6	64.1	63.0	66.5	67.3	64.8	66.7	64.6
% through 8 mm	10.5	10.6	10.6	6.8	17.5	20.6	16.1	22.6	13.4
Breakage susceptibility, g									
Below 6.35 mm sieve	1.4	2.3	4.6	1.5	1.8	2.2	1.3	2.2	1.6
Below 4.8 mm sieve	1.1	1.6	3.4	1.0	1.2	1.6	0.9	1.7	1.2
Nutritional Values									
Protein, %	8.3	8.4	8.8	8.8	8.2	8.0	8.7	8.2	8.3
Fat, % (db)	4.0	3.9	3.9	4.0	3.6	3.6	3.9	3.5	3.8
Starch, % (db)	72.4	72.5	72.0	71.8	73.1	73.4	72.7	73.3	72.7
Number of samples	***440***	***36***	***4***	***3***	***297***	***25***	***2***	***3***	***810***
Mycotoxins									
Total Aflatoxin, ppb (ug/kg) [max. value] (LOD 2 ppb)	0 [0]	0 [0]	-	0 [0]	0 [0]	0 [0]	-	0 [0]	0 [0]
Fumonisin, ppm (mg/kg) [max. value] (LOD 0.1 ppm)	0.55 [3.30]	0.64 [1.90]	-	3.20 [3.20]	0.25 [1.90]	1.23 [3.00]	-	0.15 [0.15]	0.49 [3.30]
Deoxynivalenol, ppm (mg/kg) [max. value] (LOD 0.25 ppm)	0.33 [1.50]	0.92 [2.90]	-	2.70 [2.70]	0.36 [2.40]	0.45 [1.00]	-	0 [0]	0.43 [2.90]
Ochratoxin A, ppb (ug/kg) [max. value] (LOD 1 ppb)	0.21 [1.00]	0 [0]	-	0 [0]	0.09 [1.00]	0 [0]	-	0 [0]	0.01 [0.16]
Zearalenone, ppm (mg/kg) [max. value] (LOD 0.025 ppm)	0.01 [0.12]	0.01 [0.05]	-	0 [0]	0.01 [0.16]	0 [0]	-	0 [0]	0.12 [1.00]
Number of samples	***43***	***9***	***-***	***1***	***33***	***3***	-	***1***	***90***
GMO									
MON810, % Samples positive (> LOD of 0.15 %)	90	89	-	100	91	100	-	100	91
NK603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	91	78	-	100	91	100	-	100	90
Number of samples	***43***	***9***	***-***	***1***	***33***	***3***	-	***1***	***90***

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

Please take note:

The SAGL will be moving to a
new premisses on 1 June 2010.

Grain Building
Witherite Road
The Willows
0040



FROM JOHANNESBURG

1 .Take the N1 to Polokwane
2. Take the Lynnwood Road offramp - turn right
3. Drive for 2.9 km and pass Safari Nusery on your right hand side
4. Turn right into Botter Klapper Road
5. Follow the road to the Grain Building entrance

FROM POLOKWANE

1. Take the N1 to Johannesburg
2. Take the N4 to Witbank in an easterly direction
3. Take the Rossouw offramp from the Witbank highway
4. Turn right into Rossouw street
5. Turn right into Rubida (Spar) follow the road up Rubida street
6. Turn left into Lynnwood Road
7. Turn right into Botter Klapper Road
8. Follow the road to the Grain Building entrance