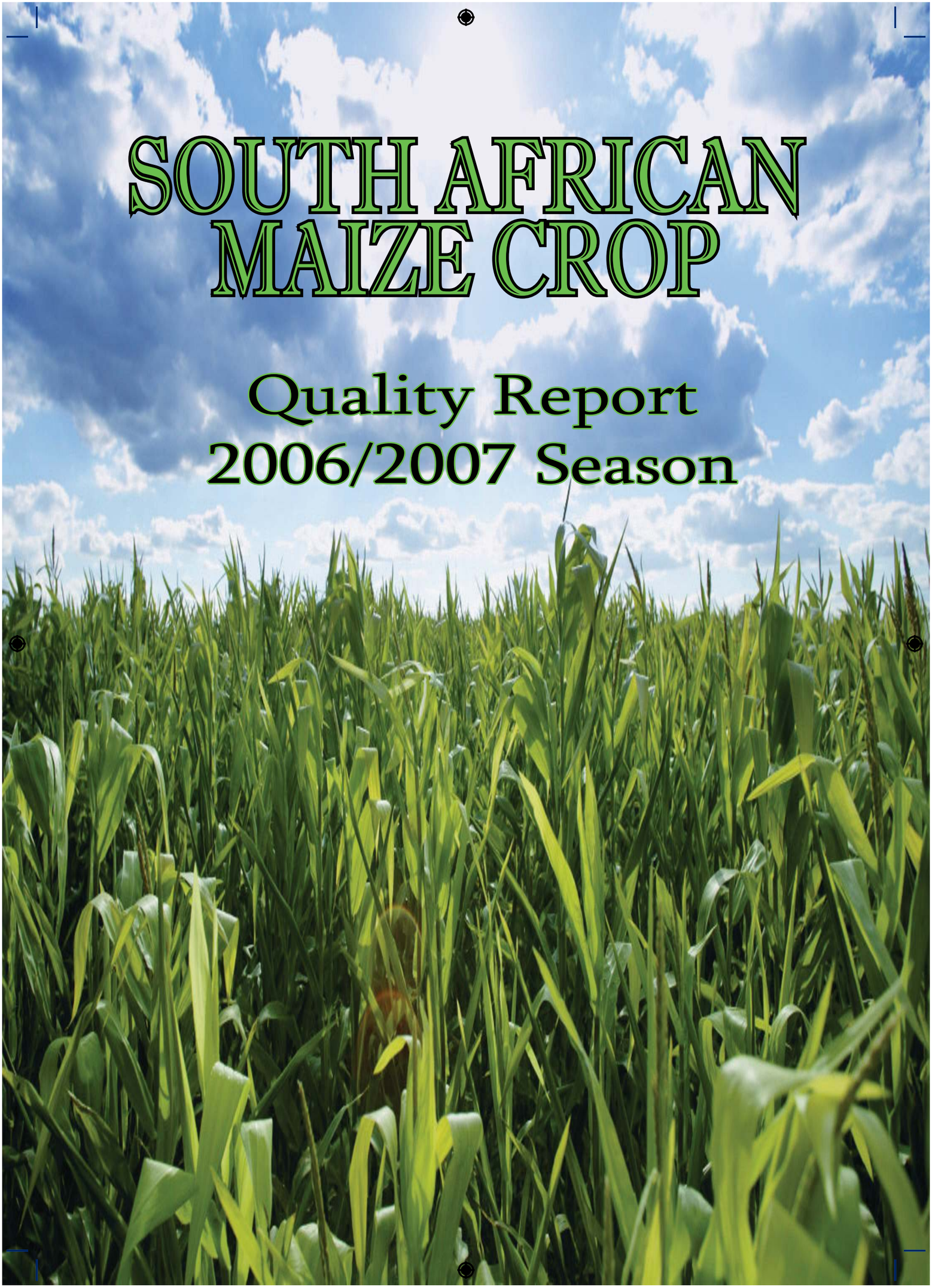

SOUTH AFRICAN MAIZE CROP

Quality Report 2006/2007 Season

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SOUTH AFRICAN
COMMERCIAL MAIZE QUALITY
2006/2007

Acknowledgments

With gratitude to:

* **The Maize Trust for its financial support in conducting this survey.**

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

Introduction

The calculated final commercial crop figure for maize for the 2006/2007 season by the National Crop Estimates Committee was 7 125 000 tons. This is 7,7 % higher than the previous season's 6 618 000 tons. The average production from 1996/97 to 2005/06 was 8,63 million tons. The major maize-producing region was the Free State (2 787 000 tons), followed by Mpumalanga (1 441 500 tons) and the North West (1 271 500 tons). White maize contributed 60 % to the total production, which is 2 % less than the previous year.

900 composite samples, proportionally representing white and yellow maize of each production region, were analysed for quality. All samples were graded according to RSA and USA grading regulations. 100 kernel mass, kernel size, breakage susceptibility, stress cracks, milling index, fat, protein and starch were determined on all samples. Roff milling and whiteness index were done on white maize samples. Mycotoxin analyses as well as testing for GM maize were performed on 90 samples representative of white and yellow maize produced per region.

The 900 samples analysed consisted of 563 white maize samples and 337 yellow maize samples. Of the 563 white maize samples analysed, 81 % were WM1, 12 % WM2, 7 % WM3 and only four samples were of the Class Other Maize white. Of the 337 yellow maize samples analysed, 78 % were YM1, 18 % YM2, 2 % YM3 and eight samples were of the Class Other Maize yellow.

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

Crop quality

This crop was of good quality and 80 % of the crop graded as maize grade 1. Smaller size kernels were distinctive of this crop. The defective deviation that occured the most above the 6,35 mm sieve, was discolouration that exceeds the normal browning at the connection tip, this is caused by water damage.

The kernel size were markedly smaller than previous seasons and the 100 kernel mass averaged 28,9 g (4,0 g lower than the previous season). The average hectolitre mass was 77,5 kg/hl (75,9 kg/hl during 2005/2006).

The average percentage of total defective kernels of 5,1 % was lower than the previous season's 7,8 %.

The average fat content was 3,7 % (db), average starch content 73,0 % (db) and average protein 9,4 % (db). The average fat content were lower than the ten year average of 4,0 % (db), the average protein content were 0,5 % higher than the ten year average. The average starch content increased from 71,2 % (db) the previous season to 73,0 % (db).

The average milling index was 98,3 about 7 higher than the previous season's 90,8. This indicate slightly better extraction even with the smaller kernels.

Very little visual fungi such as *Fusarium sp.* and *Diplodia sp.* were present and the mycotoxin levels averaged lower than in previous seasons.

Ninety-seven percent of the samples tested positive for MON 810 (Bt maize event) and fifty-nine percent positive for NK 603 (RUR).

Maize quality (Summary)

Overall

The white maize graded slightly better than the yellow maize and had an average hectolitre mass of 78,1 kg/hl while the yellow maize averaged 76,4 kg/hl. White maize had bigger kernels than the yellow maize.

Yellow maize had a slightly lower fat content (3,5 % (db)) than white maize (3,9 % (db)), while the starch content in yellow maize (73,3 % (db)) were slightly higher than in white maize (72,9 % (db)). The average protein content in white maize was 9,3 % (db) and in yellow maize 9,5 % (db).

Main production regions

The maize quality of the three main maize producing provinces differed in some aspects.

Free State

This province produced 40 % of all the commercial maize in South Africa, of which 67 % was white maize and 33 % yellow maize.

The weighted average percentage total defective kernels for the Free State was 4,4 %. North West averaged 7,2 % and Mpumalanga 3,9 %.

The maize produced in the Free State averaged a hectolitre mass of 77,9 kg/hl. (North West 77,5 kg/hl and Mpumalanga 76,3 kg/hl.) The white maize in the Free State averaged 78,4 kg/hl and the yellow maize 76,0 kg/hl.

The 100 kernel mass for the Free State averaged 29,2 g, with the white maize averaging 30,1 g and the yellow maize 27,0 g. (Mpumalanga and North West averaged 27,0 g and 29,0 g respectively.)

This province had the "largest" kernel size with an average of 14,9 % of the maize having kernels > 10mm. (Mpumalanga was 12,8 % and North West 14,2 %.)

Stress cracks were the lowest in the Free State (2,7 %), then the North West with 3,1 %, and Mpumalanga had 3,8 %.

The average milling index in the Free State was 98,3 %, 101,4 % in North West and 94,5 % in Mpumalanga.

Mpumalanga

This province produced 21 % of the total commercial maize production in South Africa, of which 49 % was white maize and 51 % yellow maize.

In all three provinces white maize averaged about 3 g higher 100 kernel mass than yellow maize, while the hectolitre mass of white maize averaged about 2 kg/hl higher than yellow maize.

The maize kernels produced in Mpumalanga had an average breakage susceptibility of 1,9 g passing through the 6,35 mm sieve while the Free State and Mpumalanga had averages of 1,5 g and 1,9 g respectively passing through the 6,35 mm sieve.

All three provinces gave an average fat content between 3,5 % and 3,9 %. The starch content in these three regions averaged between 72,5 % to 73,3 %.

Mpumalanga had the lowest incidence of both Fumonisin and Deoxynivalenol.

North West

This province produced 18 % of all the commercial maize grown in South Africa, of which 83 % was white maize and 17 % yellow maize.

The average defective kernels for North West above the 6,35 mm sieve averaged the highest with 5,1 %, the Free State followed with 2,1 % and Mpumalanga with 1,9 %. The average defective kernels below the 6.35 mm sieve for all three regions were more or less the same.

The North West gave the highest average protein of 9,7 % (db), followed by the Free State (9,4 %) and Mpumalanga (9,3 %).

The white maize from North West gave the highest average whiteness index of 20,4 (sifted 87:13). (The Free State had an average of 21,1 and Mpumalanga 19,2).

North West had the highest incidence of Fumonisin while Free State had the highest incidence of Deoxynivalenol.

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. Regions 12 to 20 are all within the North West.

Regions 21 to 28 are in the Free State. The Free State contributed 40 %, Mpumalanga (regions 29 to 33) contributed 21 % and the North West contributed 18 % of the total production. These contributions make up 79 % of the total maize production in the RSA.

Region 34 falls within Gauteng, region 35 within the Limpopo Province and region 36 within KwaZulu-Natal.

Sampling

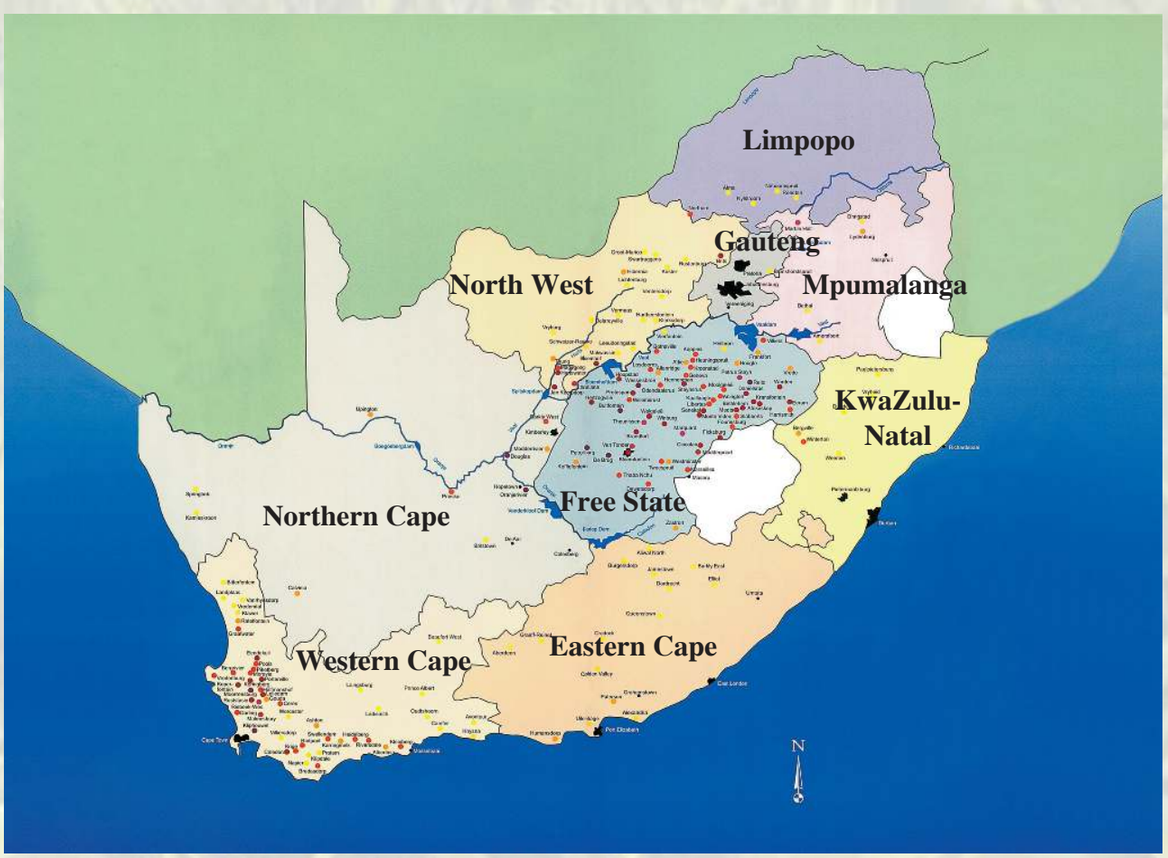
All the samples tested and received from the grain storers are drawn in the following way:

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 the 10 kg sample are thrown into 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.

Only three samples were received from the millers who receive about 15 % of the maize crop directly from the producers.

South African Provinces



Genetic Modification

Annually the SAGL screen 10 % of the crop samples to test for MON 810 (Bt maize event) and NK 603 (RUR).

The methodology the SAGL uses is a quantitative enzyme-linked immuno sorbent assay. The SAGL does however not report quantities recorded below the limit of detection and above the value of the reference standards used, the reason being that the methodology can not accurately measure beyond those values. MON 810 were positively identified in 97 % of the samples tested and NK 603 in 59 % of the samples tested. Please note that the crop quality samples received by the SAGL are actually composite samples made up by the silos per class and grade of individual deliveries.

Mycotoxins

Aflatoxin was detected on three randomly selected crop samples. Thirteen samples tested positive for Ochratoxin A.

The Fumonisin average was 0,64 ppm. Eight samples tested higher than 2,0 ppm for Fumonisin with a maximum of 4,5 ppm.

Deoxynivalenol (DON) was detected in 47 % of the samples tested, giving an average of 0,5 ppm, with a maximum of 3,1 ppm.

None of the ninety samples showed any traces of Zearalenone.

Imported Maize

South Africa has imported in total 1 073 511 tons of yellow maize from Argentina as on 15/02/2008 for the 2006/2007 production season and 27 950 tons of white maize from African countries. (Season ends on 30/04/2008.) (SAGIS website.)

The quality data of the imported maize compared to the average quality of the RSA maize of the same class and grade for this season are given on pages 51 and 52.

2006/2007 Imported maize (up to 01/02/2008)

Eighty-seven maize samples from imported maize were analysed up to 01/02/2008. Of these maize, four samples graded as YM2 and eighty-three samples graded as Class Other Maize.

The major downgrading factor of imported maize to YM2 was the high percentage of defective kernels below the 6,35 mm sieve.

Imported maize downgraded to Class Other Maize were mainly due to the high percentage of pinked maize kernels.

The imported YM2 had an average hectolitre mass of 77,1 kg/hl while RSA YM2 had an average hectolitre mass of 74,4 kg/hl.

The imported maize even had smaller kernels than this season's local crop characterized by small kernels.

The average weighted fat content of the imported maize (4,7 % (db)) were higher than the average of the same RSA grade maize (3,5 % (db)), while the RSA maize gave a slightly higher protein content and a markedly better starch content.

Most quality tendencies are similar to the previous season.

The imported maize had an average total Aflatoxin of 0,43 ppb (µg/kg) with a maximum of 9,0 ppb in a sample.

The average Fumonisin content of imported maize were 1,66 ppm (mg/kg) with a maximum of 5,30 ppm. RSA maize in that same class and grade averaged 1,05 ppm Fumonisin and a maximum of 4,50 ppm.

RSA maize of the same class and grade this season had an average Deoxynivalenol (DON) content of 0,96 ppm with a maximum of 2,10 ppm, while the imported maize had an average of 0,84 ppm and a maximum of 2,80 ppm DON. The averages values of Ochratoxin A and Zearalenone of imported maize were low while none of these mycotoxins were traced this season in RSA YM2 and RSA COM maize.

Grain Production Regions

With each region is given the different Grain Handlers with specific silos.

Region 8: Eastern Cape Northern Region

	Aliwal Noord

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)

With each region is given the different Grain Handlers with specific silos.

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

MGK (Prodsure)	Battery	*MGK (Prodsure)*	Brits
MGK (Prodsure)	Rustenburg	*MGK (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)

With each region is given the different Grain Handlers with specific silos.

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)

With each region is given the different Grain Handlers with specific silos.

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

MGK (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 2006/07 SEASON COMPARED TO THE 2005/06 SEASON

PROVINCES	FINAL ESTIMATE 2006/07			% difference to 2005/06	FINAL ESTIMATE 2005/06		
	White Tons	Yellow Tons	Total Tons		White Tons	Yellow Tons	Total Tons
Western Cape	0	20 000	20 000	-26	0	27 000	27 000
Northern Cape	39 900	495 000	534 900	24	157 500	275 000	432 500
Free State	1 856 000	931 000	2 787 000	37	1 345 500	684 000	2 029 500
Eastern Cape	13 500	67 600	81 100	12	16 200	56 000	72 200
KwaZulu-Natal	190 000	169 200	359 200	15	172 800	140 400	313 200
Mpumalanga	704 000	737 500	1 441 500	-7	733 200	810 000	1 543 200
Limpopo	96 000	35 200	131 200	133	40 800	15 400	56 200
Gauteng	174 000	101 500	275 500	-11	230 000	80 000	310 000
North West	1 054 000	217 500	1 271 500	-15	1 197 000	299 600	1 496 600
Total RSA	4 127 400	2 774 500	6 901 900	10	3 893 000	2 387 400	6 280 400
% of crop	60	40			62	38	
Figures obtained from the National Crop Estimates Committee							

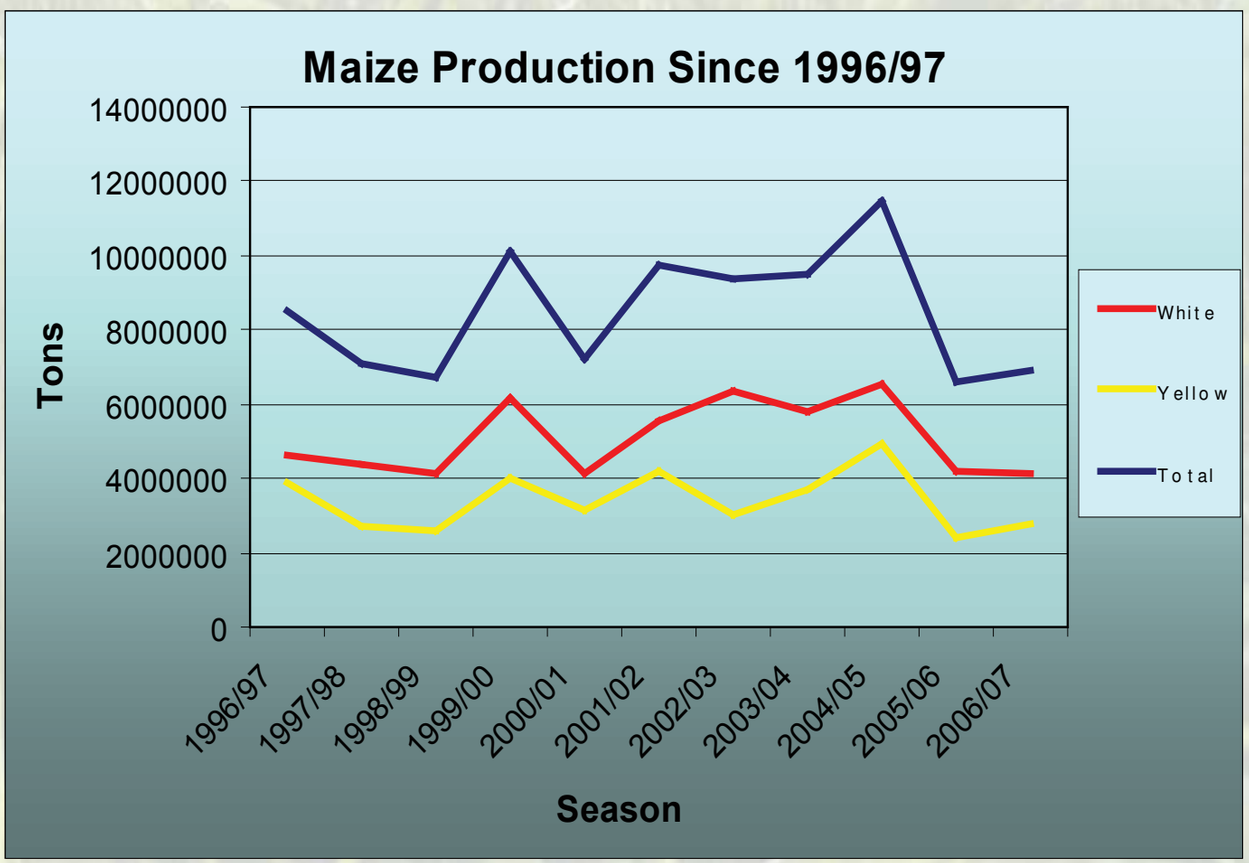


TABLE 2: RSA GRADING OF WHITE MAIZE (2006/2007)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Another 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 8	1.2	1.2	1.2	4.6	4.6	4.6	5.8	5.8	5.8	0.2	0.2	0.2	0.0	0.0	0.0	6.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
1	Region 10	4.9	4.9	4.9	1.7	1.7	1.7	6.6	6.6	6.6	0.1	0.1	0.1	0.0	0.0	0.0	6.7	6.7	6.7	0.0	0.0	0.0	1.0	1.0	1.0	1.7	1.7	1.7	0.7	0.7	0.7
9	Region 11	1.2	0.3	2.2	1.2	0.5	2.3	2.4	1.5	4.0	0.0	0.0	0.1	0.3	0.0	1.0	2.7	1.5	5.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.0
6	Region 12	1.9	0.6	2.8	1.5	0.8	2.3	3.4	1.4	4.4	0.1	0.0	0.2	0.0	0.0	0.1	3.6	1.4	4.6	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.0	0.4
4	Region 13	2.4	0.9	4.1	1.5	0.9	3.0	3.9	2.8	5.0	0.1	0.1	0.1	0.0	0.0	0.2	4.0	2.9	5.1	0.0	0.0	0.0	0.1	0.0	0.3	0.2	0.0	0.7	0.0	0.0	0.0
28	Region 14	1.3	0.5	3.3	1.2	0.1	3.8	2.5	0.6	4.8	0.1	0.0	0.2	0.1	0.0	0.4	2.7	0.6	4.9	0.0	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.5	0.0	0.0	0.4
27	Region 15	1.4	0.5	4.8	1.6	0.8	2.4	3.0	1.8	5.6	0.1	0.0	0.2	0.1	0.0	0.3	3.2	1.9	5.6	0.0	0.0	0.4	0.1	0.0	0.4	0.1	0.0	0.8	0.1	0.0	0.4
11	Region 16	1.2	0.1	3.3	1.8	0.2	4.5	3.0	0.3	5.3	0.2	0.0	0.3	0.2	0.0	1.5	3.3	0.4	5.8	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.2
7	Region 17	2.7	0.9	5.8	1.5	0.3	4.6	4.1	2.7	6.9	0.1	0.0	0.2	0.0	0.0	0.2	4.3	2.9	7.1	0.0	0.0	0.0	0.1	0.0	0.7	0.2	0.0	0.6	0.0	0.0	0.0
17	Region 18	1.6	0.3	2.5	2.0	0.7	3.4	3.6	1.9	5.4	0.1	0.0	0.2	0.1	0.0	0.5	3.9	2.2	5.6	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
7	Region 19	2.0	1.2	3.2	2.4	2.2	2.7	4.4	3.4	5.5	0.2	0.1	0.3	0.1	0.0	0.4	4.7	3.7	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Region 20	1.6	0.8	3.9	1.8	1.2	2.5	3.5	2.4	5.8	0.1	0.1	0.2	0.2	0.0	0.5	3.8	2.7	6.4	0.0	0.0	0.0	0.1	0.0	0.4	0.2	0.0	0.4	0.1	0.0	0.4
14	Region 21	1.4	0.2	2.8	2.3	1.1	5.5	3.7	1.4	5.9	0.1	0.0	0.3	0.2	0.0	0.6	4.0	1.6	6.4	0.0	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.4	0.0	0.0	0.0
31	Region 22	1.8	0.6	4.9	1.8	0.5	4.7	3.6	1.7	6.5	0.1	0.0	0.2	0.0	0.0	0.2	3.8	1.9	6.7	0.0	0.0	0.3	0.1	0.0	0.4	0.1	0.0	0.7	0.0	0.0	0.4
89	Region 23	1.5	0.2	4.7	1.8	0.7	3.8	3.3	1.5	6.6	0.1	0.0	0.3	0.1	0.0	0.5	3.5	1.5	6.9	0.0	0.0	0.7	0.1	0.0	0.6	0.1	0.0	0.6	0.0	0.0	0.4
31	Region 24	1.6	0.7	5.1	1.9	0.9	2.7	3.5	2.4	6.7	0.1	0.0	0.3	0.1	0.0	0.4	3.7	2.5	7.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.3
18	Region 25	1.5	0.5	4.1	2.0	0.9	5.3	3.5	1.8	6.2	0.2	0.1	0.2	0.1	0.0	0.4	3.7	2.0	6.5	0.0	0.0	0.0	0.2	0.0	0.6	0.2	0.0	0.7	0.1	0.0	0.4
7	Region 26	1.3	0.7	2.5	2.3	2.1	2.8	3.6	3.1	4.6	0.1	0.0	0.2	0.4	0.0	0.9	4.2	3.6	5.2	0.0	0.0	0.0	0.1	0.0	0.5	0.1	0.0	0.5	0.0	0.0	0.3
7	Region 27	1.6	0.5	4.9	2.5	1.9	3.2	4.1	2.5	6.9	0.1	0.0	0.3	0.4	0.0	0.7	4.7	2.9	7.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0
16	Region 28	1.7	0.8	3.1	1.6	0.4	2.9	3.3	1.2	5.0	0.1	0.1	0.3	0.3	0.0	1.0	3.8	1.3	5.3	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.4
15	Region 29	1.0	0.5	1.8	1.4	0.8	2.1	2.4	1.9	3.0	0.2	0.1	0.2	0.1	0.0	0.6	2.7	2.1	3.5	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.2	0.0	0.0	0.3
20	Region 30	1.8	0.2	3.9	2.0	0.9	4.2	3.8	1.7	6.7	0.2	0.1	0.3	0.2	0.0	0.8	4.2	1.9	7.1	0.0	0.0	0.0	0.2	0.0	0.7	0.3	0.0	0.9	0.1	0.0	0.4
6	Region 31	1.3	1.0	1.9	1.3	0.5	1.7	2.6	1.7	3.4	0.1	0.1	0.2	0.1	0.0	0.3	2.8	1.8	3.5	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.0	0.4	0.0	0.0	0.0
20	Region 32	1.2	0.3	2.7	1.7	0.2	3.4	2.9	1.1	5.3	0.2	0.0	0.3	0.1	0.0	0.4	3.1	1.1	5.5	0.0	0.0	0.4	0.1	0.0	0.6	0.0	0.0	0.2	0.0	0.0	0.4
18	Region 33	1.8	0.5	4.1	1.7	0.1	3.0	3.5	0.8	5.9	0.1	0.0	0.2	0.1	0.0	0.5	3.8	0.8	6.0	0.0	0.0	0.4	0.2	0.0	0.8	0.3	0.0	0.5	0.1	0.0	0.5
22	Region 34	1.1	0.4	1.9	2.4	0.5	5.7	3.5	1.6	6.7	0.1	0.0	0.3	0.1	0.0	0.4	3.7	1.8	6.7	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.2
10	Region 35	1.4	0.5	2.7	2.0	1.5	2.5	3.4	1.9	4.5	0.1	0.1	0.2	0.1	0.0	0.4	3.6	2.0	4.6	0.0	0.0	0.0	0.1	0.0	0.4	0.2	0.0	0.4	0.1	0.0	0.4
7	Region 36	1.3	0.4	3.2	2.3	1.6	2.8	3.6	2.3	6.0	0.1	0.0	0.2	0.0	0.0	0.1	3.7	2.3	6.3	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.1
455	**Ave WM 1**	**1.5**			**1.8**			**3.3**			**0.1**			**0.1**			**3.6**			**0.0**			**0.1**			**0.1**			**0.0**		
	Min WM 1		**0.1**			**0.1**			**0.3**			**0.0**			**0.0**			**0.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM 1			**5.8**			**5.7**			**6.9**			**0.3**			**1.5**			**7.6**			**0.7**			**1.0**			**1.7**			**0.7**

TABLE 2: RSA GRADING OF WHITE MAIZE (2006/2007) (continue)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Another 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																														
6	Region 12	7.0	4.9	9.5	2.3	1.8	3.2	9.4	7.4	12.7	0.2	0.1	0.4	0.4	0.0	0.9	9.9	7.8	13.2	0.1	0.0	0.4	0.9	0.4	1.4	0.8	0.4	2.1	0.3	0.0	0.4
6	Region 13	5.9	2.2	8.8	3.1	1.5	7.0	9.1	7.1	10.5	0.1	0.1	0.2	0.7	0.0	2.2	9.9	8.2	11.6	0.1	0.0	0.4	0.8	0.0	1.5	0.8	0.0	4.4	0.1	0.0	0.5
7	Region 14	7.5	5.4	10.6	1.6	0.9	2.5	9.1	7.9	12.6	0.2	0.0	0.3	0.2	0.0	0.4	9.5	8.4	12.9	0.1	0.0	0.5	0.6	0.0	1.1	0.6	0.0	1.7	0.1	0.0	0.4
2	Region 15	4.4	1.2	7.6	1.0	0.6	1.5	5.4	1.8	9.1	0.4	0.4	0.5	0.2	0.0	0.4	6.1	2.6	9.6	0.0	0.0	0.0	0.1	0.0	0.2	1.5	0.2	2.8	0.0	0.0	0.0
1	Region 16	11.7	11.7	11.7	1.2	1.2	1.2	12.9	12.9	12.9	0.2	0.2	0.2	0.0	0.0	0.0	13.0	13.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Region 17	7.2	3.6	11.8	1.7	0.4	4.4	8.9	7.1	12.7	0.1	0.0	0.2	0.4	0.0	1.1	9.4	7.2	13.9	0.2	0.0	0.5	0.5	0.0	1.0	0.4	0.0	1.9	0.0	0.0	0.2
8	Region 19	5.8	1.6	8.7	3.9	2.4	6.4	9.8	7.8	12.7	0.2	0.1	0.4	0.2	0.0	0.5	10.1	8.1	13.0	0.4	0.0	1.1	0.7	0.0	1.2	0.7	0.0	1.3	0.0	0.0	0.0
1	Region 20	4.5	4.5	4.5	3.5	3.5	3.5	8.0	8.0	8.0	0.1	0.1	0.1	0.3	0.3	0.3	8.4	8.4	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0
9	Region 21	5.1	0.5	9.3	2.8	1.3	6.4	7.9	3.6	11.3	0.3	0.1	0.5	0.4	0.0	2.5	8.6	4.1	12.2	0.0	0.0	0.4	0.4	0.0	1.5	0.4	0.0	1.3	0.0	0.0	0.2
1	Region 22	3.9	3.9	3.9	3.5	3.5	3.5	7.4	7.4	7.4	0.2	0.2	0.2	0.2	0.2	0.2	7.7	7.7	7.7	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.4	0.4	0.0	0.0	0.0
8	Region 23	4.9	2.1	7.0	2.5	0.5	9.5	7.4	2.6	11.6	0.2	0.1	0.4	0.3	0.0	2.5	8.0	3.0	12.0	0.0	0.0	0.0	0.3	0.0	1.0	0.2	0.0	0.4	0.0	0.0	0.2
3	Region 24	6.9	5.4	9.0	2.2	0.9	3.6	9.1	7.1	12.6	0.2	0.0	0.3	0.2	0.0	0.5	9.4	7.1	13.3	0.0	0.0	0.0	0.3	0.0	0.5	0.7	0.0	1.5	0.1	0.0	0.2
1	Region 28	5.2	5.2	5.2	2.8	2.8	2.8	8.0	8.0	8.0	0.2	0.2	0.2	0.8	0.8	0.8	9.0	9.0	9.0	0.0	0.0	0.0	0.7	0.7	0.7	0.2	0.2	0.2	0.3	0.3	0.3
1	Region 30	7.3	7.3	7.3	2.0	2.0	2.0	9.2	9.2	9.2	0.2	0.2	0.2	0.0	0.0	0.0	9.4	9.4	9.4	0.3	0.3	0.3	0.4	0.4	0.4	1.2	1.2	1.2	0.0	0.0	0.0
1	Region 31	6.2	6.2	6.2	1.8	1.8	1.8	8.0	8.0	8.0	0.2	0.2	0.2	0.4	0.4	0.4	8.6	8.6	8.6	0.0	0.0	0.0	0.4	0.4	0.4	0.7	0.7	0.7	0.0	0.0	0.0
1	Region 33	1.2	1.2	1.2	4.1	4.1	4.1	5.3	5.3	5.3	0.3	0.3	0.3	2.7	2.7	2.7	8.3	8.3	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Region 34	8.0	5.4	10.6	2.5	2.0	2.9	10.4	8.3	12.6	0.1	0.0	0.2	0.7	0.5	0.8	11.3	9.4	13.2	0.4	0.0	0.8	0.4	0.0	0.3	1.0	0.8	1.2	0.2	0.0	0.3
66	**Ave WM 2**	**6.1**			**2.5**			**8.7**			**0.2**			**0.4**			**9.2**			**0.1**			**0.5**			**0.6**			**0.1**		
	Min WM 2		**0.5**			**0.4**			**1.8**			**0.0**			**0.0**			**2.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM 2			**11.8**			**9.5**			**12.9**			**0.5**			**2.7**			**13.9**			**1.1**			**1.5**			**4.4**			**0.5**

TABLE 2: RSA GRADING OF WHITE MAIZE (2006/2007) (continue)

Number of samples	Region	% Defective Kernels						%			%			%			%			%			%			%			%		
		Above 6.35 mm sieve			Below 6.35 mm sieve			Total defective			Foreign matter			Another Colour			Total Deviation			Pinked Kernels			Diplodia Kernels			Fusarium Kernels			Cobrot Kernels		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																															
4	Region 12	12.6	11.6	14.9	2.3	1.9	2.8	14.9	14.0	16.9	0.2	0.2	0.3	0.7	0.2	1.4	15.8	14.5	17.5	0.1	0.0	0.3	0.9	0.4	1.5	1.0	0.8	1.4	0.3	0.0	0.4
3	Region 13	12.5	11.1	13.9	1.6	1.0	2.6	14.2	13.7	15.0	0.2	0.2	0.3	0.3	0.0	0.4	14.7	14.4	15.2	0.3	0.0	0.4	1.3	0.8	2.1	1.3	0.5	2.3	0.3	0.0	0.7
4	Region 14	16.0	13.5	17.0	1.5	0.6	2.2	17.6	14.2	19.0	0.2	0.1	0.4	0.1	0.0	0.2	17.9	14.5	19.3	0.3	0.0	0.7	1.4	0.8	2.8	1.4	0.7	1.7	0.5	0.3	1.0
4	Region 15	14.5	5.7	22.6	2.9	0.7	8.1	17.4	6.5	24.1	0.2	0.0	0.6	0.6	0.0	2.3	18.2	7.1	26.4	0.3	0.0	1.3	1.1	0.0	2.9	3.4	1.6	4.4	0.2	0.0	0.7
3	Region 16	21.6	13.2	26.3	1.5	1.2	1.7	23.1	14.8	27.6	0.4	0.0	0.7	0.1	0.0	0.1	23.6	14.8	28.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Region 17	12.4	2.1	17.5	1.7	1.2	2.5	14.1	3.7	20.0	0.2	0.1	0.6	0.3	0.0	1.1	14.7	4.4	20.4	0.3	0.0	0.9	1.2	0.0	1.9	1.0	0.0	2.2	0.2	0.0	0.4
3	Region 19	12.4	11.4	14.3	2.8	2.5	3.2	15.2	14.0	16.8	0.2	0.2	0.3	0.1	0.0	0.2	15.5	14.2	17.1	0.1	0.0	0.4	1.0	0.7	1.4	1.6	1.0	2.4	0.2	0.0	0.4
2	Region 20	18.4	16.1	20.6	2.6	2.3	2.8	20.9	18.9	23.0	0.2	0.2	0.2	0.5	0.4	0.6	21.6	19.5	23.8	0.0	0.0	0.0	0.8	0.6	1.0	1.5	1.3	1.7	0.3	0.2	0.4
1	Region 21	17.9	17.9	17.9	3.0	3.0	3.0	20.9	20.9	20.9	0.3	0.3	0.3	0.4	0.4	0.4	21.7	21.7	21.7	0.0	0.0	0.0	1.6	1.6	1.6	2.0	2.0	2.0	0.4	0.4	0.4
1	Region 22	9.1	9.1	9.1	3.9	3.9	3.9	13.1	13.1	13.1	0.3	0.3	0.3	0.0	0.0	0.0	13.3	13.3	13.3	0.0	0.0	0.0	1.1	1.1	1.1	0.5	0.5	0.5	0.0	0.0	0.0
2	Region 23	2.0	1.8	2.2	6.8	2.0	11.6	8.8	3.8	13.7	0.5	0.3	0.7	0.1	0.0	0.1	9.3	4.6	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0
2	Region 24	7.0	0.7	13.2	2.3	1.8	2.9	9.3	3.6	15.0	0.5	0.2	0.7	0.3	0.1	0.6	10.1	4.4	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
1	Region 32	1.1	1.1	1.1	3.9	3.9	3.9	5.0	5.0	5.0	0.2	0.2	0.2	6.1	6.1	6.1	11.3	11.3	11.3	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 33	2.3	2.3	2.3	1.6	1.6	1.6	3.9	3.9	3.9	0.7	0.7	0.7	0.2	0.2	0.2	4.8	4.8	4.8	0.0	0.0	0.0	0.3	0.3	0.3	1.0	1.0	1.0	0.3	0.3	0.3
1	Region 34	0.9	0.9	0.9	5.0	5.0	5.0	5.9	5.9	5.9	0.6	0.6	0.6	0.1	0.1	0.1	6.6	6.6	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	**Ave WM 3**	**12.4**			**2.5**			**15.0**			**0.3**			**0.5**			**15.7**			**0.2**			**0.9**			**1.2**			**0.2**		
	Min WM 3		**0.7**			**0.6**			**3.6**			**0.0**			**0.0**			**4.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max WM 3			**26.3**			**11.6**			**27.6**			**0.7**			**6.1**			**28.2**			**1.3**			**2.9**			**4.4**			**1.0**
GRADE: COM																															
1	Region 15	30.4	30.4	30.4	1.5	1.5	1.5	31.9	31.9	31.9	0.0	0.0	0.0	0.0	0.0	0.0	31.9	31.9	31.9	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.7	6.7	0.0	0.0	0.0
1	Region 21	19.4	19.4	19.4	10.5	10.5	10.5	29.9	29.9	29.9	0.3	0.3	0.3	1.8	1.8	1.8	32.0	32.0	32.0	0.0	0.0	0.0	0.8	0.8	0.8	1.1	1.1	1.1	0.4	0.4	0.4
1	Region 26	34.9	34.9	34.9	2.7	2.7	2.7	37.7	37.7	37.7	0.7	0.7	0.7	0.5	0.5	0.5	38.8	38.8	38.8	0.0	0.0	0.0	2.0	2.0	2.0	1.7	1.7	1.7	0.4	0.4	0.4
1	Region 33	1.4	1.4	1.4	1.6	1.6	1.6	2.9	2.9	2.9	0.1	0.1	0.1	13.5	13.5	13.5	16.6	16.6	16.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	**Ave COM**	**21.5**			**4.1**			**25.6**			**0.3**			**4.0**			**29.8**			**0.0**			**0.7**			**2.4**			**0.2**		
	Min COM		**1.4**			**1.5**			**2.9**			**0.0**			**0.0**			**16.6**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max COM			**34.9**			**10.5**			**37.7**			**0.7**			**13.5**			**38.8**			**0.0**			**2.0**			**6.7**			**0.4**
563	**Ave white maize**	**2.9**			**2.0**			**4.9**			**0.1**			**0.2**			**5.3**			**0.0**			**0.2**			**0.2**			**0.0**		
	Min white maize		**0.1**			**0.1**			**0.3**			**0.0**			**0.0**			**0.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max white maize			**34.9**			**11.6**			**37.7**			**0.7**			**13.5**			**38.8**			**1.3**			**2.9**			**6.7**			**1.0**
900	**Ave maize**	**2.9**			**2.2**			**5.1**			**0.2**			**0.2**			**5.4**			**0.0**			**0.2**			**0.2**			**0.0**		
	Min maize		**0.0**			**0.1**			**0.3**			**0.0**			**0.0**			**0.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**67.7**			**17.3**			**69.4**			**1.9**			**13.5**			**70.0**			**2.5**			**2.9**			**6.7**			**1.0**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2006/2007)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Another 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																														
11	Region 10	1.9	1.2	2.3	1.4	1.2	1.9	3.3	2.5	3.9	0.1	0.1	0.2	0.0	0.0	0.0	3.4	2.6	4.1	0.0	0.0	0.0	0.3	0.0	0.4	0.6	0.0	0.9	0.1	0.0	0.4
25	Region 11	1.0	0.2	2.1	1.7	0.6	2.9	2.8	1.7	3.7	0.1	0.0	0.2	0.1	0.0	1.4	2.9	1.7	3.8	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	0.6	0.0	0.0	0.2
5	Region 12	3.4	0.8	5.6	1.9	0.8	2.6	5.3	1.6	8.0	0.1	0.1	0.2	0.0	0.0	0.0	5.5	1.7	8.1	0.0	0.0	0.0	0.1	0.0	0.5	0.3	0.0	0.9	0.0	0.0	0.0
5	Region 13	2.6	1.2	4.3	2.1	1.2	3.4	4.8	2.8	7.3	0.1	0.1	0.2	0.1	0.0	0.6	5.0	3.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Region 14	2.1	0.9	4.5	1.3	0.3	3.2	3.4	1.3	6.8	0.1	0.0	0.2	0.1	0.0	0.7	3.6	1.3	6.9	0.0	0.0	0.4	0.2	0.0	0.6	0.2	0.0	1.2	0.0	0.0	0.2
9	Region 15	1.3	0.8	3.7	1.9	1.6	2.5	3.2	2.6	5.3	0.1	0.0	0.2	0.0	0.0	0.2	3.3	2.7	5.3	0.2	0.0	2.1	0.1	0.0	0.3	0.1	0.0	0.4	0.1	0.0	0.3
2	Region 16	5.6	5.2	5.9	1.4	1.2	1.5	7.0	6.7	7.2	0.2	0.2	0.3	0.3	0.2	0.5	7.5	7.2	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Region 17	2.6	0.6	4.7	1.6	0.5	3.0	4.2	1.0	5.7	0.1	0.0	0.1	0.2	0.0	0.5	4.5	1.5	6.3	0.0	0.0	0.0	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
10	Region 18	1.6	0.9	4.0	1.9	0.9	3.5	3.5	2.0	7.5	0.1	0.0	0.3	0.1	0.0	0.5	3.7	2.0	8.1	0.4	0.0	2.5	0.1	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0
5	Region 19	3.3	1.4	5.1	2.3	1.2	3.4	5.6	2.7	7.6	0.1	0.1	0.1	0.2	0.0	0.6	6.0	2.9	8.3	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.4	0.0	0.0	0.0
6	Region 20	2.6	1.1	4.3	2.2	1.8	3.1	4.7	2.9	6.1	0.1	0.1	0.2	0.2	0.0	0.6	5.1	3.1	6.3	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.2
2	Region 21	0.9	0.8	0.9	2.6	2.5	2.8	3.5	3.3	3.7	0.2	0.1	0.2	0.4	0.0	0.9	4.1	3.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Region 22	0.7	0.4	1.2	1.6	1.0	2.8	2.4	1.7	3.3	0.1	0.0	0.2	0.3	0.0	0.7	2.8	1.7	3.9	0.0	0.0	0.0	0.2	0.0	0.5	0.1	0.0	0.5	0.0	0.0	0.2
9	Region 23	0.9	0.2	1.7	2.3	1.6	2.9	3.2	1.9	4.6	0.1	0.0	0.2	0.2	0.0	0.7	3.5	2.1	4.7	0.0	0.0	0.2	0.1	0.0	0.4	0.1	0.0	0.4	0.0	0.0	0.2
12	Region 24	1.2	0.4	2.4	2.2	1.0	3.8	3.4	1.8	4.3	0.1	0.0	0.3	0.2	0.0	1.0	3.7	1.9	5.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	0.0
12	Region 25	1.6	0.6	4.1	2.6	0.2	4.0	4.2	2.3	6.9	0.2	0.0	0.2	0.1	0.0	1.1	4.5	3.4	7.1	0.0	0.0	0.0	0.2	0.0	0.5	0.3	0.0	0.7	0.0	0.0	0.2
10	Region 26	1.6	0.0	3.8	2.3	0.9	3.4	3.9	0.9	5.5	0.1	0.0	0.2	0.0	0.0	0.2	4.0	0.9	5.5	0.2	0.0	1.2	0.1	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.3
4	Region 27	1.5	0.3	2.8	2.5	1.8	3.7	4.0	2.1	5.1	0.1	0.0	0.3	0.1	0.0	0.5	4.2	2.2	5.9	0.0	0.0	0.1	0.2	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
19	Region 28	2.0	0.7	3.4	2.0	0.6	3.8	4.0	1.3	6.6	0.1	0.1	0.2	0.1	0.0	0.4	4.2	1.4	6.8	0.1	0.0	2.3	0.2	0.0	0.8	0.1	0.0	0.4	0.1	0.0	0.4
16	Region 29	1.6	0.8	5.4	2.1	0.9	4.0	3.7	2.3	8.0	0.2	0.1	0.3	0.1	0.0	0.4	3.9	2.5	8.3	0.0	0.0	0.7	0.2	0.0	1.4	0.1	0.0	0.8	0.1	0.0	0.4
20	Region 30	1.6	0.4	4.1	1.8	0.4	3.6	3.3	1.0	5.5	0.1	0.0	0.3	0.3	0.0	1.0	3.8	1.4	5.8	0.0	0.0	0.0	0.2	0.0	0.7	0.1	0.0	0.5	0.1	0.0	0.3
9	Region 31	1.7	0.6	3.4	1.9	0.5	3.3	3.6	1.8	5.2	0.1	0.0	0.1	0.0	0.0	0.0	3.7	2.0	5.2	0.1	0.0	0.6	0.1	0.0	0.3	0.1	0.0	0.7	0.1	0.0	0.3
12	Region 32	1.3	0.7	1.7	1.2	0.4	3.0	2.5	1.3	4.3	0.1	0.0	0.3	0.1	0.0	0.4	2.7	1.3	4.8	0.1	0.0	1.1	0.1	0.0	0.4	0.1	0.0	0.3	0.0	0.0	0.2
16	Region 33	1.8	0.5	3.9	1.9	0.6	3.5	3.6	1.7	7.4	0.1	0.0	0.3	0.2	0.0	0.7	4.0	2.0	7.9	0.0	0.0	0.7	0.2	0.0	0.8	0.2	0.0	0.5	0.1	0.0	0.3
5	Region 34	1.3	0.9	2.2	2.1	1.0	3.3	3.4	2.1	5.2	0.1	0.0	0.2	0.2	0.0	0.6	3.7	2.3	5.2	0.4	0.0	1.3	0.1	0.0	0.3	0.1	0.0	0.4	0.0	0.0	0.0
8	Region 35	1.7	0.9	2.9	1.4	0.9	2.1	3.1	2.3	4.8	0.1	0.0	0.2	0.0	0.0	0.4	3.3	2.3	5.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.5	0.1	0.0	0.4
4	Region 36	1.2	0.8	1.5	3.2	2.4	3.7	4.4	3.8	4.6	0.1	0.0	0.1	0.1	0.0	0.2	4.5	4.0	4.8	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
262	**Ave YM 1**	**1.7**			**1.9**			**3.6**			**0.1**			**0.1**			**3.8**			**0.1**			**0.1**			**0.1**			**0.0**		
	Min YM 1		**0.0**			**0.2**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM 1			**5.9**			**4.0**			**8.0**			**0.3**			**1.4**			**8.3**			**2.5**			**1.4**			**1.2**			**0.4**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2006/2007) (continue)

Number of samples	Region	% Defective Kernels						% Total defective			% Foreign matter			% Another 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																														
2	Region 12	7.6	7.0	8.1	4.2	1.2	7.1	11.7	8.2	15.2	0.2	0.2	0.2	2.7	1.8	3.6	14.6	10.2	19.0	0.0	0.0	0.0	0.4	0.0	0.8	0.2	0.0	0.4	0.1	0.0	0.2
2	Region 13	5.3	2.0	8.6	4.7	1.5	7.9	9.9	9.9	10.0	0.2	0.2	0.2	0.2	0.0	0.4	10.3	10.1	10.6	0.0	0.0	0.0	0.3	0.0	0.5	0.7	0.0	1.4	0.0	0.0	0.0
1	Region 14	7.4	7.4	7.4	2.6	2.6	2.6	10.0	10.0	10.0	0.2	0.2	0.2	0.0	0.0	0.0	10.2	10.2	10.2	0.0	0.0	0.0	1.3	1.3	1.3	0.4	0.4	0.4	0.0	0.0	0.0
2	Region 16	5.5	2.7	8.2	3.0	2.4	3.6	8.4	5.1	11.8	0.1	0.1	0.1	2.2	0.0	4.4	10.8	9.6	11.9	0.0	0.0	0.0	1.0	0.4	1.6	0.9	0.4	1.4	0.5	0.3	0.7
2	Region 17	7.2	5.5	8.9	2.0	1.1	3.0	9.2	8.5	10.0	0.2	0.1	0.2	0.7	0.0	1.4	10.1	10.0	10.1	0.0	0.0	0.0	0.5	0.5	0.5	0.2	0.0	0.4	0.0	0.0	0.0
1	Region 18	4.4	4.4	4.4	4.2	4.2	4.2	8.6	8.6	8.6	0.2	0.2	0.2	0.0	0.0	0.0	8.8	8.8	8.8	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Region 19	3.2	1.0	4.8	6.4	5.2	7.8	9.5	7.0	11.2	0.2	0.2	0.3	0.1	0.0	0.4	9.8	7.2	11.9	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
2	Region 20	3.5	3.0	4.1	5.4	4.9	5.9	8.9	7.8	10.0	0.2	0.1	0.2	1.2	0.4	2.1	10.3	10.0	10.6	0.0	0.0	0.0	0.6	0.4	0.7	0.7	0.5	0.9	0.4	0.3	0.6
3	Region 21	3.0	1.1	4.3	4.6	2.1	5.9	7.6	6.4	9.3	0.1	0.0	0.2	0.8	0.0	2.2	8.6	7.2	9.9	0.0	0.0	0.0	0.2	0.0	0.5	0.2	0.0	0.6	0.0	0.0	0.0
1	Region 22	4.4	4.4	4.4	3.3	3.3	3.3	7.7	7.7	7.7	0.2	0.2	0.2	3.2	3.2	3.2	11.2	11.2	11.2	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 23	1.1	1.1	1.1	2.4	2.4	3.4	3.6	3.6	3.6	0.4	0.4	0.4	0.1	0.1	0.1	4.2	4.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Region 24	5.1	1.8	8.5	2.8	1.4	4.1	7.9	5.9	9.9	0.2	0.1	0.3	0.4	0.2	0.6	8.5	6.8	10.2	0.0	0.0	0.0	0.1	0.0	0.3	0.2	0.0	0.4	0.0	0.0	0.0
5	Region 25	2.0	0.7	4.8	5.2	4.6	5.7	7.1	6.0	10.0	0.2	0.1	0.2	0.0	0.0	0.0	7.3	6.2	10.1	0.0	0.0	0.0	0.2	0.0	0.7	0.4	0.0	1.4	0.1	0.0	0.5
1	Region 26	6.0	6.0	6.0	2.9	2.9	2.9	8.9	8.9	8.9	0.0	0.0	0.0	0.4	0.4	0.4	9.3	9.3	9.3	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.0	0.0	0.0
1	Region 27	1.8	1.8	1.8	4.1	4.1	4.1	5.9	5.9	5.9	0.3	0.3	0.3	0.9	0.9	0.9	7.1	7.1	7.1	0.0	0.0	0.0	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.0
5	Region 28	1.7	0.7	3.2	5.0	4.4	6.2	6.7	5.1	9.0	0.2	0.1	0.3	0.2	0.0	0.7	7.1	5.3	9.2	0.0	0.0	0.0	0.3	0.0	0.5	0.0	0.0	0.2	0.1	0.0	0.2
2	Region 29	1.6	1.0	2.2	4.9	4.6	5.2	6.5	6.2	6.8	0.2	0.2	0.2	0.0	0.0	0.0	6.7	6.4	6.9	0.0	0.0	0.0	0.2	0.0	0.3	0.3	0.3	0.3	0.0	0.0	0.0
5	Region 30	2.2	0.5	6.2	5.9	2.7	8.6	8.1	6.0	10.6	0.2	0.1	0.3	0.1	0.0	0.3	8.4	6.2	10.9	0.0	0.0	0.0	0.2	0.0	0.7	0.1	0.0	0.4	0.1	0.0	0.4
5	Region 31	6.2	5.4	7.3	3.5	2.7	4.0	9.8	9.4	10.0	0.2	0.2	0.3	0.2	0.0	0.4	10.2	9.8	10.5	0.0	0.0	0.0	0.8	0.3	1.2	0.4	0.2	0.7	0.0	0.0	0.2
4	Region 32	5.3	3.6	7.2	4.0	2.7	5.4	9.3	8.9	9.9	0.2	0.1	0.3	0.2	0.0	0.4	9.8	9.5	10.0	0.0	0.0	0.0	0.8	0.5	1.1	0.6	0.3	1.2	0.1	0.0	0.3
3	Region 33	2.1	1.4	2.9	7.4	5.1	9.1	9.5	7.2	10.9	0.2	0.1	0.3	0.0	0.0	0.0	9.7	7.5	11.0	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.0	0.4	0.1	0.0	0.2
6	Region 34	3.3	0.8	5.8	5.2	3.1	7.7	8.5	7.3	9.6	0.2	0.0	0.4	0.2	0.0	0.5	8.9	7.4	10.2	0.0	0.0	0.2	0.5	0.0	1.6	0.3	0.0	0.9	0.1	0.0	0.4
60	**Ave YM 2**	**3.8**			**4.7**			**8.4**			**0.2**			**0.4**			**9.1**			**0.0**			**0.4**			**0.3**			**0.1**		
	Min YM 2		**0.5**			**1.1**			**3.6**			**0.0**			**0.0**			**4.2**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM 2			**8.9**			**9.1**			**15.2**			**0.4**			**4.4**			**19.0**			**0.4**			**1.6**			**1.4**			**0.7**

TABLE 3: RSA GRADING OF YELLOW MAIZE (2006/2007) (continue)

Number of samples	Region	% Defective Kernels						%			%			%			%			%			%			%			%		
		Above 6.35 mm sieve			Below 6.35 mm sieve			Total defective			Foreign matter			Another Colour			Total Deviation			Pinked Kernels			Diplodia Kernels			Fusarium Kernels			Cobrot Kernels		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 3																															
1	Region 12	16.9	16.9	16.9	2.7	2.7	2.7	19.6	19.6	19.6	0.2	0.2	0.2	1.2	1.2	1.2	21.0	21.0	21.0	0.0	0.0	0.0	0.9	0.9	0.9	1.7	1.7	1.7	0.4	0.4	0.4
1	Region 13	3.2	3.2	3.2	11.3	11.3	11.3	14.4	14.4	14.4	0.2	0.2	0.2	0.0	0.0	0.0	14.6	14.6	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Region 17	20.4	18.9	21.9	2.7	2.6	2.9	23.1	21.7	24.5	0.3	0.3	0.3	0.9	0.6	1.1	24.3	23.1	25.4	0.2	0.0	0.4	1.0	0.0	2.1	0.2	0.0	0.3	0.0	0.0	0.0
1	Region 19	3.7	3.7	3.7	14.5	14.5	14.5	18.2	18.2	18.2	0.1	0.1	0.1	0.4	0.4	0.4	18.7	18.7	18.7	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 23	1.3	1.3	1.3	4.7	4.7	4.7	6.0	6.0	6.0	0.6	0.6	0.6	4.6	4.6	4.6	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0
1	Region 35	1.0	1.0	1.0	17.3	17.3	17.3	18.4	18.4	18.4	0.1	0.1	0.1	0.0	0.0	0.0	18.5	18.5	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	**Ave YM 3**	**9.6**			**8.0**			**17.5**			**0.3**			**1.1**			**18.9**			**0.1**			**0.4**			**0.3**			**0.1**		
	Min YM 3		**1.0**			**2.6**			**6.0**			**0.1**			**0.0**			**11.2**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max YM 3			**21.9**			**17.3**			**24.5**			**0.6**			**4.6**			**25.4**			**0.4**			**2.1**			**1.7**			**0.4**
GRADE: COM																															
3	Region 14	11.4	1.0	21.5	2.8	1.1	4.6	14.2	2.0	26.0	0.9	0.8	1.1	0.8	0.0	1.3	15.9	4.0	28.4	0.0	0.0	0.0	1.2	0.0	2.2	1.9	0.0	4.0	0.0	0.0	0.0
1	Region 15	29.0	29.0	29.0	7.0	7.0	7.0	36.0	36.0	36.0	0.0	0.0	0.0	0.4	0.4	0.4	36.5	36.5	36.5	0.0	0.0	0.0	1.5	1.5	1.5	3.6	3.6	3.6	0.0	0.0	0.0
2	Region 16	66.0	64.2	67.7	1.4	1.2	1.7	67.4	65.4	69.4	0.1	0.0	0.3	0.3	0.3	0.3	67.8	65.7	70.0	0.7	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 25	2.1	2.1	2.1	3.5	3.5	3.5	5.6	5.6	5.6	1.1	1.1	1.1	0.2	0.2	0.2	6.9	6.9	6.9	0.0	0.0	0.0	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2
1	Region 30	0.4	0.4	0.4	0.9	0.9	0.9	1.3	1.3	1.3	1.9	1.9	1.9	0.0	0.0	0.0	3.2	3.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	**Ave COM**	**24.7**			**2.9**			**27.5**			**0.8**			**0.4**			**28.8**			**0.2**			**0.7**			**1.2**			**0.0**		
	Min COM		**0.4**			**0.9**			**1.3**			**0.0**			**0.0**			**3.2**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max COM			**67.7**			**7.0**			**69.4**			**1.9**			**1.3**			**70.0**			**1.3**			**2.2**			**4.0**			**0.2**
337	**Ave yellow maize**	**2.8**			**2.5**			**5.3**			**0.2**			**0.2**			**5.7**			**0.1**			**0.2**			**0.2**			**0.0**		
	Min yellow maize		**0.0**			**0.2**			**0.9**			**0.0**			**0.0**			**0.9**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max yellow maize			**67.7**			**17.3**			**69.4**			**1.9**			**4.6**			**70.0**			**2.5**			**2.2**			**4.0**			**0.7**
900	**Ave maize**	**2.9**			**2.2**			**5.1**			**0.2**			**0.2**			**5.4**			**0.0**			**0.2**			**0.2**			**0.0**		
	Min maize		**0.0**			**0.1**			**0.3**			**0.0**			**0.0**			**0.4**			**0.0**			**0.0**			**0.0**			**0.0**	
	Max maize			**67.7**			**17.3**			**69.4**			**1.9**			**13.5**			**70.0**			**2.5**			**2.9**			**6.7**			**1.0**

COM: Class Other Maize

TABLE 4: GRADING QUALITY OF SOUTH AFRICAN WHITE MAIZE 1997/98 - 2006/07

Season	Number of samples	RSA GRADING AVERAGES				
		% Defective kernels		% Foreign matter	% Other colour	% Total deviation
		Above 6.35 mm sieve	Below 6.35 mm sieve			
1997/98	470	5.9	1.8	0.1	0.4	8.1
1998/99	256	3.4	2.0	0.1	0.2	5.6
1999/00	493	6.0	1.7	0.0	0.4	8.1
2000/01	522	3.6	1.5	0.1	0.3	5.5
2001/02	471	5.0	1.4	0.0	0.3	6.7
2002/03	517	2.4	1.6	0.1	0.4	4.5
2003/04	599	4.0	2.1	0.3	0.3	6.7
2004/05	601	3.5	1.9	0.2	0.3	5.9
2005/06	593	6.0	1.8	0.2	0.3	8.3
2006/07	563	2.9	2.0	0.1	0.2	5.3
Weighted average		4.3	1.8	0.1	0.3	6.5

TABLE 5: GRADING QUALITY OF SOUTH AFRICAN YELLOW MAIZE 1997/98 - 2006/07

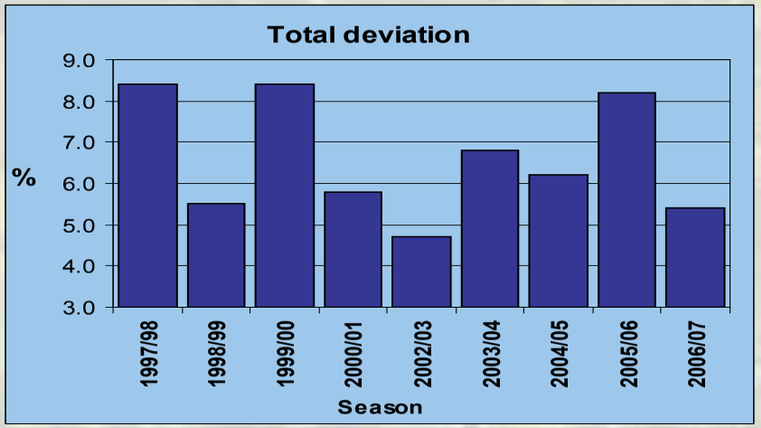
Season	Number of samples	RSA GRADING AVERAGES				
		% Defective kernels		% Foreign matter	% Other colour	% Total deviation
		Above 6.35 mm sieve	Below 6.35 mm sieve			
1997/98	267	6.0	2.4	0.1	0.4	8.9
1998/99	189	2.6	2.7	0.0	0.1	5.5
1999/00	407	6.5	2.1	0.0	0.2	8.8
2000/01	378	3.7	2.1	0.1	0.4	6.2
2001/02	429	6.3	1.9	0.1	0.3	8.6
2002/03	383	2.1	2.5	0.2	0.2	5.0
2003/04	301	4.3	2.3	0.3	0.2	7.0
2004/05	399	4.0	2.3	0.2	0.1	6.6
2005/06	307	5.5	2.0	0.2	0.4	8.1
2006/07	337	2.8	2.5	0.2	0.2	5.7
Weighted average		4.5	2.4	0.1	0.3	7.1

TABLE 6: GRADING QUALITY OF SOUTH AFRICAN MAIZE 1997/98 - 2006/07

Season	Number of samples	RSA GRADING AVERAGES				
		% Defective kernels		%	%	%
		Above 6.35 mm sieve	Below 6.35 mm sieve	Foreign matter	Other colour	Total deviation
1997/98	737	5.9	2.0	0.1	0.4	8.4
1998/99	445	3.1	2.3	0.0	0.1	5.5
1999/00	900	6.2	1.8	0.0	0.3	8.4
2000/01	900	3.6	1.8	0.1	0.3	5.8
2001/02	900	5.6	1.6	0.1	0.3	7.6
2002/03	900	2.3	2.0	0.2	0.3	4.7
2003/04	900	4.1	2.2	0.3	0.3	6.8
2004/05	1000	3.7	2.1	0.2	0.2	6.2
2005/06	900	5.9	1.9	0.2	0.3	8.2
2006/07	900	2.9	2.2	0.2	0.2	5.4
Weighted average		4.4	2.0	0.1	0.3	6.7

TABLE 7: HECTOLITRE MASS (kg/hl) OF SOUTH AFRICAN MAIZE 1997/98 - 2006/07

Season	White maize		Yellow maize		Ave maize	
	Number of samples	Hectolitre mass kg/hl	Number of samples	Hectolitre mass kg/hl	Number of samples	Hectolitre mass kg/hl
1997/98	470	76.6	267	76.0	737	76.4
1998/99	256	75.2	189	74.8	445	75.0
1999/00	493	74.8	407	74.6	900	74.7
2000/01	522	78.2	378	77.8	900	78.0
2001/02	471	77.3	429	76.7	900	77.0
2002/03	517	78.1	383	77.2	900	77.7
2003/04	599	78.1	301	77.0	900	77.8
2004/05	601	77.9	399	76.8	1000	77.5
2005/06	593	76.2	307	75.4	900	75.9
2006/07	563	78.1	337	76.4	900	77.5
Weighted average		77.2		76.4		76.9



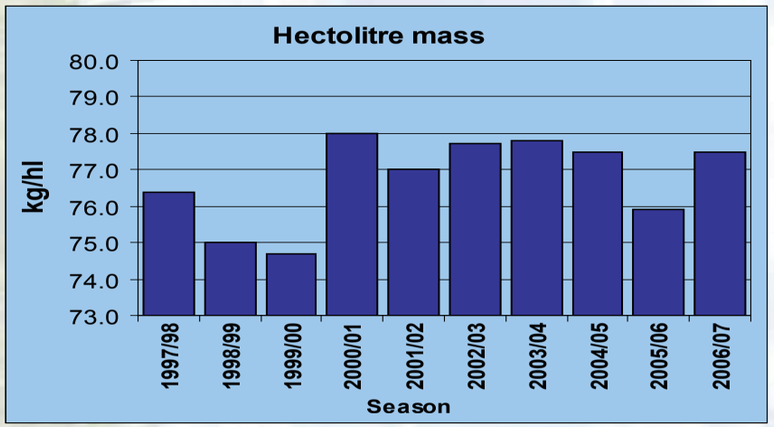


TABLE 8: USA GRADING OF WHITE MAIZE (2006/07)

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																
9	Region 11	0.0	0.0	0.0	1.2	0.3	2.4	0.3	0.1	0.8	81.5	80.1	82.8	0.3	0.0	1.0
5	Region 12	0.0	0.0	0.0	1.8	0.6	2.9	0.6	0.1	0.8	79.5	76.1	82.5	0.0	0.0	0.0
4	Region 13	0.0	0.0	0.0	2.0	0.9	2.8	1.0	0.3	1.8	77.6	75.2	78.8	0.6	0.0	2.2
26	Region 14	0.0	0.0	0.0	1.2	0.5	3.0	0.4	0.0	0.8	79.6	77.4	81.9	0.1	0.0	0.4
26	Region 15	0.0	0.0	0.0	1.3	0.5	2.4	0.6	0.3	1.0	80.4	76.6	81.6	0.1	0.0	0.4
9	Region 16	0.0	0.0	0.0	1.2	0.1	1.8	0.7	0.0	1.6	78.5	74.8	80.7	0.2	0.0	1.5
7	Region 17	0.0	0.0	0.0	2.3	1.1	2.9	0.5	0.0	1.2	78.5	77.0	81.0	0.1	0.0	0.2
17	Region 18	0.0	0.0	0.0	1.8	0.3	2.8	0.7	0.1	1.4	78.2	77.2	79.6	0.1	0.0	0.5
7	Region 19	0.0	0.0	0.0	1.9	1.2	3.0	0.9	0.7	1.9	77.8	75.9	79.6	0.1	0.0	0.4
6	Region 20	0.0	0.0	0.0	1.5	0.9	2.9	0.6	0.4	0.8	77.3	73.9	79.7	0.2	0.0	0.4
14	Region 21	0.0	0.0	0.0	1.5	0.4	2.7	0.6	0.1	1.4	77.9	75.8	79.6	0.1	0.0	0.4
24	Region 22	0.0	0.0	0.0	1.5	0.7	3.0	0.4	0.1	1.3	78.8	77.9	79.8	0.0	0.0	0.2
87	Region 23	0.0	0.0	0.0	1.6	0.3	3.0	0.5	0.0	1.2	79.0	73.4	81.1	0.1	0.0	0.7
29	Region 24	0.0	0.0	0.0	1.4	0.8	2.8	0.7	0.2	1.7	78.3	76.5	81.7	0.1	0.0	0.4
14	Region 25	0.0	0.0	0.0	1.3	0.5	2.4	0.6	0.4	0.9	78.5	76.8	82.5	0.1	0.0	0.4
7	Region 26	0.0	0.0	0.0	1.5	0.9	2.6	0.5	0.2	0.9	78.6	74.8	80.6	0.4	0.0	0.9
6	Region 27	0.0	0.0	0.0	1.2	0.7	2.5	0.7	0.3	1.6	78.0	77.2	78.5	0.4	0.0	0.7
14	Region 28	0.0	0.0	0.0	1.7	0.9	2.7	0.7	0.1	1.2	78.7	77.1	81.0	0.3	0.0	1.0
15	Region 29	0.0	0.0	0.0	1.1	0.6	1.9	0.6	0.3	0.9	78.8	76.3	81.0	0.1	0.0	0.6
19	Region 30	0.0	0.0	0.0	1.7	0.2	3.0	0.7	0.1	1.4	77.0	74.8	79.4	0.2	0.0	0.8
6	Region 31	0.0	0.0	0.0	1.5	1.2	2.0	0.4	0.1	0.7	79.2	76.6	81.1	0.1	0.0	0.3
20	Region 32	0.0	0.0	0.0	1.3	0.3	2.9	0.6	0.0	0.9	77.2	75.4	79.4	0.1	0.0	0.4
16	Region 33	0.0	0.0	0.0	1.8	0.5	3.0	0.7	0.0	1.5	76.0	72.3	79.0	0.1	0.0	0.5
23	Region 34	0.0	0.0	0.0	1.5	0.8	2.5	0.7	0.2	2.0	76.6	72.3	79.0	0.1	0.0	0.4
10	Region 35	0.0	0.0	0.0	1.5	0.5	2.8	0.9	0.5	1.2	79.1	76.1	81.9	0.1	0.0	0.4
6	Region 36	0.0	0.0	0.0	1.2	0.5	1.8	0.4	0.2	0.9	78.6	77.8	79.0	0.0	0.0	0.1
426	**Ave US 1**	**0.0**			**1.5**			**0.6**			**78.5**			**0.1**		
	Min US 1		**0.0**			**0.1**			**0.0**			**72.3**			**0.0**	
	Max US 1			**0.0**			**3.0**			**2.0**			**82.8**			**2.2**
GRADE: US 2																
1	Region 8	0.0	0.0	0.0	1.6	1.6	1.6	2.4	2.4	2.4	80.1	80.1	80.1	0.0	0.0	0.0
1	Region 10	0.0	0.0	0.0	5.0	5.0	5.0	0.7	0.7	0.7	80.6	80.6	80.6	0.0	0.0	0.0
1	Region 12	0.0	0.0	0.0	3.1	3.1	3.1	0.4	0.4	0.4	79.0	79.0	79.0	0.1	0.1	0.1
2	Region 13	0.0	0.0	0.0	3.9	3.7	4.1	0.6	0.3	0.9	79.2	78.5	79.9	0.5	0.0	1.0
2	Region 14	0.0	0.0	0.0	3.3	3.3	3.3	0.4	0.3	0.6	80.2	79.7	80.6	0.0	0.0	0.0
1	Region 15	0.0	0.0	0.0	3.3	3.3	3.3	0.2	0.2	0.2	79.6	79.6	79.6	0.3	0.3	0.3
2	Region 16	0.0	0.0	0.0	2.0	0.6	3.5	1.7	1.0	2.5	78.3	77.2	79.3	0.0	0.0	0.0
1	Region 17	0.0	0.0	0.0	3.8	3.8	3.8	1.7	1.7	1.7	79.9	79.9	79.9	0.3	0.3	0.3
1	Region 19	0.0	0.0	0.0	3.4	3.4	3.4	0.6	0.6	0.6	77.8	77.8	77.8	0.0	0.0	0.0
2	Region 20	0.0	0.0	0.0	4.3	4.0	4.6	0.7	0.4	0.9	78.5	77.6	79.4	0.4	0.3	0.5
2	Region 21	0.0	0.0	0.0	4.1	3.3	4.9	0.8	0.8	0.8	77.6	77.2	78.0	0.5	0.3	0.6
8	Region 22	0.0	0.0	0.0	3.5	0.8	4.9	0.7	0.2	2.2	77.8	75.9	79.0	0.0	0.0	0.2
6	Region 23	0.0	0.0	0.0	3.7	2.6	5.0	1.1	0.4	3.0	78.6	77.5	80.5	0.1	0.0	0.5
2	Region 24	0.0	0.0	0.0	4.1	3.5	4.6	0.3	0.1	0.5	78.5	78.1	78.8	0.1	0.0	0.2
4	Region 25	0.0	0.0	0.0	3.0	0.9	4.2	1.0	0.4	2.2	77.9	77.5	78.3	0.1	0.0	0.2
2	Region 28	0.0	0.0	0.0	3.2	3.1	3.2	0.6	0.4	0.8	77.5	77.4	77.5	0.2	0.0	0.5
1	Region 30	0.0	0.0	0.0	3.6	3.6	3.6	0.4	0.4	0.4	76.2	76.2	76.2	0.2	0.2	0.2
3	Region 33	0.0	0.0	0.0	2.7	1.4	4.2	1.0	0.6	1.2	73.1	69.5	77.9	0.1	0.0	0.2
1	Region 36	0.0	0.0	0.0	3.1	3.1	3.1	1.2	1.2	1.2	77.0	77.0	77.0	0.0	0.0	0.0
43	**Ave US 2**	**0.0**			**3.4**			**0.9**			**78.0**			**0.1**		
	Min US 2		**0.0**			**0.6**			**0.1**			**69.5**			**0.0**	
	Max US 2			**0.0**			**5.0**			**3.0**			**80.6**			**1.0**

TABLE 8: USA GRADING OF WHITE MAIZE (2006/07)

(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																
3	Region 12	0.0	0.0	0.0	5.9	5.1	6.3	0.8	0.5	1.0	79.3	78.8	79.7	0.2	0.0	0.4
1	Region 13	0.0	0.0	0.0	5.4	5.4	5.4	1.0	1.0	1.0	79.0	79.0	79.0	0.0	0.0	0.0
3	Region 14	0.0	0.0	0.0	6.3	5.6	6.9	0.6	0.5	0.7	78.5	78.1	79.0	0.3	0.3	0.4
2	Region 15	0.0	0.0	0.0	5.5	5.3	5.7	0.3	0.1	0.5	76.3	74.4	78.1	0.0	0.0	0.0
4	Region 17	0.0	0.0	0.0	6.2	5.9	6.6	0.7	0.3	1.4	78.8	78.1	79.4	0.0	0.0	0.0
4	Region 19	0.1	0.0	0.5	5.5	5.2	5.9	0.9	0.7	1.1	76.6	75.0	77.5	0.0	0.0	0.2
4	Region 21	0.0	0.0	0.0	5.8	5.4	6.3	0.7	0.5	1.2	76.3	72.9	78.4	0.1	0.0	0.3
4	Region 23	0.0	0.0	0.0	6.2	5.2	6.6	0.4	0.3	0.5	79.0	77.6	80.6	0.0	0.0	0.0
3	Region 24	0.0	0.0	0.0	5.7	5.3	6.3	0.4	0.1	0.7	78.2	77.9	78.5	0.0	0.0	0.1
1	Region 27	0.0	0.0	0.0	5.1	5.1	5.1	0.3	0.3	0.3	78.1	78.1	78.1	0.7	0.7	0.7
1	Region 28	0.0	0.0	0.0	5.4	5.4	5.4	1.3	1.3	1.3	77.6	77.6	77.6	0.8	0.8	0.8
1	Region 31	0.0	0.0	0.0	6.4	6.4	6.4	0.9	0.9	0.9	73.5	73.5	73.5	0.4	0.4	0.4
1	Region 34	0.0	0.0	0.0	5.6	5.6	5.6	1.5	1.5	1.5	75.0	75.0	75.0	0.8	0.8	0.8
32	**Ave US 3**	**0.0**			**5.9**			**0.7**			**77.7**			**0.2**		
	Min US 3		**0.0**			**5.1**			**0.1**			**72.9**			**0.0**	
	Max US 3			**0.5**			**6.9**			**1.5**			**80.6**			**0.8**
GRADE: US 4																
3	Region 12	0.0	0.0	0.0	8.6	8.0	9.7	1.2	1.1	1.3	77.5	76.6	78.8	0.5	0.3	0.9
3	Region 13	0.0	0.0	0.0	8.3	7.5	8.9	0.6	0.4	0.7	76.5	75.0	78.4	0.3	0.0	0.9
3	Region 14	0.0	0.0	0.0	7.9	7.1	9.1	0.3	0.1	0.3	78.0	77.0	79.4	0.2	0.0	0.4
1	Region 15	0.0	0.0	0.0	8.0	8.0	8.0	0.7	0.7	0.7	77.4	77.4	77.4	0.0	0.0	0.0
3	Region 17	0.0	0.0	0.0	8.1	7.7	9.1	0.1	0.1	0.2	78.4	77.4	79.2	0.5	0.4	0.6
3	Region 19	0.0	0.0	0.0	8.1	7.5	8.9	0.9	0.6	1.4	76.4	75.9	76.7	0.6	0.2	1.1
2	Region 21	0.0	0.0	0.0	8.7	8.0	9.5	0.5	0.3	0.6	74.4	73.8	74.9	0.3	0.0	0.7
1	Region 22	0.0	0.0	0.0	9.3	9.3	9.3	1.1	1.1	1.1	75.9	75.9	75.9	0.0	0.0	0.0
1	Region 23	0.0	0.0	0.0	7.1	7.1	7.1	0.5	0.5	0.5	74.3	74.3	74.3	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	9.1	9.1	9.1	1.0	1.0	1.0	74.1	74.1	74.1	0.5	0.5	0.5
1	Region 30	0.0	0.0	0.0	7.4	7.4	7.4	0.5	0.5	0.5	78.1	78.1	78.1	0.0	0.0	0.0
22	**Ave US 4**	**0.0**			**8.2**			**0.6**			**76.8**			**0.3**		
	Min US 4		**0.0**			**7.1**			**0.1**			**73.8**			**0.0**	
	Max US 4			**0.0**			**9.7**			**1.4**			**79.4**			**1.1**
GRADE: US 5																
3	Region 12	0.0	0.0	0.0	12.1	11.8	12.2	1.2	0.8	1.4	77.2	75.6	78.5	0.8	0.2	1.4
3	Region 13	0.0	0.0	0.0	12.7	11.4	14.1	0.7	0.4	1.0	78.6	78.0	79.4	0.3	0.0	0.4
2	Region 14	0.0	0.0	0.0	12.2	10.8	13.7	0.6	0.3	0.9	77.1	75.7	78.5	0.1	0.0	0.2
1	Region 15	0.0	0.0	0.0	14.1	14.1	14.1	0.5	0.5	0.5	79.0	79.0	79.0	0.1	0.1	0.1
2	Region 16	0.0	0.0	0.0	12.9	12.0	13.8	0.1	0.1	0.2	69.9	69.6	70.2	0.0	0.0	0.0
4	Region 17	0.0	0.0	0.0	12.9	11.8	14.2	0.5	0.2	0.8	77.3	76.6	78.3	0.6	0.2	1.1
3	Region 19	0.0	0.0	0.0	12.6	11.6	14.5	1.0	0.8	1.1	74.8	74.3	75.0	0.1	0.0	0.2
1	Region 24	0.0	0.0	0.0	13.3	13.3	13.3	0.5	0.5	0.5	75.9	75.9	75.9	0.6	0.6	0.6
1	Region 34	0.0	0.0	0.0	11.2	11.2	11.2	0.3	0.3	0.3	76.3	76.3	76.3	0.5	0.5	0.5
20	**Ave US 5**	**0.0**			**12.6**			**0.7**			**76.3**			**0.4**		
	Min US 5		**0.0**			**10.8**			**0.1**			**69.6**			**0.0**	
	Max US 5			**0.0**			**14.5**			**1.4**			**79.4**			**1.4**
GRADE: MIXED GRADE																
1	Region 21	0.0	0.0	0.0	1.6	1.6	1.6	1.7	1.7	1.7	75.9	75.9	75.9	2.5	2.5	2.5
1	Region 23	0.0	0.0	0.0	4.5	4.5	4.5	0.3	0.3	0.3	79.4	79.4	79.4	2.5	2.5	2.5
1	Region 32	0.0	0.0	0.0	1.5	1.5	1.5	1.0	1.0	1.0	75.2	75.2	75.2	6.1	6.1	6.1
2	Region 33	0.0	0.0	0.0	1.5	1.5	1.5	1.5	0.6	2.5	74.0	72.3	75.6	8.1	2.7	13.5
5	**Ave Mixed Grade**	**0.0**			**2.1**			**1.2**			**75.7**			**5.5**		
	Min Mixed Grade		**0.0**			**1.5**			**0.3**			**72.3**			**2.5**	
	Max Mixed Grade			**0.0**			**4.5**			**2.5**			**79.4**			**13.5**

TABLE 8: USA GRADING OF WHITE MAIZE (2006/07)
(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: SAMPLE GRADE																
1	Region 12	0.0	0.0	0.0	15.1	15.1	15.1	0.9	0.9	0.9	78.4	78.4	78.4	0.4	0.4	0.4
3	Region 14	0.0	0.0	0.0	17.0	16.9	17.1	0.6	0.6	0.8	74.8	72.9	77.5	0.1	0.0	0.2
3	Region 15	0.0	0.0	0.0	23.9	17.8	30.5	0.7	0.1	1.9	75.7	74.4	76.6	0.8	0.0	2.3
2	Region 16	0.0	0.0	0.0	26.5	25.9	27.1	0.8	0.6	1.0	69.0	68.6	69.4	0.1	0.1	0.2
2	Region 17	0.0	0.0	0.0	16.6	15.7	17.6	0.4	0.3	0.5	76.7	76.1	77.2	0.1	0.0	0.2
1	Region 20	0.0	0.0	0.0	20.9	20.9	20.9	0.8	0.8	0.8	72.3	72.3	72.3	0.6	0.6	0.6
2	Region 21	0.0	0.0	0.0	19.1	18.3	19.9	2.0	0.8	3.2	72.7	72.1	73.2	1.1	0.4	1.8
1	Region 26	0.0	0.0	0.0	36.4	36.4	36.4	1.0	1.0	1.0	68.1	68.1	68.1	0.5	0.5	0.5
15	**Ave Sample Grade**	**0.0**			**21.3**			**0.9**			**73.8**			**0.5**		
	Min Sample Grade		**0.0**			**15.1**			**1.0**			**68.1**			**0.0**	
	Max Sample Grade			**0.0**			**36.4**			**3.2**			**78.4**			**2.3**
563	**Ave white maize**	**0.0**			**3.1**			**0.6**			**78.1**			**0.2**		
	Min white maize		**0.0**			**0.1**			**0.0**			**68.1**			**0.0**	
	Max white maize			**0.5**			**36.4**			**3.2**			**82.8**			**13.5**
900	**Ave maize**	**0.0**			**3.0**			**0.7**			**77.5**			**0.2**		
	Min maize		**0.0**			**0.0**			**0.0**			**68.1**			**0.0**	
	Max maize			**1.0**			**68.6**			**5.2**			**82.8**			**13.5**

TABLE 9: USA GRADING OF YELLOW MAIZE (2006/07)

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																
11	Region 10	0.0	0.0	0.0	2.0	1.3	2.3	0.4	0.3	0.6	78.3	76.5	79.7	0.0	0.0	0.0
25	Region 11	0.0	0.0	0.0	1.2	0.2	2.1	0.5	0.0	0.9	78.8	77.2	79.9	0.1	0.0	1.4
2	Region 12	0.0	0.0	0.0	1.8	0.8	2.8	0.4	0.1	0.7	78.3	77.4	79.2	0.0	0.0	0.0
3	Region 13	0.0	0.0	0.0	1.8	1.3	2.6	0.6	0.4	0.9	77.6	77.0	78.3	0.0	0.0	0.0
14	Region 14	0.0	0.0	0.0	1.8	0.9	3.0	0.4	0.1	1.0	77.9	72.3	80.3	0.2	0.0	1.2
8	Region 15	0.0	0.0	0.0	1.1	0.8	1.5	0.7	0.6	0.9	79.0	77.8	80.1	0.0	0.0	0.2
1	Region 16	0.0	0.0	0.0	2.9	2.9	2.9	1.2	1.2	1.2	74.9	74.9	74.9	4.4	4.4	4.4
3	Region 17	0.0	0.0	0.0	1.3	0.6	2.5	0.5	0.0	0.8	75.4	74.1	76.7	0.2	0.0	0.4
9	Region 18	0.0	0.0	0.0	1.5	0.9	2.1	0.4	0.0	1.3	76.4	75.0	77.2	0.5	0.0	2.6
4	Region 19	0.0	0.0	0.0	1.8	1.2	2.3	0.9	0.2	1.6	75.3	73.0	77.4	0.0	0.0	0.2
4	Region 20	0.0	0.0	0.0	2.0	1.1	2.9	0.6	0.5	0.8	76.6	76.3	77.0	0.2	0.0	0.4
3	Region 21	0.0	0.0	0.0	1.0	0.9	1.1	1.1	0.6	1.8	74.6	72.9	76.3	0.3	0.0	0.9
4	Region 22	0.0	0.0	0.0	0.8	0.5	1.2	0.4	0.0	1.0	76.6	76.2	77.0	0.3	0.0	0.7
11	Region 23	0.0	0.0	0.0	1.2	0.3	2.1	0.6	0.3	1.3	77.1	75.0	79.2	0.6	0.0	4.6
13	Region 24	0.0	0.0	0.0	1.4	0.4	2.5	0.5	0.1	1.1	77.1	74.8	81.2	0.2	0.0	1.0
15	Region 25	0.0	0.0	0.0	1.6	0.7	2.4	1.0	0.0	2.0	76.8	76.3	78.1	0.1	0.0	1.1
9	Region 26	0.0	0.0	0.0	1.5	0.0	2.9	0.7	0.1	1.2	77.8	76.5	79.7	0.0	0.0	0.3
5	Region 27	0.0	0.0	0.0	1.8	0.4	3.0	0.7	0.1	1.3	75.9	75.4	76.5	0.3	0.0	0.9
17	Region 28	0.0	0.0	0.0	1.7	0.7	3.0	0.9	0.1	1.6	77.0	74.7	79.0	0.1	0.0	1.2
16	Region 29	0.0	0.0	0.0	1.4	1.0	2.4	1.0	0.5	1.9	77.1	74.4	78.8	0.1	0.0	0.4
17	Region 30	0.0	0.0	0.0	1.2	0.4	2.9	0.7	0.1	1.4	76.0	72.3	78.1	0.2	0.0	1.0
8	Region 31	0.0	0.0	0.0	1.6	0.6	2.8	0.7	0.2	1.3	76.0	74.4	77.5	0.0	0.0	0.0
12	Region 32	0.0	0.0	0.0	1.4	0.7	1.9	0.4	0.0	1.0	75.8	72.7	79.8	0.1	0.0	0.6
13	Region 33	0.0	0.0	0.0	1.5	0.5	2.8	0.7	0.2	1.5	76.0	73.1	78.1	0.2	0.0	0.7
6	Region 34	0.0	0.0	0.0	1.7	1.2	2.6	0.5	0.3	1.0	74.9	72.5	76.5	0.6	0.0	1.7
9	Region 35	0.0	0.0	0.0	1.5	0.9	1.9	0.7	0.1	1.8	77.9	75.0	80.2	0.0	0.0	0.4
4	Region 36	0.0	0.0	0.0	1.4	0.9	1.6	0.6	0.2	0.8	77.0	76.3	77.6	0.2	0.0	0.3
246	**Ave US 1**	**0.0**			**1.5**			**0.7**			**77.0**			**0.2**		
	Min US 1		**0.0**			**0.0**			**0.0**			**72.3**			**0.0**	
	Max US 1			**0.0**			**3.0**			**2.0**			**81.2**			**4.6**
GRADE: US 2																
2	Region 12	0.0	0.0	0.0	4.1	3.9	4.2	0.8	0.7	1.0	76.6	75.3	77.8	0.0	0.0	0.0
3	Region 13	0.0	0.0	0.0	3.6	2.4	4.4	1.4	0.6	2.7	74.7	72.3	76.1	0.2	0.0	0.6
3	Region 14	0.0	0.0	0.0	3.8	3.1	4.7	0.6	0.5	0.8	77.2	76.2	78.3	0.0	0.0	0.0
1	Region 15	0.0	0.0	0.0	3.8	3.8	3.8	0.3	0.3	0.3	77.1	77.1	77.1	2.1	2.1	2.1
3	Region 17	0.0	0.0	0.0	4.0	3.6	4.8	0.4	0.1	0.9	74.3	71.2	76.2	0.2	0.0	0.5
1	Region 18	0.0	0.0	0.0	4.6	4.6	4.6	0.6	0.6	0.6	75.7	75.7	75.7	0.5	0.5	0.5
4	Region 19	0.0	0.0	0.0	4.2	3.6	5.0	1.1	0.6	1.5	74.7	72.2	77.2	0.2	0.0	0.6
4	Region 20	0.0	0.0	0.0	4.0	3.2	4.5	1.2	0.5	2.0	76.1	74.9	77.1	0.8	0.0	2.1
2	Region 21	0.0	0.0	0.0	4.1	3.7	4.6	1.0	0.5	1.5	74.2	72.6	75.7	1.3	0.3	2.2
1	Region 22	0.0	0.0	0.0	4.5	4.5	4.5	0.9	0.9	0.9	74.7	74.7	74.7	3.2	3.2	3.2
3	Region 25	0.0	0.0	0.0	3.6	1.5	4.9	2.0	0.8	2.7	75.7	74.1	77.1	0.0	0.0	0.0
1	Region 26	0.0	0.0	0.0	4.3	4.3	4.3	0.2	0.2	0.2	77.5	77.5	77.5	0.0	0.0	0.0
7	Region 28	0.0	0.0	0.0	3.1	1.4	3.6	1.4	0.6	2.2	77.7	75.2	80.6	0.1	0.0	0.7
7	Region 30	0.0	0.0	0.0	2.3	0.4	4.2	0.9	0.1	2.6	74.0	70.5	78.4	0.4	0.0	0.6
1	Region 31	0.0	0.0	0.0	3.7	3.7	3.7	0.6	0.6	0.6	74.8	74.8	74.8	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	3.9	3.9	3.9	2.1	2.1	2.1	71.2	71.2	71.2	0.3	0.3	0.3
5	Region 33	0.0	0.0	0.0	3.3	2.2	4.2	1.8	1.0	2.5	72.9	70.2	75.7	0.1	0.0	0.3
2	Region 34	0.0	0.0	0.0	4.1	3.9	4.3	1.3	0.9	1.7	73.4	73.2	73.6	0.4	0.3	0.5
51	**Ave US 2**	**0.0**			**3.5**			**1.1**			**75.2**			**0.4**		
	Min US 2		**0.0**			**0.4**			**0.1**			**70.2**			**0.0**	
	Max US 2			**0.0**			**5.0**			**2.7**			**80.6**			**3.2**

TABLE 9: USA GRADING OF YELLOW MAIZE (2006/07)

(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 12	0.0	0.0	0.0	5.6	5.6	5.6	0.8	0.8	0.8	75.9	75.9	75.9	0.0	0.0	0.0
2	Region 16	0.0	0.0	0.0	5.8	5.4	6.2	0.7	0.6	0.8	75.0	75.0	75.0	0.3	0.2	0.5
1	Region 17	0.0	0.0	0.0	5.6	5.6	5.6	0.8	0.8	0.8	71.7	71.7	71.7	1.4	1.4	1.4
1	Region 18	0.0	0.0	0.0	5.3	5.3	5.3	1.2	1.2	1.2	75.2	75.2	75.2	0.4	0.4	0.4
2	Region 19	0.0	0.0	0.0	5.2	5.1	5.3	1.2	0.6	1.9	73.8	71.1	76.5	0.4	0.4	0.4
1	Region 26	0.0	0.0	0.0	6.7	6.7	6.7	0.4	0.4	0.4	76.8	76.8	76.8	0.5	0.5	0.5
2	Region 29	0.0	0.0	0.0	4.4	3.1	5.6	2.1	1.1	3.1	74.6	74.4	74.8	0.0	0.0	0.0
1	Region 30	0.0	0.0	0.0	6.5	6.5	6.5	1.2	1.2	1.2	73.2	73.2	73.2	0.0	0.0	0.0
4	Region 31	0.0	0.0	0.0	6.2	5.6	6.5	1.4	1.0	1.7	74.3	73.8	75.6	0.2	0.0	0.4
2	Region 32	0.0	0.0	0.0	5.6	5.5	5.7	1.4	1.2	1.6	73.6	73.1	74.1	0.3	0.3	0.4
1	Region 33	0.0	0.0	0.0	1.7	1.7	1.7	3.8	3.8	3.8	72.2	72.2	72.2	0.0	0.0	0.0
3	Region 34	0.0	0.0	0.0	4.4	1.2	6.0	2.4	1.3	4.0	74.5	73.2	75.9	0.1	0.0	0.4
21	**Ave US 3**	**0.0**			**5.3**			**1.5**			**74.3**			**0.3**		
	Min US 3		**0.0**			**1.2**			**0.4**			**71.1**			**0.0**	
	Max US 3			**0.0**			**6.7**			**4.0**			**76.8**			**1.4**
GRADE: US 4																
2	Region 12	0.0	0.0	0.0	7.8	7.2	8.4	1.5	0.5	2.6	74.4	72.9	75.9	2.7	1.8	3.6
1	Region 13	0.0	0.0	0.0	8.7	8.7	8.7	0.7	0.7	0.7	75.6	75.6	75.6	0.4	0.4	0.4
1	Region 14	0.0	0.0	0.0	7.6	7.6	7.6	0.4	0.4	0.4	74.5	74.5	74.5	0.0	0.0	0.0
1	Region 16	0.0	0.0	0.0	8.3	8.3	8.3	1.4	1.4	1.4	75.2	75.2	75.2	0.0	0.0	0.0
1	Region 17	0.0	0.0	0.0	9.0	9.0	9.0	0.4	0.4	0.4	75.0	75.0	75.0	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	8.6	8.6	8.6	0.4	0.4	0.4	75.8	75.8	75.8	0.2	0.2	0.2
1	Region 30	1.0	1.0	1.0	2.1	2.1	2.1	2.2	2.2	2.2	74.8	74.8	74.8	0.0	0.0	0.0
1	Region 31	0.0	0.0	0.0	7.4	7.4	7.4	0.8	0.8	0.8	74.8	74.8	74.8	0.3	0.3	0.3
1	Region 32	0.0	0.0	0.0	7.4	7.4	7.4	0.7	0.7	0.7	72.6	72.6	72.6	0.0	0.0	0.0
10	**Ave US 4**	**0.1**			**7.5**			**1.0**			**74.7**			**0.6**		
	Min US 4		**0.0**			**2.1**			**0.4**			**72.6**			**0.0**	
	Max US 4			**1.0**			**9.0**			**2.6**			**75.9**			**3.6**
GRADE: US 5																
1	Region 13	0.0	0.0	0.0	3.4	3.4	3.4	5.2	5.2	5.2	72.0	72.0	72.0	0.0	0.0	0.0
1	Region 14	0.0	0.0	0.0	12.4	12.4	12.4	1.6	1.6	1.6	73.6	73.6	73.6	0.0	0.0	0.0
2	**Ave US 5**	**0.0**			**7.9**			**3.4**			**72.8**			**0.0**		
	Min US 5		**0.0**			**3.4**			**1.6**			**72.0**			**0.0**	
	Max US 5			**0.0**			**12.4**			**5.2**			**73.6**			**0.0**
GRADE: SAMPLE GRADE																
1	Region 12	0.0	0.0	0.0	17.2	17.2	17.2	1.2	1.2	1.2	72.7	72.7	72.7	1.2	1.2	1.2
1	Region 14	0.0	0.0	0.0	22.1	22.1	22.1	2.1	2.1	2.1	70.8	70.8	70.8	1.3	1.3	1.3
1	Region 15	0.0	0.0	0.0	33.4	33.4	33.4	2.5	2.5	2.5	73.0	73.0	73.0	0.4	0.4	0.4
2	Region 16	0.0	0.0	0.0	66.7	64.8	68.6	0.2	0.1	0.4	71.5	70.9	72.0	0.9	0.3	1.6
2	Region 17	0.0	0.0	0.0	20.7	18.9	22.5	0.7	0.7	0.8	74.4	73.2	75.6	1.1	1.1	1.1
7	**Ave Sample Grade**	**0.0**			**35.4**			**1.1**			**72.6**			**1.0**		
	Min Sample Grade		**0.0**			**17.2**			**0.1**			**70.8**			**0.3**	
	Max Sample Grade			**0.0**			**68.6**			**2.5**			**75.6**			**1.6**
337	**Ave yellow maize**	**0.0**			**2.9**			**0.8**			**76.4**			**0.3**		
	Min yellow maize		**0.0**			**0.0**			**0.0**			**70.2**			**0.0**	
	Max yellow maize			**1.0**			**68.6**			**5.2**			**81.2**			**4.6**
900	**Ave maize**	**0.0**			**3.0**			**0.7**			**77.5**			**0.2**		
	Min maize		**0.0**			**0.0**			**0.0**			**68.1**			**0.0**	
	Max maize			**1.0**			**68.6**			**5.2**			**82.8**			**13.5**

TABLE 10: 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 grading sieve	-	-	-	9	20	30
	below 6,35 mm grading sieve	-	-	-	4	10	30
II	Maize kernels of another colour	3	6	10	2	5	5
III	Foreign matter (excluding stone, pieces of coal or glass and dung)	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	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.

TABLE 11: 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 8 or more stones which have an aggregate weight in excess of 0.20 percent of the sample weight, 2 or more pieces of glass, 3 or more crotalaria seeds (Crotalaria ssp.), 2 or more castor beans (Ricinus communis L.), 4 or more particles of an unknown foreign substance(s) or a commonly reconized harmful or toxic substance(s), 8 or more cockleburs (Xanthium ssp.) or similar seeds singly or in combination, or animal filth in excess of 0.20 ssp.) or similar seeds singly or in combination, or animal filth in excess of 0.20 percent in 1000 grams; or

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

d) Is heating or otherwise of distinctly low quality.

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

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2006/07

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1										
1	Region 8	3.6	3.6	3.6	9.0	9.0	9.0	72.5	72.5	72.5
1	Region 10	3.3	3.3	3.3	8.0	8.0	8.0	74.7	74.7	74.7
9	Region 11	3.7	3.4	4.0	8.7	8.4	9.4	73.6	73.2	74.6
6	Region 12	4.0	3.9	4.1	9.2	7.8	10.1	72.5	72.1	72.9
4	Region 13	3.9	3.8	4.1	9.6	9.3	10.0	73.0	72.4	73.7
28	Region 14	3.9	3.7	4.2	9.2	8.6	10.5	72.4	71.6	73.9
27	Region 15	4.0	3.9	4.2	9.2	8.2	10.2	72.1	70.9	73.5
11	Region 16	3.8	3.3	4.0	9.5	8.9	10.5	72.0	71.5	72.7
7	Region 17	4.0	3.6	4.2	9.6	8.9	10.2	72.7	71.8	73.5
17	Region 18	3.9	3.6	4.1	9.5	9.0	10.0	73.1	72.6	74.0
7	Region 19	4.0	3.8	4.2	9.5	9.0	10.1	72.6	72.1	73.0
6	Region 20	3.9	3.7	4.3	8.9	8.8	9.1	73.1	72.4	73.9
14	Region 21	4.0	3.6	4.2	9.5	8.6	10.1	73.2	72.4	73.8
31	Region 22	4.0	3.8	4.2	9.0	8.4	9.9	73.1	72.4	73.7
89	Region 23	3.9	3.4	4.8	9.0	8.2	9.8	73.1	72.1	74.9
31	Region 24	3.9	3.7	4.3	9.9	9.0	10.5	72.9	71.7	74.2
18	Region 25	3.7	3.5	4.5	9.1	8.1	11.2	73.2	71.6	74.6
7	Region 26	3.9	3.6	4.5	9.4	8.0	11.2	72.7	71.1	74.2
7	Region 27	3.7	3.5	4.0	10.4	9.1	11.1	73.1	72.5	73.7
16	Region 28	3.6	3.4	3.9	9.2	8.3	10.2	73.1	70.8	74.1
15	Region 29	3.5	3.4	3.9	9.0	8.3	10.1	73.6	72.7	74.4
20	Region 30	3.7	3.4	4.0	9.2	8.4	10.2	73.0	71.9	74.3
6	Region 31	3.6	3.4	3.8	9.1	8.5	9.7	73.2	72.3	74.3
20	Region 32	3.6	3.4	3.8	9.2	8.7	9.9	73.6	73.0	74.6
18	Region 33	3.6	3.0	4.0	9.3	8.2	11.8	72.5	71.3	73.5
22	Region 34	3.7	3.4	4.2	9.0	7.8	10.1	73.6	72.3	74.6
10	Region 35	4.0	3.5	4.8	9.4	8.3	11.2	71.8	70.6	73.0
7	Region 36	3.8	3.6	4.0	8.7	8.3	9.3	73.6	72.9	74.4
455	**Ave WM 1**	**3.8**			**9.2**			**73.0**		
	Min WM 1		**3.0**			**7.8**			**70.6**	
	Max WM 1			**4.8**			**11.8**			**74.9**

TABLE 12: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2006/07

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1										
11	Region 10	3.4	3.3	3.6	8.3	8.0	8.9	74.2	73.3	74.9
25	Region 11	3.2	3.1	3.6	8.2	7.6	8.9	74.3	73.8	75.0
5	Region 12	3.8	3.5	4.1	9.7	8.7	10.3	72.5	71.8	73.3
5	Region 13	3.7	3.4	4.0	10.6	10.0	10.9	72.7	72.1	73.5
16	Region 14	3.9	3.1	4.4	9.9	9.0	10.9	72.2	71.2	74.5
9	Region 15	3.6	3.5	3.8	9.0	8.3	10.1	72.9	72.0	73.4
2	Region 16	3.9	3.8	3.9	9.5	9.4	9.6	72.4	72.3	72.5
6	Region 17	3.7	3.4	3.9	10.0	9.6	10.3	73.1	72.4	73.6
10	Region 18	3.6	3.1	3.8	9.7	9.2	10.3	73.4	72.6	74.2
5	Region 19	3.7	3.5	4.0	9.9	9.1	10.4	72.8	72.2	73.3
6	Region 20	3.6	3.1	3.8	9.2	8.5	9.8	73.5	72.9	74.4
2	Region 21	3.7	3.6	3.7	10.1	9.7	10.5	73.6	73.2	73.9
4	Region 22	3.6	3.5	3.8	9.6	9.0	10.4	73.1	72.7	73.4
9	Region 23	3.7	3.4	4.0	9.7	8.0	10.5	73.0	72.3	73.9
12	Region 24	3.6	3.2	4.1	10.1	8.1	12.7	73.3	71.9	74.6
12	Region 25	3.5	3.0	3.7	9.2	8.8	9.7	73.4	72.0	75.2
10	Region 26	3.7	3.3	4.3	10.3	8.8	11.9	72.5	71.2	74.1
4	Region 27	3.7	3.5	3.9	10.5	10.2	10.9	72.9	72.6	73.3
19	Region 28	3.5	3.1	4.2	10.0	8.7	11.2	72.8	70.5	73.7
16	Region 29	3.4	2.8	4.1	9.1	7.2	10.2	73.8	73.1	75.1
20	Region 30	3.4	3.0	3.7	9.6	8.8	10.2	73.1	72.1	74.3
9	Region 31	3.4	3.2	3.6	9.6	9.2	10.0	73.6	73.4	74.0
12	Region 32	3.4	3.1	3.8	9.5	8.4	10.1	73.8	73.4	74.4
16	Region 33	3.4	3.1	3.8	9.1	6.9	10.9	73.0	71.2	74.5
5	Region 34	3.5	3.1	4.0	9.1	7.5	10.0	73.7	71.8	74.9
8	Region 35	3.7	2.8	4.4	9.3	8.2	10.9	72.4	70.8	74.5
4	Region 36	3.5	3.5	3.5	8.5	8.4	8.6	74.3	73.9	74.5
262	**Ave YM 1**	**3.5**			**9.4**			**73.3**		
	Min YM 1		**2.8**			**6.9**			**70.5**	
	Max YM 1			**4.4**			**12.7**			**75.2**

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2006/07 (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										
6	Region 12	4.1	3.9	4.2	9.9	9.7	10.1	72.3	71.8	72.7
6	Region 13	4.0	3.3	4.7	10.0	8.2	12.0	72.3	70.1	74.0
7	Region 14	4.1	3.9	4.2	10.2	9.8	10.4	72.1	71.5	72.5
2	Region 15	3.9	3.8	4.0	9.1	8.5	9.7	72.4	71.2	73.5
1	Region 16	3.8	3.8	3.8	10.6	10.6	10.6	72.2	72.2	72.2
8	Region 17	4.1	3.9	4.4	10.1	9.6	10.9	72.1	71.2	72.7
8	Region 19	4.0	3.8	4.2	10.4	9.5	10.9	72.2	71.4	72.7
1	Region 20	4.1	4.1	4.1	9.7	9.7	9.7	72.6	72.6	72.6
9	Region 21	3.9	3.7	4.2	9.4	8.0	10.6	73.1	72.6	73.7
1	Region 22	4.0	4.0	4.0	9.3	9.3	9.3	73.2	73.2	73.2
8	Region 23	3.9	3.5	4.1	9.2	8.6	9.8	73.1	72.4	74.1
3	Region 24	4.1	4.1	4.2	9.7	8.8	10.2	72.9	72.3	73.4
1	Region 28	3.6	3.6	3.6	9.7	9.7	9.7	73.2	73.2	73.2
1	Region 30	4.0	4.0	4.0	7.5	7.5	7.5	74.2	74.2	74.2
1	Region 31	3.9	3.9	3.9	9.7	9.7	9.7	73.0	73.0	73.0
1	Region 33	3.1	3.1	3.1	10.5	10.5	10.5	72.9	72.9	72.9
2	Region 34	3.5	3.3	3.7	8.9	8.6	9.2	73.7	73.6	73.8
66	**Ave WM 2**	**4.0**			**9.8**			**72.6**		
	Min WM 2		**3.1**			**7.5**			**70.1**	
	Max WM 2			**4.7**			**12.0**			**74.2**

TABLE 12: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2006/07 (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										
2	Region 12	3.5	3.2	3.7	10.4	10.1	10.6	73.3	73.2	73.3
2	Region 13	3.7	3.3	4.1	10.4	10.1	10.7	73.3	71.9	74.6
1	Region 14	4.1	4.1	4.1	10.6	10.6	10.6	71.8	71.8	71.8
2	Region 16	3.7	3.5	3.9	9.0	8.3	9.7	72.3	71.7	72.9
2	Region 17	3.8	3.7	3.8	10.7	10.4	10.9	72.4	71.9	72.9
1	Region 18	3.6	3.6	3.6	9.2	9.2	9.2	73.8	73.8	73.8
4	Region 19	3.8	3.4	4.1	9.9	8.7	10.7	73.0	72.5	74.0
2	Region 20	3.4	3.3	3.5	9.6	9.6	9.6	74.1	73.7	74.5
3	Region 21	3.7	3.4	3.9	9.9	9.1	10.3	73.6	73.4	73.8
1	Region 22	3.8	3.8	3.8	10.1	10.1	10.1	72.8	72.8	72.8
1	Region 23	3.6	3.6	3.6	9.4	9.4	9.4	72.9	72.9	72.9
2	Region 24	3.7	3.6	3.8	10.2	9.5	10.9	73.5	73.4	73.5
5	Region 25	3.6	3.4	4.0	10.5	9.5	11.0	72.9	72.3	73.4
1	Region 26	3.2	3.2	3.2	9.0	9.0	9.0	74.0	74.0	74.0
1	Region 27	3.9	3.9	3.9	11.0	11.0	11.0	72.7	72.7	72.7
5	Region 28	3.3	3.1	3.6	9.7	8.8	11.0	73.4	72.2	74.0
2	Region 29	3.2	3.2	3.2	9.6	9.4	9.7	74.2	74.1	74.3
5	Region 30	3.3	3.2	3.5	9.1	8.8	9.7	74.2	73.6	74.9
5	Region 31	3.3	3.1	3.6	10.0	9.5	10.6	73.8	73.4	74.5
4	Region 32	3.2	3.0	3.4	10.2	9.8	10.7	74.1	73.9	74.2
3	Region 33	3.2	3.1	3.4	10.1	9.9	10.3	72.9	72.4	73.6
6	Region 34	3.4	3.1	3.7	10.0	8.4	10.8	73.7	73.0	74.0
60	**Ave YM 2**	**3.5**			**9.9**			**73.4**		
	Min YM 2		**3.0**			**8.3**			**71.7**	
	Max YM 2			**4.1**			**11.0**			**74.9**

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2006/07 (continue)

Number of samples	Region	% (db) Fat ave.	% (db) Fat min.	% (db) Fat max.	% (db) Protein ave.	% (db) Protein min.	% (db) Protein max.	% (db) Starch ave.	% (db) Starch min.	% (db) Starch max.
GRADE: WM 3										
4	Region 12	4.1	4.0	4.3	10.1	9.4	11.0	71.7	70.8	72.3
3	Region 13	4.3	4.3	4.4	10.4	10.2	10.8	71.7	71.4	71.9
4	Region 14	4.1	3.7	4.5	10.0	8.3	10.8	72.2	70.8	73.5
4	Region 15	3.9	3.3	4.2	9.5	7.8	10.7	72.4	70.8	74.2
3	Region 16	3.8	3.7	3.8	11.5	10.5	12.0	71.8	71.5	72.4
6	Region 17	4.1	3.8	4.4	10.1	9.5	11.2	72.3	71.4	73.3
3	Region 19	4.2	3.8	4.5	10.5	8.5	11.6	71.8	70.9	73.0
2	Region 20	3.9	3.8	3.9	9.6	9.6	9.6	73.2	73.0	73.4
1	Region 21	3.8	3.8	3.8	9.2	9.2	9.2	73.7	73.7	73.7
1	Region 22	4.0	4.0	4.0	9.9	9.9	9.9	72.8	72.8	72.8
2	Region 23	4.2	4.2	4.2	9.4	9.1	9.7	72.4	72.3	72.4
2	Region 24	4.0	3.9	4.0	9.8	9.7	9.9	72.9	72.8	72.9
1	Region 32	3.4	3.4	3.4	9.7	9.7	9.7	73.7	73.7	73.7
1	Region 33	2.9	2.9	2.9	10.5	10.5	10.5	73.0	73.0	73.0
1	Region 34	3.7	3.7	3.7	9.5	9.5	9.5	73.9	73.9	73.9
38	**Ave WM 3**	**4.0**			**10.1**			**72.3**		
	Min WM 3		**2.9**			**7.8**			**70.8**	
	Max WM 3			**4.5**			**12.0**			**74.2**
GRADE: COM										
1	Region 15	4.0	4.0	4.0	10.7	10.7	10.7	72.5	72.5	72.5
1	Region 21	4.0	4.0	4.0	9.4	9.4	9.4	73.4	73.4	73.4
1	Region 26	4.2	4.2	4.2	7.7	7.7	7.7	73.2	73.2	73.2
1	Region 33	3.7	3.7	3.7	7.9	7.9	7.9	73.1	73.1	73.1
4	**Ave COM**	**4.0**			**8.9**			**73.1**		
	Min COM		**3.7**			**7.7**			**72.5**	
	Max COM			**4.2**			**10.7**			**73.4**
563	**Ave White**	**3.9**			**9.3**			**72.9**		
	Min White		**2.9**			**7.5**			**70.1**	
	Max White			**4.8**			**12.0**			**74.9**
900	**Ave Maize**	**3.7**			**9.4**			**73.0**		
	Min Maize		**2.8**			**6.9**			**70.1**	
	Max Maize			**4.8**			**12.7**			**75.2**

TABLE 12: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2006/07 (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 3										
1	Region 12	3.5	3.5	3.5	10.9	10.9	10.9	73.3	73.3	73.3
1	Region 13	3.6	3.6	3.6	10.4	10.4	10.4	73.1	73.1	73.1
2	Region 17	4.0	3.7	4.2	10.3	10.1	10.5	72.4	72.0	72.7
1	Region 19	3.2	3.2	3.2	11.7	11.7	11.7	72.9	72.9	72.9
1	Region 23	3.5	3.5	3.5	10.4	10.4	10.4	73.0	73.0	73.0
1	Region 35	3.5	3.5	3.5	10.8	10.8	10.8	72.5	72.5	72.5
7	**Ave YM 3**	**3.6**			**10.7**			**72.8**		
	Min YM 3		**3.2**			**10.1**			**72.0**	
	Max YM 3			**4.2**			**11.7**			**73.3**
GRADE: COM										
3	Region 14	4.0	3.6	4.6	10.3	10.0	10.8	72.3	71.7	73.5
1	Region 15	3.9	3.9	3.9	9.0	9.0	9.0	73.0	73.0	73.0
2	Region 16	4.0	3.9	4.0	10.4	10.4	10.4	72.1	72.0	72.2
1	Region 25	3.6	3.6	3.6	9.5	9.5	9.5	72.3	72.3	72.3
1	Region 30	3.1	3.1	3.1	9.1	9.1	9.1	73.0	73.0	73.0
8	**Ave COM**	**3.8**			**9.9**			**72.4**		
	Min COM		**3.1**			**9.0**			**71.7**	
	Max COM			**4.6**			**10.8**			**73.5**
337	**Ave Yellow**	**3.5**			**9.5**			**73.3**		
	Min Yellow		**2.8**			**6.9**			**70.5**	
	Max Yellow			**4.6**			**12.7**			**75.2**
900	**Ave Maize**	**3.7**			**9.4**			**73.0**		
	Min Maize		**2.8**			**6.9**			**70.1**	
	Max Maize			**4.8**			**12.7**			**75.2**

TABLE 13: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE 2006/2007

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	WHITE									
1	Region 8	3.6	3.6	3.6	9.0	9.0	9.0	72.5	72.5	72.5
1	Region 10	3.3	3.3	3.3	8.0	8.0	8.0	74.7	74.7	74.7
9	Region 11	3.7	3.4	4.0	8.7	8.4	9.4	73.6	73.2	74.6
16	Region 12	4.1	3.9	4.3	9.7	7.8	11.0	72.2	70.8	72.9
13	Region 13	4.1	3.3	4.7	10.0	8.2	12.0	72.4	70.1	74.0
39	Region 14	4.0	3.7	4.5	9.4	8.3	10.8	72.3	70.8	73.9
34	Region 15	4.0	3.3	4.2	9.3	7.8	10.7	72.2	70.8	74.2
15	Region 16	3.8	3.3	4.0	10.0	8.9	12.0	72.0	71.5	72.7
21	Region 17	4.1	3.6	4.4	9.9	8.9	11.2	72.3	71.2	73.5
17	Region 18	3.9	3.6	4.1	9.5	9.0	10.0	73.1	72.6	74.0
18	Region 19	4.0	3.8	4.5	10.1	8.5	11.6	72.3	70.9	73.0
9	Region 20	3.9	3.7	4.3	9.2	8.8	9.7	73.1	72.4	73.9
25	Region 21	3.9	3.6	4.2	9.4	8.0	10.6	73.2	72.4	73.8
33	Region 22	4.0	3.8	4.2	9.0	8.4	9.9	73.1	72.4	73.7
99	Region 23	3.9	3.8	4.8	9.0	8.2	9.8	73.1	72.1	74.9
36	Region 24	3.9	3.7	4.3	9.8	8.8	10.5	72.9	71.7	74.2
18	Region 25	3.7	3.5	4.5	9.1	8.1	11.2	73.2	71.6	74.6
8	Region 26	4.0	3.6	4.5	9.2	7.7	11.2	72.8	71.1	74.2
7	Region 27	3.7	3.5	4.0	10.4	9.1	11.1	73.1	72.5	73.7
17	Region 28	3.6	3.4	3.9	9.2	8.3	10.2	73.1	70.8	74.1
15	Region 29	3.5	3.4	3.9	9.0	8.3	10.1	73.6	72.7	74.4
21	Region 30	3.7	3.4	4.0	9.1	7.5	10.2	73.0	71.9	74.3
7	Region 31	3.7	3.4	3.9	9.1	8.5	9.7	73.2	72.3	74.3
21	Region 32	3.5	3.4	3.8	9.2	8.7	9.9	73.6	73.0	74.6
21	Region 33	3.5	2.9	4.0	9.3	7.9	11.8	72.5	71.3	73.5
25	Region 34	3.7	3.3	4.2	9.0	7.8	10.1	73.6	72.3	74.6
10	Region 35	4.0	3.5	4.8	9.4	8.3	11.2	71.8	70.6	73.0
7	Region 36	3.8	3.6	4.0	8.7	8.3	9.3	73.6	72.9	74.4
563	**Ave white**	**3.9**			**9.3**			**72.9**		
	Min white		**2.9**			**7.5**			**70.1**	
	Max white			**4.8**			**12.0**			**74.9**
	YELLOW									
11	Region 10	3.4	3.3	3.6	8.3	8.0	8.9	74.2	73.3	74.9
25	Region 11	3.2	3.1	3.6	8.2	7.6	8.9	74.3	73.8	75.0
8	Region 12	3.7	3.2	4.1	10.0	8.7	10.9	72.8	71.8	73.3
8	Region 13	3.7	3.3	4.1	10.5	10.0	10.9	72.9	71.9	74.6
20	Region 14	3.9	3.1	4.6	10.0	9.0	10.9	72.2	71.2	74.5
10	Region 15	3.6	3.5	3.9	9.0	8.3	10.1	72.9	72.0	73.4
6	Region 16	3.8	3.5	4.0	9.6	8.3	10.4	72.3	71.7	72.9
10	Region 17	3.8	3.4	4.2	10.2	9.6	10.9	72.8	71.9	73.6
11	Region 18	3.6	3.1	3.8	9.6	9.2	10.3	73.4	72.6	74.2
10	Region 19	3.7	3.2	4.1	10.1	8.7	11.7	72.9	72.2	74.0
8	Region 20	3.5	3.1	3.8	9.3	8.5	9.8	73.7	72.9	74.5
5	Region 21	3.7	3.4	3.9	10.0	9.1	10.5	73.6	73.2	73.9
5	Region 22	3.7	3.5	3.8	9.7	9.0	10.4	73.0	72.7	73.4
11	Region 23	3.7	3.4	4.0	9.8	8.0	10.5	73.0	72.3	73.9
14	Region 24	3.6	3.2	4.1	10.1	8.1	12.7	73.3	71.9	74.6

TABLE 13: NUTRITIONAL VALUES OF WHITE AND YELLOW MAIZE 2006/2007 (continue)

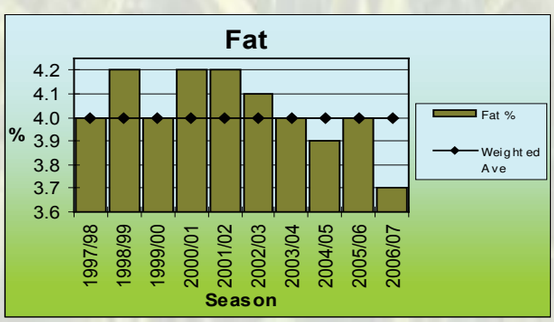
Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
YELLOW										
18	Region 25	3.5	3.0	4.0	9.6	8.8	11.0	73.2	72.0	75.2
11	Region 26	3.7	3.2	4.3	10.1	8.8	11.9	72.6	71.2	74.1
5	Region 27	3.7	3.5	3.9	10.6	10.2	11.0	72.8	72.6	73.3
24	Region 28	3.4	3.1	4.2	9.9	8.7	11.2	73.0	70.5	74.0
18	Region 29	3.4	2.8	4.1	9.1	7.2	10.2	73.8	73.1	75.1
26	Region 30	3.4	3.0	3.7	9.5	8.8	10.2	73.3	72.1	74.9
14	Region 31	3.4	3.1	3.6	9.7	9.2	10.6	73.7	73.4	74.5
16	Region 32	3.4	3.0	3.8	9.6	8.4	10.7	73.9	73.4	74.4
19	Region 33	3.4	3.1	3.8	9.2	6.9	10.9	73.0	71.2	74.5
11	Region 34	3.5	3.1	4.0	9.6	7.5	10.8	73.7	71.8	74.9
9	Region 35	3.7	2.8	4.4	9.5	8.2	10.9	72.4	70.8	74.5
4	Region 36	3.5	3.5	3.5	8.5	8.4	8.6	74.3	73.9	74.5
337	**Ave yellow**	**3.5**			**9.5**			**73.3**		
	Min yellow		**2.8**			**6.9**			**70.5**	
	Max yellow			**4.6**			**12.7**			**75.2**
WHITE AND YELLOW										
1	Region 8	3.6	3.6	3.6	9.0	9.0	9.0	72.5	72.5	72.5
12	Region 10	3.4	3.3	3.6	8.3	8.0	8.9	74.3	73.3	74.9
34	Region 11	3.4	3.1	4.0	8.4	7.6	9.4	74.2	73.2	75.0
24	Region 12	3.9	3.2	4.3	9.8	7.8	11.0	72.4	70.8	73.3
21	Region 13	3.9	3.3	4.7	10.2	8.2	12.0	72.6	70.1	74.6
59	Region 14	4.0	3.1	4.6	9.6	8.3	10.9	72.3	70.8	74.5
44	Region 15	3.9	3.3	4.2	9.2	7.8	10.7	72.4	70.8	74.2
21	Region 16	3.8	3.3	4.0	9.9	8.3	12.0	72.0	71.5	72.9
31	Region 17	4.0	3.4	4.4	10.0	8.9	11.2	72.5	71.2	73.6
28	Region 18	3.8	3.1	4.1	9.6	9.0	10.3	73.2	72.6	74.2
28	Region 19	3.9	3.2	4.5	10.1	8.5	11.7	72.5	70.9	74.0
17	Region 20	3.7	3.1	4.3	9.2	8.5	9.8	73.4	72.4	74.5
30	Region 21	3.9	3.4	4.2	9.5	8.0	10.6	73.2	72.4	73.9
38	Region 22	3.9	3.5	4.2	9.1	8.4	10.4	73.1	72.4	73.7
110	Region 23	3.9	3.4	4.8	9.1	8.0	10.5	73.1	72.1	74.9
50	Region 24	3.8	3.2	4.3	9.9	8.1	12.7	73.0	71.7	74.6
36	Region 25	3.6	3.0	4.5	9.3	8.1	11.2	73.2	71.6	75.2
19	Region 26	3.8	3.2	4.5	9.7	7.7	11.9	72.7	71.1	74.2
12	Region 27	3.7	3.5	4.0	10.5	9.1	11.1	73.0	72.5	73.7
41	Region 28	3.5	3.1	4.2	9.6	8.3	11.2	73.0	70.5	74.1
33	Region 29	3.5	2.8	4.1	9.1	7.2	10.2	73.7	72.7	75.1
47	Region 30	3.5	3.0	4.0	9.3	7.5	10.2	73.2	71.9	74.9
21	Region 31	3.5	3.1	3.9	9.5	8.5	10.6	73.5	72.3	74.5
37	Region 32	3.5	3.0	3.8	9.4	8.4	10.7	73.7	73.0	74.6
40	Region 33	3.5	2.9	4.0	9.3	6.9	11.8	72.8	71.2	74.5
36	Region 34	3.6	3.1	4.2	9.2	7.5	10.8	73.6	71.8	74.9
19	Region 35	3.8	2.8	4.8	9.4	8.2	11.2	72.1	70.6	74.5
11	Region 36	3.7	3.5	4.0	8.6	8.3	9.3	73.9	72.9	74.5
900	**Ave white & yellow**	**3.7**			**9.4**			**73.0**		
	Min white & yellow		**2.8**			**6.9**			**70.1**	
	Max white & yellow			**4.8**			**12.7**			**75.2**

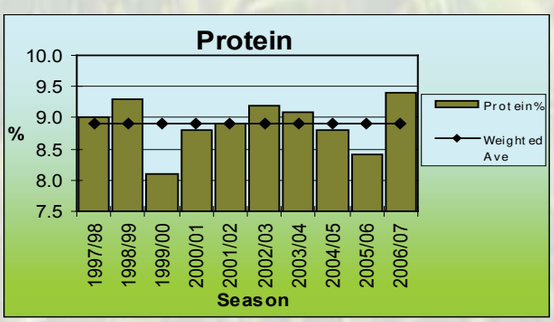
TABLE 14: COMPARISON OF THE AVERAGE NUTRITIONAL VALUES BETWEEN WHITE AND YELLOW MAIZE OVER THE PAST TEN SEASONS

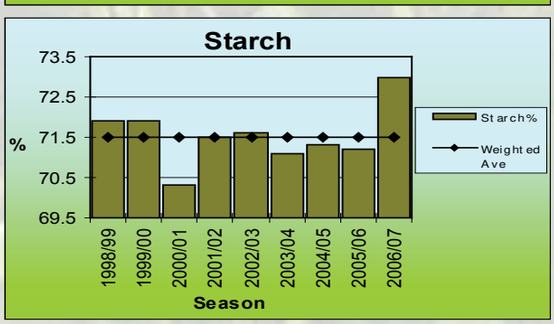
Season	White maize			Yellow maize		
	Fat	Protein	Starch	Fat	Protein	Starch
1997/98	4.0	8.9	-	4.1	9.0	-
1998/99	4.1	9.2	71.8	4.2	9.5	72.1
1999/00	4.0	8.1	71.9	4.1	8.0	72.0
2000/01	4.2	8.8	70.2	4.2	8.7	70.5
2001/02	4.2	8.9	71.4	4.1	8.9	71.7
2002/03	4.1	9.2	71.4	4.1	9.2	72.0
2003/04	4.0	9.1	71.2	4.0	9.0	71.1
2004/05	4.0	8.9	71.1	3.8	8.6	71.7
2005/06	4.0	8.5	71.1	3.9	8.4	71.5
2006/07	3.9	9.3	72.9	3.5	9.5	73.3

TABLE 15: AVERAGE NUTRITIONAL VALUES OF SOUTH AFRICAN MAIZE (1997/98 - 2006/07)

Season	Fat %	Protein %	Starch %
1997/98	4.0	9.0	-
1998/99	4.2	9.3	71.9
1999/00	4.0	8.1	71.9
2000/01	4.2	8.8	70.3
2001/02	4.2	8.9	71.5
2002/03	4.1	9.2	71.6
2003/04	4.0	9.1	71.1
2004/05	3.9	8.8	71.3
2005/06	4.0	8.4	71.2
2006/07	3.7	9.4	73.0
Weighted averages	4.0	8.9	71.5







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

TABLE 16: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2006/2007

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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1																												
1	Region 8	80.1	80.1	80.1	32.6	32.6	32.6	15.0	15.0	15.0	52.6	52.6	52.6	32.4	32.4	32.4	0.3	0.3	0.3	0.3	0.3	0.3	2	2	2	111.1	111.1	111.1
1	Region 10	80.6	80.6	80.6	32.9	32.9	32.9	2.4	2.4	2.4	47.0	47.0	47.0	50.6	50.6	50.6	1.3	1.3	1.3	0.7	0.7	0.7	1	1	1	105.7	105.7	105.7
9	Region 11	81.5	80.1	82.8	33.9	29.8	37.5	13.2	3.3	21.5	58.0	51.4	62.4	28.7	18.9	41.5	0.8	0.2	1.3	0.5	0.2	0.8	4	0	8	107.6	101.5	111.5
6	Region 12	79.4	76.1	82.5	32.0	29.5	34.8	22.9	16.4	33.6	59.6	51.7	65.2	17.6	8.5	29.0	1.5	1.0	2.3	1.1	0.5	1.8	2	1	6	104.3	90.6	112.0
4	Region 13	78.7	77.5	79.9	28.0	25.7	29.9	11.0	9.2	13.6	64.7	58.9	72.6	24.3	13.8	31.8	1.3	0.8	2.2	0.8	0.5	1.3	2	1	2	105.5	95.0	111.2
28	Region 14	79.6	77.4	81.9	29.9	26.7	36.0	16.8	5.9	30.3	65.3	58.2	71.3	17.9	10.1	34.5	1.2	0.6	2.2	0.8	0.3	1.5	3	0	5	105.2	93.7	113.1
27	Region 15	80.4	78.1	81.6	32.2	28.6	35.4	20.8	11.6	29.5	65.7	57.4	71.3	13.5	3.4	20.6	1.0	0.4	3.6	0.7	0.2	2.3	3	0	14	105.9	92.8	112.9
11	Region 16	78.5	74.8	80.7	31.8	21.7	38.2	21.1	4.1	37.7	63.4	55.9	72.7	15.5	6.4	35.2	1.4	0.3	3.3	1.0	0.3	2.5	3	0	8	107.2	81.7	116.2
7	Region 17	78.6	77.0	81.0	28.5	25.5	31.1	11.2	4.2	16.2	65.7	59.1	71.9	23.2	14.5	36.7	1.4	0.8	3.3	0.9	0.5	1.9	2	0	3	103.4	96.0	112.1
17	Region 18	78.2	77.2	79.6	28.5	24.5	32.3	15.5	5.4	25.0	62.8	55.7	68.2	21.7	8.9	34.3	0.9	0.3	2.3	0.4	0.0	0.9	2	0	4	99.0	90.0	107.7
7	Region 19	78.1	77.2	79.6	30.8	23.5	36.3	22.9	8.4	39.3	58.3	50.8	66.9	18.7	8.3	40.8	1.2	0.3	2.2	0.9	0.1	1.7	3	0	11	104.3	101.8	107.6
6	Region 20	77.5	73.9	79.7	30.1	25.5	36.1	18.9	10.7	40.9	63.8	54.0	71.0	17.3	5.1	28.1	1.2	0.4	2.8	0.8	0.4	2.1	2	0	4	96.7	87.3	104.2
14	Region 21	77.9	75.8	79.6	28.3	23.5	33.0	11.2	4.2	22.3	65.0	57.4	74.3	23.8	11.8	35.7	1.2	0.4	2.3	0.8	0.2	1.7	3	0	6	96.9	85.2	106.7
31	Region 22	78.6	75.9	79.8	31.7	26.2	34.8	22.1	3.8	34.0	62.8	49.7	68.3	15.1	3.6	46.5	1.1	0.1	2.0	0.8	0.1	1.4	2	0	6	95.8	89.4	102.0
89	Region 23	79.0	73.4	81.1	32.1	25.1	38.5	23.0	1.2	42.9	62.2	44.3	76.2	14.8	4.5	50.7	1.2	0.2	3.9	0.9	0.2	2.6	2	0	24	99.1	83.1	110.2
31	Region 24	78.3	76.5	81.7	28.0	25.1	35.2	14.5	5.6	25.2	65.6	58.1	74.4	19.9	1.5	36.3	1.2	0.1	3.9	0.7	0.0	2.3	5	0	27	97.0	79.4	109.4
18	Region 25	78.4	76.8	82.5	27.8	23.8	31.4	8.4	2.0	14.9	66.8	53.2	73.7	24.8	15.8	43.4	1.5	0.3	2.8	1.0	0.3	1.8	3	0	13	99.4	87.9	123.6
7	Region 26	78.6	74.8	80.6	27.8	26.0	29.8	11.1	2.5	22.5	61.8	50.4	66.1	27.1	13.4	45.7	1.9	0.5	6.0	1.2	0.1	4.6	3	0	11	102.7	92.7	118.7
7	Region 27	78.0	77.2	78.5	26.4	24.6	28.2	6.6	3.4	10.9	63.8	53.3	69.2	29.6	25.0	43.3	0.9	0.6	1.3	0.5	0.2	1.0	2	0	7	105.1	101.4	109.2
16	Region 28	78.5	77.1	81.0	29.1	23.9	36.8	13.1	5.7	26.2	67.8	59.6	78.2	19.1	9.2	29.6	0.9	0.2	2.6	0.6	0.2	1.8	3	0	13	100.3	86.7	109.2
15	Region 29	78.8	76.3	81.0	28.6	23.4	34.7	17.1	5.1	25.7	63.5	56.6	67.6	19.4	8.0	37.6	1.0	0.1	2.1	0.5	0.1	1.3	2	0	5	96.5	81.7	107.9
20	Region 30	77.0	74.8	79.4	28.5	25.1	35.1	12.5	4.0	39.1	65.8	55.5	74.5	21.8	5.4	36.0	1.6	0.3	3.7	1.0	0.2	2.0	3	0	7	100.3	91.6	110.6
6	Region 31	79.2	76.6	81.1	32.4	26.6	37.8	26.7	13.5	37.2	59.4	50.6	67.2	13.9	5.9	24.5	0.7	0.0	1.9	0.5	0.0	1.2	2	0	4	98.4	94.5	104.5
20	Region 32	77.2	75.4	79.4	29.2	24.2	35.4	15.9	7.1	32.0	63.7	53.6	70.6	20.4	10.9	30.7	1.0	0.5	1.6	0.6	0.1	1.1	2	0	5	92.9	86.2	99.8
18	Region 33	75.9	71.8	79.0	28.3	19.7	39.7	15.2	0.7	33.3	61.0	38.7	76.0	23.8	6.9	59.0	1.9	0.0	4.2	1.2	0.0	3.3	5	0	22	100.2	84.0	115.0
22	Region 34	76.6	72.3	79.0	27.7	21.4	33.7	17.3	3.7	31.9	62.8	53.5	74.2	19.9	10.4	30.6	1.3	0.2	3.2	0.7	0.1	2.2	2	0	11	93.6	82.5	104.5
10	Region 35	79.1	76.1	81.9	31.9	28.3	40.1	20.5	2.9	51.7	57.3	46.5	70.7	22.2	0.8	45.1	1.9	0.3	3.6	1.4	0.0	2.8	5	2	12	107.6	100.8	123.8
7	Region 36	78.4	77.0	79.0	31.1	27.8	32.9	17.9	9.6	35.6	59.1	51.3	67.5	23.0	13.1	32.0	0.9	0.4	1.3	0.4	0.1	1.0	4	0	9	102.4	95.2	104.9
455	**Ave WM 1**	**78.5**			**30.1**			**17.6**			**63.3**			**19.1**			**1.2**			**0.8**			**3**			**100.0**		
	Min WM 1		**71.8**			**19.7**			**0.7**			**38.7**			**0.8**			**0.0**			**0.0**			**0**			**79.4**	
	Max WM 1			**82.8**			**40.1**			**51.7**			**78.2**			**59.0**			**6.0**			**4.6**			**27**			**123.8**

TABLE 16: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2006/2007
(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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2																												
6	Region 12	78.4	76.6	79.7	30.6	27.0	33.1	17.2	9.6	27.3	68.3	60.3	72.4	14.5	12.2	19.3	2.0	1.2	2.5	1.6	1.0	2.1	3	1	5	104.8	100.5	109.2
6	Region 13	77.0	75.0	79.0	28.7	19.4	35.2	14.8	3.3	26.4	66.6	52.4	71.9	18.7	4.9	44.3	2.7	1.9	3.7	1.7	0.4	2.7	2	0	4	105.2	87.0	122.9
7	Region 14	77.9	75.7	79.4	28.7	26.5	31.0	13.7	8.0	17.6	67.4	65.9	68.6	18.9	16.5	25.0	2.1	1.5	2.7	1.5	1.1	2.2	4	1	9	105.6	100.3	113.1
2	Region 15	77.0	76.6	77.4	33.4	33.2	33.6	22.7	19.0	26.3	67.7	65.7	69.7	9.7	8.0	11.3	3.3	1.5	5.0	2.6	1.1	4.0	3	0	6	101.1	93.5	108.6
1	Region 16	69.6	69.6	69.6	21.9	21.9	21.9	4.6	4.6	4.6	64.7	64.7	64.7	30.7	30.7	30.7	4.1	4.1	4.1	2.0	2.0	2.0	1	1	1	74.6	74.6	74.6
8	Region 17	78.5	77.1	79.9	29.6	26.3	32.7	13.5	6.6	22.7	65.7	57.0	77.6	20.9	7.5	31.9	2.0	1.0	2.6	1.3	0.7	1.6	2	1	3	107.7	94.0	118.2
8	Region 19	76.4	75.0	77.5	26.5	23.4	31.9	12.1	5.6	28.1	61.2	54.7	72.8	26.8	10.3	35.4	2.4	1.7	2.8	1.6	0.8	2.3	2	0	6	102.3	92.9	106.0
1	Region 20	79.4	79.4	79.4	30.6	30.6	30.6	16.2	16.2	16.2	63.5	63.5	63.5	20.3	20.3	20.3	1.0	1.0	1.0	0.4	0.4	0.4	2	2	2	109.0	109.0	109.0
9	Region 21	76.1	72.9	78.5	28.1	22.2	34.7	15.1	3.9	30.5	62.1	45.7	72.1	22.8	7.3	49.8	1.6	0.8	2.8	1.0	0.5	1.5	2	0	5	94.9	77.8	108.0
1	Region 22	77.4	77.4	77.4	31.2	31.2	31.2	21.5	21.5	21.5	59.7	59.7	59.7	18.8	18.8	18.8	1.2	1.2	1.2	1.0	1.0	1.0	0	0	0	97.9	97.9	97.9
8	Region 23	78.3	74.3	80.6	31.0	20.5	34.0	22.3	1.7	33.1	58.4	16.7	72.0	19.3	5.8	81.6	2.1	1.0	3.6	1.4	0.8	2.4	3	0	8	101.0	93.9	111.3
3	Region 24	76.8	74.1	78.3	27.6	27.3	27.8	7.8	7.2	8.6	64.6	60.3	71.6	27.7	21.2	32.2	1.9	0.5	3.4	1.2	0.1	2.3	0	0	1	94.7	85.4	101.3
1	Region 28	77.6	77.6	77.6	24.5	24.5	24.5	13.5	13.5	13.5	59.5	59.5	59.5	27.0	27.0	27.0	1.7	1.7	1.7	0.8	0.8	0.8	1	1	1	96.4	96.4	96.4
1	Region 30	78.1	78.1	78.1	33.4	33.4	33.4	19.4	19.4	19.4	66.2	66.2	66.2	14.4	14.4	14.4	0.9	0.9	0.9	0.7	0.7	0.7	0	0	0	88.5	88.5	88.5
1	Region 31	73.5	73.5	73.5	25.6	25.6	25.6	17.0	17.0	17.0	53.5	53.5	53.5	29.5	29.5	29.5	2.6	2.6	2.6	1.1	1.1	1.1	0	0	0	86.4	86.4	86.4
1	Region 33	72.3	72.3	72.3	21.0	21.0	21.0	2.8	2.8	2.8	38.9	38.9	38.9	58.3	58.3	58.3	3.3	3.3	3.3	2.0	2.0	2.0	9	9	9	89.5	89.5	89.5
2	Region 34	75.7	75.0	76.3	27.5	24.3	30.6	15.5	3.2	27.7	41.8	27.7	55.8	42.8	16.5	69.1	2.5	1.5	3.5	1.9	1.2	2.5	10	9	11	96.9	91.6	102.2
66	**Ave WM 2**	**77.2**			**28.8**			**15.2**			**62.7**			**22.1**			**2.1**			**1.4**			**3**			**101.0**		
	Min WM 2		**69.6**			**19.4**			**1.7**			**16.7**			**4.9**			**0.5**			**0.1**			**0**			**74.6**	
	Max WM 2			**80.6**			**35.2**			**33.1**			**77.6**			**81.6**			**5.0**			**4.0**			**11**			**122.9**

TABLE 16: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2006/2007

(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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																												
4	Region 12	77.5	75.6	78.5	31.1	28.0	35.2	16.8	8.9	26.7	67.2	57.6	74.9	16.1	13.0	19.5	2.8	1.8	4.6	2.1	1.3	3.0	3	1	5	106.7	105.6	109.8
3	Region 13	78.6	78.0	79.4	29.9	29.2	30.8	11.7	9.5	14.6	70.5	67.7	73.8	17.7	15.1	20.4	2.5	2.1	2.9	1.8	1.6	2.0	3	2	5	110.2	107.3	115.2
4	Region 14	75.7	72.9	78.5	29.2	25.8	31.0	15.4	4.3	28.1	62.4	61.0	64.1	22.2	10.9	33.4	5.4	2.7	12.1	4.8	2.1	11.5	7	3	14	99.8	85.8	111.5
4	Region 15	76.1	74.4	79.0	32.9	30.2	37.1	26.8	19.0	37.0	63.8	53.6	71.2	9.4	7.7	11.9	2.6	1.4	4.0	2.0	1.2	3.1	4	1	5	98.4	81.4	109.1
3	Region 16	69.4	68.6	70.2	21.8	20.9	22.8	2.5	1.6	3.3	64.7	60.5	68.0	32.8	28.7	36.8	4.3	3.2	5.3	2.7	2.0	3.6	3	1	4	76.1	73.7	77.5
6	Region 17	77.3	76.1	78.3	28.5	26.0	30.7	14.4	7.6	18.3	62.9	53.3	68.5	22.7	15.9	31.9	2.5	1.1	3.8	1.7	0.6	2.7	4	2	6	101.3	96.5	110.9
3	Region 19	74.8	74.3	75.0	26.3	25.8	27.2	13.8	6.0	26.6	63.7	62.4	64.6	22.5	8.8	31.6	3.6	3.0	4.4	2.7	2.3	3.4	1	0	3	95.9	90.4	101.1
2	Region 20	74.5	72.3	76.6	27.8	26.8	28.7	14.5	14.3	14.7	66.1	59.3	72.9	19.4	12.4	26.4	3.6	1.6	5.5	2.5	1.2	3.7	12	8	16	91.7	86.1	97.3
1	Region 21	73.2	73.2	73.2	28.6	28.6	28.6	25.5	25.5	25.5	58.2	58.2	58.2	16.3	16.3	16.3	2.3	2.3	2.3	1.5	1.5	1.5	3	3	3	80.4	80.4	80.4
1	Region 22	75.9	75.9	75.9	29.3	29.3	29.3	17.3	17.3	17.3	69.4	69.4	69.4	13.3	13.3	13.3	1.9	1.9	1.9	1.3	1.3	1.3	8	8	8	98.4	98.4	98.4
2	Region 23	78.9	77.5	80.2	33.5	30.6	36.3	26.6	15.2	38.0	63.7	55.5	71.8	9.8	6.5	13.0	2.8	0.9	4.6	1.9	0.8	3.0	7	3	11	114.5	114.1	114.9
2	Region 24	77.2	75.9	78.5	28.9	27.5	30.2	17.7	13.9	21.4	66.7	64.6	68.7	15.7	14.0	17.4	3.5	3.2	3.7	2.1	2.0	2.2	6	2	10	97.0	93.3	100.7
1	Region 32	75.2	75.2	75.2	23.6	23.6	23.6	6.6	6.6	6.6	59.5	59.5	59.5	33.9	33.9	33.9	1.4	1.4	1.4	0.7	0.7	0.7	1	1	1	96.2	96.2	96.2
1	Region 33	69.5	69.5	69.5	21.9	21.9	21.9	1.3	1.3	1.3	56.4	56.4	56.4	42.3	42.3	42.3	2.5	2.5	2.5	1.2	1.2	1.2	6	6	6	86.5	86.5	86.5
1	Region 34	77.8	77.8	77.8	23.7	23.7	23.7	8.6	8.6	8.6	62.1	62.1	62.1	29.3	29.3	29.3	0.6	0.6	0.6	0.2	0.2	0.2	3	3	3	96.0	96.0	96.0
38	**Ave WM 3**	**75.8**			**28.5**			**15.4**			**64.4**			**20.3**			**3.1**			**2.2**			**4**			**98.4**		
	Min WM 3		**68.6**			**20.9**			**1.3**			**53.3**			**6.5**			**0.6**			**0.2**			**0**			**73.7**	
	Max WM 3			**80.2**			**37.1**			**38.0**			**74.9**			**42.3**			**12.1**			**11.5**			**16**			**115.2**
GRADE: COM																												
1	Region 15	76.1	76.1	76.1	27.7	27.7	27.7	18.3	18.3	18.3	69.7	69.7	69.7	12.0	12.0	12.0	1.6	1.6	1.6	1.0	1.0	1.0	3	3	3	100.5	100.5	100.5
1	Region 21	72.1	72.1	72.1	20.5	20.5	20.5	0.2	0.2	0.2	46.6	46.6	46.6	53.2	53.2	53.2	4.9	4.9	4.9	3.0	3.0	3.0	5	5	5	71.2	71.2	71.2
1	Region 26	68.1	68.1	68.1	27.9	27.9	27.9	8.4	8.4	8.4	65.1	65.1	65.1	26.5	26.5	26.5	9.1	9.1	9.1	6.9	6.9	6.9	3	3	3	81.3	81.3	81.3
1	Region 33	75.6	75.6	75.6	30.4	30.4	30.4	16.8	16.8	16.8	70.0	70.0	70.0	13.2	13.2	13.2	1.9	1.9	1.9	1.2	1.2	1.2	3	3	3	96.6	96.6	96.6
4	**Ave COM**	**73.0**			**26.6**			**10.9**			**62.9**			**26.2**			**4.4**			**3.0**			**4**			**87.4**		
	Min COM		**68.1**			**20.5**			**0.2**			**46.6**			**12.0**			**1.6**			**1.0**			**3**			**71.2**	
	Max COM			**76.1**			**30.4**			**18.3**			**70.0**			**53.2**			**9.1**			**6.9**			**5**			**100.5**
563	**Ave white maize**	**78.1**			**29.8**			**17.1**			**63.3**			**19.6**			**1.5**			**1.0**			**3**			**99.9**		
	Min white maize		**68.1**			**19.4**			**0.2**			**16.7**			**0.8**			**0.0**			**0.0**			**0**			**71.2**	
	Max white maize			**82.8**			**40.1**			**51.7**			**78.2**			**81.6**			**12.1**			**11.5**			**27**			**123.8**
900	**Ave maize**	**77.5**			**28.9**			**13.9**			**62.7**			**23.4**			**1.7**			**1.1**			**3**			**98.3**		
	Min maize		**68.1**			**16.6**			**0.0**			**16.7**			**0.8**			**0.0**			**0.0**			**0**			**70.9**	
	Max maize			**82.8**			**40.1**			**51.7**			**79.5**			**82.9**			**12.1**			**11.5**			**27**			**123.8**

TABLE 16: PHYSICAL QUALITY FACTORS OF WHITE MAIZE 2006/2007

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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
WHITE																												
1	Region 8	80.1	80.1	80.1	32.6	32.6	32.6	15.0	15.0	15.0	52.6	52.6	52.6	32.4	32.4	32.4	0.3	0.3	0.3	0.3	0.3	0.3	2	2	2	111.1	111.1	111.1
1	Region 10	80.6	80.6	80.6	32.9	32.9	32.9	2.4	2.4	2.4	47.0	47.0	47.0	50.6	50.6	50.6	1.3	1.3	1.3	0.7	0.7	0.7	1	1	1	105.7	105.7	105.7
9	Region 11	81.5	80.1	82.8	33.9	29.8	37.5	13.2	3.3	21.5	58.0	51.4	62.4	28.7	18.9	41.5	0.8	0.2	1.3	0.5	0.2	0.8	4	0	8	107.6	101.5	111.5
16	Region 12	78.6	75.6	82.5	31.3	27.0	35.2	19.2	8.9	33.6	64.7	51.7	74.9	16.1	8.5	29.0	2.0	1.0	4.6	1.5	0.5	3.0	3	1	6	105.1	90.6	112.0
13	Region 13	77.9	75.0	79.9	28.8	19.4	35.2	12.9	3.3	26.4	66.9	52.4	73.8	20.2	4.9	44.3	2.2	0.8	3.7	1.4	0.4	2.7	2	0	5	106.5	87.0	122.9
39	Region 14	78.9	72.9	81.9	29.6	25.8	36.0	16.1	4.3	30.3	65.4	58.2	71.3	18.5	10.1	34.5	1.7	0.6	12.1	1.4	0.3	11.5	3	0	14	104.7	85.8	113.1
34	Region 15	79.6	74.4	81.6	32.2	27.7	37.1	21.5	11.6	37.0	65.7	53.6	71.3	12.7	3.4	20.6	1.3	0.4	5.0	1.0	0.2	4.0	3	0	14	104.6	81.4	112.9
15	Region 16	76.1	68.6	80.7	29.1	20.9	38.2	16.3	1.6	37.7	63.7	55.9	72.7	20.0	6.4	36.8	2.2	0.3	5.3	1.4	0.3	3.6	3	0	8	98.8	73.7	116.2
21	Region 17	78.2	76.1	81.0	28.9	25.5	32.7	13.0	4.2	22.7	64.9	53.3	77.6	22.1	7.5	36.7	1.9	0.8	3.8	1.3	0.5	2.7	2	0	6	104.4	94.0	118.2
17	Region 18	78.2	77.2	79.6	28.5	24.5	32.3	15.5	5.4	25.0	62.8	55.7	68.2	21.7	8.9	34.3	0.9	0.3	2.3	0.4	0.0	0.9	2	0	4	99.0	90.0	107.7
18	Region 19	76.8	74.3	79.6	28.2	23.4	36.3	16.6	5.6	39.3	60.5	50.8	72.8	22.9	8.3	40.8	2.1	0.3	4.4	1.5	0.1	3.4	2	0	11	102.0	90.4	107.6
9	Region 20	77.0	72.3	79.7	29.7	25.5	36.1	17.6	10.7	40.9	64.3	54.0	72.9	18.1	5.1	28.1	1.7	0.4	5.5	1.1	0.4	3.7	4	0	16	97.0	86.1	109.0
25	Region 21	76.8	72.1	79.6	27.9	20.5	34.7	12.7	0.2	30.5	63.0	45.7	74.3	24.3	7.3	53.2	1.5	0.4	4.9	1.0	0.2	3.0	3	0	6	94.5	71.2	108.0
33	Region 22	78.5	75.9	79.8	31.6	26.2	34.8	21.9	3.8	34.0	62.9	49.7	69.4	15.2	3.6	46.5	1.1	0.1	2.0	0.8	0.1	1.4	2	0	8	96.0	89.4	102.0
99	Region 23	78.9	73.4	81.1	32.0	20.5	38.5	23.0	1.2	42.9	61.9	16.7	76.2	15.1	4.5	81.6	1.3	0.2	4.6	1.0	0.2	3.0	3	0	24	99.5	83.1	114.9
36	Region 24	78.1	74.1	81.7	28.0	25.1	35.2	14.1	5.6	25.2	65.6	58.1	74.4	20.3	1.5	36.3	1.4	0.1	3.9	0.9	0.0	2.3	4	0	27	96.8	79.4	109.4
18	Region 25	78.4	76.8	82.5	27.8	23.8	31.4	8.4	2.0	14.9	66.8	53.2	73.7	24.8	15.8	43.4	1.5	0.3	2.8	1.0	0.3	1.8	3	0	13	99.4	87.9	123.6
8	Region 26	77.3	68.1	80.6	27.8	26.0	29.8	10.8	2.5	22.5	62.2	50.4	66.1	27.0	13.4	45.7	2.8	0.5	9.1	1.9	0.1	6.9	3	0	11	100.0	81.3	118.7
7	Region 27	78.0	77.2	78.5	26.4	24.6	28.2	6.6	3.4	10.9	63.8	53.3	69.2	29.6	25.0	43.3	0.9	0.6	1.3	0.5	0.2	1.0	2	0	7	105.1	101.4	109.2
17	Region 28	78.4	77.1	81.0	28.8	23.9	36.8	13.1	5.7	26.2	67.3	59.5	78.2	19.6	9.2	29.6	1.0	0.2	2.6	0.6	0.2	1.8	3	0	13	100.0	86.7	109.2
15	Region 29	78.8	76.3	81.0	28.6	23.4	34.7	17.1	5.1	25.7	63.5	56.6	67.6	19.4	8.0	37.6	1.0	0.1	2.1	0.5	0.1	1.3	2	0	5	96.5	81.7	107.9
21	Region 30	77.0	74.8	79.4	28.8	25.1	35.1	12.8	4.0	39.1	65.8	55.5	74.5	21.4	5.4	36.0	1.5	0.3	3.7	0.9	0.2	2.0	3	0	7	99.7	88.5	110.6
7	Region 31	78.4	73.5	81.1	31.4	25.6	37.8	25.3	13.5	37.2	58.5	50.6	67.2	16.2	5.9	29.5	1.0	0.2	2.6	0.6	0.0	1.2	2	0	4	96.7	86.4	104.5
21	Region 32	77.1	75.2	79.4	28.9	23.6	35.4	15.5	6.6	32.0	63.5	53.6	70.6	21.0	10.9	33.9	1.0	0.5	1.6	0.6	0.1	1.1	2	0	5	93.1	86.2	99.8
21	Region 33	75.4	69.5	79.0	27.7	19.7	39.7	14.0	0.7	33.3	60.1	38.7	76.0	25.9	6.9	59.0	2.0	0.0	4.2	1.3	0.0	3.3	6	0	22	98.9	84.0	115.0
25	Region 34	76.5	72.3	79.0	27.6	21.4	33.7	16.8	3.2	31.9	61.1	27.7	74.2	22.1	10.4	69.1	1.3	0.2	3.5	0.8	0.1	2.5	3	0	11	94.0	82.5	104.5
10	Region 35	79.1	76.1	81.9	31.9	28.3	40.1	20.5	2.9	51.7	57.3	46.5	70.7	22.2	0.8	45.1	1.9	0.3	3.6	1.4	0.0	2.8	5	2	12	107.6	100.8	123.8
7	Region 36	78.4	77.0	79.0	31.1	27.8	32.9	17.9	9.6	35.6	59.1	51.3	67.5	23.0	13.1	32.0	0.9	0.4	1.3	0.4	0.1	1.0	4	0	9	102.4	95.2	104.9
563	**Ave white**	**78.1**			**29.8**			**17.1**			**63.3**			**19.6**			**1.5**			**1.0**			**3**			**99.9**		
	Min white		**68.1**			**19.4**			**0.2**			**16.7**			**0.8**			**0.0**			**0.0**			**0**			**71.2**	
	Max white			**82.8**			**40.1**			**51.7**			**78.2**			**81.6**			**12.1**			**11.5**			**27**			**123.8**

TABLE 17: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2006/2007

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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1																												
11	Region 10	78.3	76.5	79.7	34.2	31.6	38.6	6.7	3.3	10.2	68.6	49.2	74.2	24.7	15.9	47.1	1.0	0.4	1.6	0.8	0.4	1.3	5	2	7	93.9	88.8	100.0
25	Region 11	78.8	77.2	79.9	33.5	29.9	38.3	5.3	0.4	10.6	68.8	56.4	74.6	25.9	16.4	41.9	1.4	0.6	2.5	1.1	0.5	1.8	4	0	9	91.9	78.3	102.5
5	Region 12	77.1	75.3	79.2	29.4	26.5	34.8	10.2	7.4	14.1	69.4	67.6	72.2	20.4	17.6	25.0	3.0	1.9	4.5	2.1	1.3	3.2	6	2	15	99.7	92.3	106.0
5	Region 13	76.9	75.6	78.3	25.5	21.3	29.1	5.7	1.6	8.1	62.6	50.8	71.0	31.7	21.9	47.6	1.7	1.4	2.3	1.0	0.5	1.5	3	1	5	103.4	92.6	112.7
16	Region 14	77.8	72.3	80.3	29.1	25.4	35.1	12.5	2.8	29.8	63.5	53.5	73.1	24.0	9.0	41.3	2.1	0.5	3.3	1.4	0.4	2.1	5	1	14	105.2	95.5	115.2
9	Region 15	78.8	77.1	80.1	31.4	27.1	35.1	5.1	1.3	15.2	62.6	57.4	69.9	32.3	18.7	38.2	1.3	0.5	2.0	1.0	0.4	1.6	4	1	9	100.0	95.0	109.7
2	Region 16	75.0	75.0	75.0	27.8	26.6	29.0	7.0	6.7	7.2	65.6	65.1	66.0	27.5	26.8	28.2	1.9	1.8	1.9	1.4	1.2	1.6	10	4	15	96.5	96.0	96.9
6	Region 17	74.9	71.2	76.7	25.4	19.8	28.1	5.3	3.7	6.2	58.7	43.5	71.1	36.1	22.7	52.4	2.4	1.8	3.0	1.6	1.2	2.3	3	2	6	96.6	87.4	102.5
10	Region 18	76.3	75.0	77.2	27.3	22.8	30.0	10.2	1.7	21.1	59.8	51.2	66.6	30.1	19.7	47.1	1.6	0.2	2.6	0.9	0.0	1.7	3	0	7	92.5	87.3	97.4
5	Region 19	76.6	75.7	77.4	27.4	23.1	33.3	9.5	1.2	16.9	61.7	53.1	67.5	28.8	15.6	45.7	1.8	1.4	2.4	1.4	0.9	2.2	1	0	3	98.7	94.8	104.8
6	Region 20	76.6	76.3	77.1	29.2	25.5	34.2	12.4	6.0	21.6	61.6	53.9	68.5	26.0	13.4	40.1	1.8	1.0	2.9	1.2	0.8	1.7	2	1	5	97.4	93.4	99.8
2	Region 21	75.5	74.7	76.3	25.0	24.6	25.3	7.0	6.1	7.9	59.2	56.4	61.9	33.9	30.2	37.5	1.2	1.0	1.4	0.7	0.5	0.9	2	0	4	92.0	89.1	94.8
4	Region 22	76.6	76.2	77.0	30.5	27.7	32.6	8.7	7.0	10.9	67.5	59.6	76.0	23.8	15.7	33.4	1.4	1.0	1.8	1.0	0.8	1.2	2	2	3	92.9	88.1	95.0
9	Region 23	77.3	75.9	79.2	28.2	25.3	33.4	7.6	4.3	11.1	67.1	60.8	75.4	25.2	13.5	32.8	1.9	1.2	2.5	1.2	0.7	1.9	3	1	8	97.9	84.6	107.0
12	Region 24	77.2	74.8	81.2	29.3	22.6	36.2	7.0	0.4	19.9	64.1	51.5	79.5	28.9	11.7	44.5	1.3	0.3	2.8	0.8	0.2	1.7	3	0	8	97.7	82.3	114.7
12	Region 25	76.9	75.8	78.1	25.4	23.6	27.1	5.6	2.2	10.1	59.9	57.9	63.7	34.6	29.3	39.8	2.1	1.0	3.9	1.2	0.6	2.0	3	1	8	96.0	82.3	106.8
10	Region 26	77.8	76.5	79.7	26.5	24.4	30.0	6.3	3.7	14.9	61.3	50.0	71.1	32.4	22.6	46.0	1.8	0.4	4.0	1.2	0.4	3.0	2	0	6	105.4	91.7	118.7
4	Region 27	76.0	75.6	76.5	25.3	24.6	26.0	8.7	4.3	11.1	60.7	54.6	63.1	30.6	25.8	41.1	1.3	0.9	1.5	0.9	0.8	1.2	4	1	6	98.6	94.8	100.9
19	Region 28	77.6	74.7	80.6	28.1	20.3	33.3	10.1	2.8	17.8	66.3	43.4	73.6	23.5	10.9	53.8	1.6	0.3	6.5	1.0	0.3	3.3	5	1	16	101.2	89.2	117.8
16	Region 29	76.9	74.4	78.8	26.5	19.1	30.8	11.6	2.4	26.2	62.2	52.4	69.1	26.3	13.3	45.2	1.6	0.4	4.5	1.0	0.4	2.8	2	0	9	93.7	83.9	101.6
20	Region 30	75.7	70.5	78.4	25.6	19.9	30.9	11.6	0.3	28.8	57.9	46.0	69.4	30.6	13.7	50.7	2.5	0.7	5.6	1.4	0.5	3.3	6	0	21	96.8	70.9	111.7
9	Region 31	75.9	74.4	77.5	25.8	23.5	28.0	14.2	8.9	18.8	62.9	59.9	66.2	22.8	19.0	29.2	1.7	0.8	2.5	1.1	0.5	1.5	2	0	4	94.4	90.4	100.8
12	Region 32	75.8	72.7	79.8	26.4	21.1	36.7	12.1	4.9	18.5	62.5	54.9	74.3	25.5	18.1	37.3	1.6	0.7	2.6	0.9	0.1	1.4	3	1	6	88.4	78.0	104.5
16	Region 33	75.7	73.1	78.1	27.2	21.8	32.4	10.7	1.5	26.3	61.9	49.9	68.0	27.4	9.7	45.4	2.7	1.0	4.5	1.9	0.6	3.6	6	1	12	92.9	77.7	113.7
5	Region 34	74.8	72.5	76.5	25.2	22.6	27.0	8.0	2.7	12.2	60.4	54.6	63.8	31.6	25.9	42.7	2.2	1.0	4.5	1.3	0.3	2.7	7	2	11	90.7	84.2	108.3
8	Region 35	77.8	75.0	80.2	32.3	26.4	37.9	12.3	1.8	34.2	64.9	54.4	77.0	22.7	9.3	38.2	2.5	1.4	3.3	1.9	1.1	3.0	6	1	10	98.3	76.2	115.0
4	Region 36	77.0	76.3	77.6	27.8	25.9	30.2	12.6	8.8	16.1	60.6	57.0	62.1	26.8	22.1	32.0	1.7	1.2	2.2	1.2	0.6	1.8	8	2	15	96.7	94.0	99.2
262	**Ave YM 1**	**77.0**			**28.3**			**9.2**			**63.3**			**27.5**			**1.8**			**1.2**			**4**			**96.5**		
	Min YM 1		**70.5**			**19.1**			**0.3**			**43.4**			**9.0**			**0.2**			**0.0**			**0**			**70.9**	
	Max YM 1			**81.2**			**38.6**			**34.2**			**79.5**			**53.8**			**6.5**			**3.6**			**21**			**118.7**

TABLE 17: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2006/2007
(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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 2																												
2	Region 12	74.4	72.9	75.9	27.0	26.9	27.0	2.4	1.4	3.3	64.6	61.7	67.4	33.1	29.3	36.9	4.1	2.8	5.4	2.5	2.0	3.0	6	4	7	95.5	92.3	98.6
2	Region 13	74.0	72.3	75.6	23.5	19.9	27.1	2.0	1.4	2.6	54.4	41.3	67.5	43.6	29.9	57.3	4.1	2.7	5.4	2.1	2.1	2.1	5	4	5	88.9	77.6	100.2
1	Region 14	74.5	74.5	74.5	25.3	25.3	25.3	6.9	6.9	6.9	66.3	66.3	66.3	26.8	26.8	26.8	3.8	3.8	3.8	2.3	2.3	2.3	2	2	2	100.5	100.5	100.5
2	Region 16	75.1	74.9	75.2	27.9	25.6	30.2	12.2	8.4	16.0	68.6	67.6	69.6	19.2	14.4	24.0	3.9	3.0	4.8	3.0	2.2	3.7	12	8	16	104.7	104.6	104.7
2	Region 17	73.4	71.7	75.0	24.0	20.4	27.5	5.4	5.1	5.7	60.8	51.0	70.6	33.8	23.7	43.9	4.0	3.2	4.8	2.7	2.6	2.8	5	4	5	98.5	89.9	107.1
1	Region 18	75.2	75.2	75.2	25.6	25.6	25.6	6.6	6.6	6.6	56.5	56.5	56.5	36.9	36.9	36.9	2.8	2.8	2.8	1.9	1.9	1.9	6	6	6	90.9	90.9	90.9
4	Region 19	73.0	71.1	74.4	25.1	22.6	26.7	10.1	7.3	12.6	58.3	50.5	67.9	31.7	23.3	38.0	3.2	1.8	4.6	2.3	1.3	3.5	3	2	3	90.5	84.8	97.2
2	Region 20	75.4	74.9	75.9	23.1	20.2	25.9	3.7	3.0	4.3	51.4	44.1	58.7	45.0	38.3	51.6	2.0	1.8	2.2	1.1	0.9	1.2	4	4	4	90.2	88.5	91.8
3	Region 21	73.7	72.6	75.7	24.0	22.4	27.1	4.5	0.7	6.9	53.6	47.3	57.4	41.9	36.6	52.0	2.0	1.7	2.6	1.4	0.9	1.8	3	1	7	87.2	80.9	91.2
1	Region 22	74.7	74.7	74.7	25.8	25.8	25.8	5.6	5.6	5.6	63.0	63.0	63.0	31.4	31.4	31.4	3.2	3.2	3.2	2.3	2.3	2.3	1	1	1	96.0	96.0	96.0
1	Region 23	77.4	77.4	77.4	26.6	26.6	26.6	8.6	8.6	8.6	68.6	68.6	68.6	22.8	22.8	22.8	2.9	2.9	2.9	2.0	2.0	2.0	7	7	7	96.2	96.2	96.2
2	Region 24	75.6	75.4	75.8	26.3	24.5	28.1	3.7	3.3	4.0	63.6	61.2	65.9	32.8	30.1	35.5	1.7	0.5	2.8	1.3	0.4	2.1	2	1	2	94.3	92.6	96.0
5	Region 25	76.2	74.1	77.1	25.7	22.0	29.2	4.4	0.8	10.2	57.4	51.7	63.0	38.2	30.4	45.1	2.6	1.6	3.6	1.4	0.8	2.0	4	2	7	98.5	84.5	105.3
1	Region 26	76.8	76.8	76.8	25.4	25.4	25.4	5.0	5.0	5.0	64.5	64.5	64.5	30.5	30.5	30.5	1.4	1.4	1.4	1.2	1.2	1.2	2	2	2	91.0	91.0	91.0
1	Region 27	75.4	75.4	75.4	26.0	26.0	26.0	6.3	6.3	6.3	55.3	55.3	55.3	38.4	38.4	38.4	0.8	0.8	0.8	0.6	0.6	0.6	2	2	2	98.7	98.7	98.7
5	Region 28	75.7	75.2	76.5	24.3	22.3	25.6	3.7	2.2	6.9	57.5	54.6	63.8	38.8	29.3	42.9	2.5	1.4	4.3	1.5	0.8	2.5	4	1	10	95.9	92.8	99.0
2	Region 29	76.1	75.2	77.0	21.6	21.3	21.8	1.6	1.5	1.6	42.5	40.3	44.6	56.0	53.9	58.1	2.5	2.4	2.6	1.2	1.0	1.4	2	1	2	87.2	85.8	88.5
5	Region 30	74.0	72.6	75.9	22.0	20.7	22.8	3.3	1.5	4.3	49.6	34.1	66.2	47.1	30.2	64.4	2.5	2.2	3.4	1.3	1.0	1.7	6	1	16	85.5	81.7	89.7
5	Region 31	74.4	73.8	75.6	22.4	20.4	27.8	7.3	2.2	17.3	54.7	50.7	61.7	38.0	21.0	44.2	2.6	1.5	3.6	1.2	0.8	1.7	2	0	3	91.2	85.6	99.2
4	Region 32	72.8	71.2	74.1	21.2	18.6	22.6	5.9	1.9	8.4	49.0	44.9	52.4	45.1	39.6	53.2	2.9	2.2	3.5	1.0	0.8	1.3	3	1	5	82.0	75.5	87.9
3	Region 33	71.5	70.2	72.2	22.0	21.2	22.5	4.8	2.7	7.1	50.1	49.9	50.4	45.1	42.5	47.3	5.7	2.5	10.9	3.4	1.9	6.0	16	11	24	86.9	83.9	90.9
6	Region 34	74.2	73.2	75.9	23.4	18.5	28.6	7.3	1.4	14.3	55.1	41.0	63.4	37.6	22.3	57.6	2.3	1.0	3.6	1.2	0.7	2.0	3	0	11	89.8	81.5	101.2
60	**Ave YM 2**	**74.4**			**24.0**			**5.5**			**55.9**			**38.6**			**2.9**			**1.7**			**4**			**91.6**		
	Min YM 2		**70.2**			**18.5**			**0.7**			**34.1**			**14.4**			**0.5**			**0.4**			**0**			**75.5**	
	Max YM 2			**77.4**			**30.2**			**17.3**			**70.6**			**64.4**			**10.9**			**6.0**			**24**			**107.1**

TABLE 17: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2006/2007

(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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 3																												
1	Region 12	72.7	72.7	72.7	21.1	21.1	21.1	0.7	0.7	0.7	57.6	57.6	57.6	41.7	41.7	41.7	4.9	4.9	4.9	3.2	3.2	3.2	2	2	2	93.9	93.9	93.9
1	Region 13	72.0	72.0	72.0	20.7	20.7	20.7	13.1	13.1	13.1	64.4	64.4	64.4	22.5	22.5	22.5	2.9	2.9	2.9	1.7	1.7	1.7	1	1	1	93.7	93.7	93.7
2	Region 17	74.4	73.2	75.6	25.2	23.8	26.5	6.2	5.3	7.0	57.4	57.2	57.6	36.5	35.4	37.5	2.9	1.9	3.9	1.9	1.2	2.5	3	2	3	92.1	90.8	93.4
1	Region 19	72.2	72.2	72.2	16.6	16.6	16.6	0.8	0.8	0.8	22.1	22.1	22.1	77.1	77.1	77.1	6.1	6.1	6.1	1.6	1.6	1.6	0	0	0	88.7	88.7	88.7
1	Region 23	75.0	75.0	75.0	22.5	22.5	22.5	6.1	6.1	6.1	58.9	58.9	58.9	35.0	35.0	35.0	3.3	3.3	3.3	1.5	1.5	1.5	1	1	1	89.3	89.3	89.3
1	Region 35	79.0	79.0	79.0	17.6	17.6	17.6	0.0	0.0	0.0	17.1	17.1	17.1	82.9	82.9	82.9	1.9	1.9	1.9	0.6	0.6	0.6	1	1	1	121.6	121.6	121.6
7	**Ave YM 3**	**74.2**			**21.3**			**4.7**			**47.8**			**47.4**			**3.6**			**1.8**			**1**			**95.9**		
	Min YM 3		**72.0**			**16.6**			**0.0**			**17.1**			**22.5**			**1.9**			**0.6**			**0**			**88.7**	
	Max YM 3			**79.0**			**26.5**			**13.1**			**64.4**			**82.9**			**6.1**			**3.2**			**3**			**121.6**
GRADE: COM																												
3	Region 14	74.0	70.8	77.5	29.8	26.0	32.9	12.0	1.8	30.5	65.2	63.1	68.6	22.9	6.4	34.4	2.9	1.7	4.1	2.3	1.1	3.4	7	3	13	98.8	87.2	116.8
1	Region 15	73.0	73.0	73.0	33.2	33.2	33.2	23.5	23.5	23.5	61.7	61.7	61.7	14.8	14.8	14.8	3.1	3.1	3.1	2.4	2.4	2.4	14	14	14	101.2	101.2	101.2
2	Region 16	71.5	70.9	72.0	24.4	23.7	25.0	4.5	3.4	5.5	66.2	65.5	66.9	29.4	29.0	29.7	3.9	3.0	4.8	2.6	2.0	3.2	7	5	9	88.8	88.1	89.4
1	Region 25	76.3	76.3	76.3	25.1	25.1	25.1	5.8	5.8	5.8	63.3	63.3	63.3	30.9	30.9	30.9	1.9	1.9	1.9	1.0	1.0	1.0	1	1	1	106.4	106.4	106.4
1	Region 30	72.3	72.3	72.3	28.0	28.0	28.0	6.6	6.6	6.6	72.2	72.2	72.2	21.2	21.2	21.2	4.5	4.5	4.5	3.0	3.0	3.0	11	11	11	97.5	97.5	97.5
8	**Ave COM**	**73.3**			**28.1**			**10.1**			**65.6**			**24.3**			**3.3**			**2.3**			**8**			**97.4**		
	Min COM		**70.8**			**23.7**			**1.8**			**61.7**			**6.4**			**1.7**			**1.0**			**1**			**87.2**	
	Max COM			**77.5**			**33.2**			**30.5**			**72.2**			**34.4**			**4.8**			**3.4**			**14**			**116.8**
337	**Ave yellow maize**	**76.4**			**27.4**			**8.5**			**61.7**			**29.8**			**2.1**			**1.3**			**4**			**95.7**		
	Min yellow maize		**70.2**			**16.6**			**0.0**			**17.1**			**6.4**			**0.2**			**0.0**			**0**			**70.9**	
	Max yellow maize			**81.2**			**38.6**			**34.2**			**79.5**			**82.9**			**10.9**			**6.0**			**24**			**121.6**
900	**Ave maize**	**77.5**			**28.9**			**13.9**			**62.7**			**23.4**			**1.7**			**1.1**			**3**			**98.3**		
	Min maize		**68.1**			**16.6**			**0.0**			**16.7**			**0.8**			**0.0**			**0.0**			**0**			**70.9**	
	Max maize			**82.8**			**40.1**			**51.7**			**79.5**			**82.9**			**12.1**			**11.5**			**27**			**123.8**

TABLE 17: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE 2006/2007

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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
YELLOW																												
11	Region 10	78.3	76.5	79.7	34.2	31.6	38.6	6.7	3.3	10.2	68.6	49.2	74.2	24.7	15.9	47.1	1.0	0.4	1.6	0.8	0.4	1.3	5	2	7	93.9	88.8	100.0
25	Region 11	78.8	77.2	79.9	33.5	29.9	38.3	5.3	0.4	10.6	68.8	56.4	74.6	25.9	16.4	41.9	1.4	0.6	2.5	1.1	0.5	1.8	4	0	9	91.9	78.3	102.5
8	Region 12	75.9	72.7	79.2	27.7	21.1	34.8	7.1	0.7	14.1	66.7	57.6	72.2	26.2	17.6	41.7	3.5	1.9	5.4	2.4	1.3	3.2	6	2	15	97.9	92.3	106.0
8	Region 13	75.6	72.0	78.3	24.4	19.9	29.1	5.7	1.4	13.1	60.8	41.3	71.0	33.5	21.9	57.3	2.5	1.4	5.4	1.4	0.5	2.1	3	1	5	98.5	77.6	112.7
20	Region 14	77.1	70.8	80.3	29.0	25.3	35.1	12.1	1.8	30.5	63.9	53.5	73.1	24.0	6.4	41.3	2.3	0.5	4.1	1.5	0.4	3.4	5	1	14	104.0	87.2	116.8
10	Region 15	78.2	73.0	80.1	31.6	27.1	35.1	7.0	1.3	23.5	62.5	57.4	69.9	30.5	14.8	38.2	1.5	0.5	3.1	1.1	0.4	2.4	5	1	14	100.2	95.0	109.7
6	Region 16	73.8	70.9	75.2	26.7	23.7	30.2	7.9	3.4	16.0	66.8	65.1	69.6	25.4	14.4	29.7	3.2	1.8	4.8	2.3	1.2	3.7	10	4	16	96.6	88.1	104.7
10	Region 17	74.5	71.2	76.7	25.1	19.8	28.1	5.5	3.7	7.0	58.8	43.5	71.1	35.7	22.7	52.4	2.8	1.8	4.8	1.9	1.2	2.8	3	2	6	96.1	87.4	107.1
11	Region 18	76.2	75.0	77.2	27.1	22.8	30.0	9.8	1.7	21.1	59.5	51.2	66.6	30.7	19.7	47.1	1.7	0.2	2.8	1.0	0.0	1.9	3	0	7	92.3	87.3	97.4
10	Region 19	74.7	71.1	77.4	25.4	16.6	33.3	8.8	0.8	16.9	56.4	22.1	67.9	34.8	15.6	77.1	2.8	1.4	6.1	1.8	0.9	3.5	2	0	3	94.4	84.8	104.8
8	Region 20	76.3	74.9	77.1	27.7	20.2	34.2	10.2	3.0	21.6	59.0	44.1	68.5	30.8	13.4	51.6	1.8	1.0	2.9	1.2	0.8	1.7	3	1	5	95.6	88.5	99.8
5	Region 21	74.4	72.6	76.3	24.4	22.4	27.1	5.5	0.7	7.9	55.8	47.3	61.9	38.7	30.2	52.0	1.7	1.0	2.6	1.1	0.5	1.8	3	0	7	89.1	80.9	94.8
5	Region 22	76.2	74.7	77.0	29.5	25.8	32.6	8.1	5.6	10.9	66.6	59.6	76.0	25.3	15.7	33.4	1.8	1.0	3.2	1.2	0.8	2.3	2	1	3	93.5	88.1	96.0
11	Region 23	77.1	75.0	79.2	27.5	22.5	33.4	7.6	4.3	11.1	66.5	58.9	75.4	25.9	13.5	35.0	2.1	1.2	3.3	1.3	0.7	2.0	3	1	8	97.0	84.6	107.0
14	Region 24	77.0	74.8	81.2	28.9	22.6	36.2	6.5	0.4	19.9	64.0	51.5	79.5	29.5	11.7	44.5	1.4	0.3	2.8	0.9	0.2	2.1	3	0	8	97.2	82.3	114.7
18	Region 25	76.6	74.1	78.1	25.5	22.0	29.2	5.3	0.8	10.2	59.4	51.7	63.7	35.4	29.3	45.1	2.3	1.0	3.9	1.3	0.6	2.0	3	1	8	97.3	82.3	106.8
11	Region 26	77.7	76.5	79.7	26.4	24.4	30.0	6.2	3.7	14.9	61.6	50.0	71.1	32.2	22.6	46.0	1.7	0.4	4.0	1.2	0.4	3.0	2	0	6	104.1	91.0	118.7
5	Region 27	75.9	75.4	76.5	25.5	24.6	26.0	8.2	4.3	11.1	59.6	54.6	63.1	32.1	25.8	41.1	1.2	0.8	1.5	0.9	0.6	1.2	3	1	6	98.6	94.8	100.9
24	Region 28	77.2	74.7	80.6	27.3	20.3	33.3	8.8	2.2	17.8	64.5	43.4	73.6	26.7	10.9	53.8	1.8	0.3	6.5	1.1	0.3	3.3	5	1	16	100.1	89.2	117.8
18	Region 29	76.8	74.4	78.8	25.9	19.1	30.8	10.5	1.5	26.2	60.0	40.3	69.1	29.6	13.3	58.1	1.7	0.4	4.5	1.0	0.4	2.8	2	0	9	92.9	83.9	101.6
26	Region 30	75.3	70.5	78.4	25.0	19.9	30.9	9.8	0.3	28.8	56.8	34.1	72.2	33.4	13.7	64.4	2.6	0.7	5.6	1.5	0.5	3.3	6	0	21	94.7	70.9	111.7
14	Region 31	75.4	73.8	77.5	24.6	20.4	28.0	11.8	2.2	18.8	60.0	50.7	66.2	28.2	19.0	44.2	2.0	0.8	3.6	1.1	0.5	1.7	2	0	4	93.3	85.6	100.8
16	Region 32	75.1	71.2	79.8	25.1	18.6	36.7	10.5	1.9	18.5	59.1	44.9	74.3	30.4	18.1	53.2	1.9	0.7	3.5	0.9	0.1	1.4	3	1	6	86.8	75.5	104.5
19	Region 33	75.0	70.2	78.1	26.4	21.2	32.4	9.8	1.5	26.3	60.0	49.9	68.0	30.2	9.7	47.3	3.2	1.0	10.9	2.1	0.6	6.0	8	1	24	92.0	77.7	113.7
11	Region 34	74.5	72.5	76.5	24.2	18.5	28.6	7.6	1.4	14.3	57.5	41.0	63.8	34.9	22.3	57.6	2.3	1.0	4.5	1.3	0.3	2.7	5	0	11	90.2	81.5	108.3
9	Region 35	77.9	75.0	80.2	30.7	17.6	37.9	11.0	0.0	34.2	59.6	17.1	77.0	29.4	9.3	82.9	2.4	1.4	3.3	1.8	0.6	3.0	5	1	10	100.8	76.2	121.6
4	Region 36	77.0	76.3	77.6	27.8	25.9	30.2	12.6	8.8	16.1	60.6	57.0	62.1	26.8	22.1	32.0	1.7	1.2	2.2	1.2	0.6	1.8	8	2	15	96.7	94.0	99.2
337	**Ave yellow**	**76.4**			**27.4**			**8.5**			**61.7**			**29.8**			**2.1**			**1.3**			**4**			**95.7**		
	Min yellow		**70.2**			**16.6**			**0.0**			**17.1**			**6.4**			**0.2**			**0.0**			**0**			**70.9**	
	Max yellow			**81.2**			**38.6**			**34.2**			**79.5**			**82.9**			**10.9**			**6.0**			**24**			**121.6**

TABLE 18: PHYSICAL QUALITY FACTORS OF MAIZE IN TOTAL FOR 2006/2007

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 8mm sieve			Below 8 mm sieve			< 6.3mm sieve			< 4.75mm sieve								
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
WHITE AND YELLOW																												
1	Region 8	80.1	80.1	80.1	32.6	32.6	32.6	15.0	15.0	15.0	52.6	52.6	52.6	32.4	32.4	32.4	0.3	0.3	0.3	0.3	0.3	0.3	2	2	2	111.1	111.1	111.1
12	Region 10	78.5	76.5	80.6	34.1	31.6	38.6	6.4	2.4	10.2	66.8	47.0	74.2	26.9	15.9	50.6	1.0	0.4	1.6	0.8	0.4	1.3	5	1	7	94.9	88.8	105.7
34	Region 11	79.5	77.2	82.8	33.6	29.8	38.3	7.4	0.4	21.5	65.9	51.4	74.6	26.7	16.4	41.9	1.3	0.2	2.5	0.9	0.2	1.8	4	0	9	96.0	78.3	111.5
24	Region 12	77.7	72.7	82.5	30.1	21.1	35.2	15.2	0.7	33.6	65.4	51.7	74.9	19.5	8.5	41.7	2.5	1.0	5.4	1.8	0.5	3.2	4	1	15	102.7	90.6	112.0
21	Region 13	77.0	72.0	79.9	27.1	19.4	35.2	10.2	1.4	26.4	64.6	41.3	73.8	25.3	4.9	57.3	2.3	0.8	5.4	1.4	0.4	2.7	3	0	5	103.4	77.6	122.9
59	Region 14	78.3	70.8	81.9	29.4	25.3	36.0	14.8	1.8	30.5	64.9	53.5	73.1	20.3	6.4	41.3	1.9	0.5	12.1	1.4	0.3	11.5	4	0	14	104.5	85.8	116.8
44	Region 15	79.3	73.0	81.6	32.1	27.1	37.1	18.2	1.3	37.0	65.0	53.6	71.3	16.8	3.4	38.2	1.4	0.4	5.0	1.0	0.2	4.0	4	0	14	103.6	81.4	112.9
21	Region 16	75.4	68.6	80.7	28.4	20.9	38.2	13.9	1.6	37.7	64.6	55.9	72.7	21.5	6.4	36.8	2.5	0.3	5.3	1.6	0.3	3.7	5	0	16	98.2	73.7	116.2
31	Region 17	77.0	71.2	81.0	27.7	19.8	32.7	10.5	3.7	22.7	62.9	43.5	77.6	26.5	7.5	52.4	2.2	0.8	4.8	1.5	0.5	2.8	3	0	6	101.7	87.4	118.2
28	Region 18	77.4	75.0	79.6	28.0	22.8	32.3	13.3	1.7	25.0	61.5	51.2	68.2	25.3	8.9	47.1	1.2	0.2	2.8	0.7	0.0	1.9	2	0	7	96.4	87.3	107.7
28	Region 19	76.1	71.1	79.6	27.2	16.6	36.3	13.8	0.8	39.3	59.0	22.1	72.8	27.2	8.3	77.1	2.4	0.3	6.1	1.6	0.1	3.5	2	0	11	99.3	84.8	107.6
17	Region 20	76.7	72.3	79.7	28.7	20.2	36.1	14.1	3.0	40.9	61.8	44.1	72.9	24.1	5.1	51.6	1.7	0.4	5.5	1.1	0.4	3.7	3	0	16	96.3	86.1	109.0
30	Region 21	76.4	72.1	79.6	27.3	20.5	34.7	11.5	0.2	30.5	61.8	45.7	74.3	26.7	7.3	53.2	1.6	0.4	4.9	1.0	0.2	3.0	3	0	7	93.6	71.2	108.0
38	Region 22	78.2	74.7	79.8	31.3	25.8	34.8	20.1	3.8	34.0	63.4	49.7	76.0	16.5	3.6	46.5	1.2	0.1	3.2	0.8	0.1	2.3	2	0	8	95.6	88.1	102.0
110	Region 23	78.7	73.4	81.1	31.6	20.5	38.5	21.5	1.2	42.9	62.4	16.7	76.2	16.2	4.5	81.6	1.4	0.2	4.6	1.0	0.2	3.0	3	0	24	99.3	83.1	114.9
50	Region 24	77.8	74.1	81.7	28.3	22.6	36.2	12.0	0.4	25.2	65.1	51.5	79.5	22.9	1.5	44.5	1.4	0.1	3.9	0.9	0.0	2.3	4	0	27	96.9	79.4	114.7
36	Region 25	77.5	74.1	82.5	26.6	22.0	31.4	6.9	0.8	14.9	63.1	51.7	73.7	30.1	15.8	45.1	1.9	0.3	3.9	1.1	0.3	2.0	3	0	13	98.3	82.3	123.6
19	Region 26	77.5	68.1	80.6	27.0	24.4	30.0	8.1	2.5	22.5	61.9	50.0	71.1	30.0	13.4	46.0	2.2	0.4	9.1	1.5	0.1	6.9	3	0	11	102.4	81.3	118.7
12	Region 27	77.1	75.4	78.5	26.0	24.6	28.2	7.3	3.4	11.1	62.1	53.3	69.2	30.7	25.0	43.3	1.0	0.6	1.5	0.6	0.2	1.2	3	0	7	102.4	94.8	109.2
41	Region 28	77.7	74.7	81.0	27.9	20.3	36.8	10.6	2.2	26.2	65.6	43.4	78.2	23.8	9.2	53.8	1.5	0.2	6.5	0.9	0.2	3.3	4	0	16	100.1	86.7	117.8
33	Region 29	77.7	74.4	81.0	27.1	19.1	34.7	13.5	1.5	26.2	61.6	40.3	69.1	24.9	8.0	58.1	1.4	0.1	4.5	0.8	0.1	2.8	2	0	9	94.5	81.7	107.9
47	Region 30	76.1	70.5	79.4	26.7	19.9	35.1	11.1	0.3	39.1	60.8	34.1	74.5	28.0	5.4	64.4	2.1	0.3	5.6	1.2	0.2	3.3	5	0	21	96.9	70.9	111.7
21	Region 31	76.4	73.5	81.1	26.8	20.4	37.8	16.3	2.2	37.2	59.5	50.6	67.2	24.2	5.9	44.2	1.7	0.0	3.6	1.0	0.0	1.7	2	0	4	94.4	85.6	104.5
37	Region 32	76.2	71.2	79.8	27.3	18.6	36.7	13.3	1.9	32.0	61.6	44.9	74.3	25.1	10.9	53.2	1.4	0.5	3.5	0.7	0.1	1.4	2	0	6	90.4	75.5	104.5
40	Region 33	75.2	69.5	79.0	27.1	19.7	39.7	12.0	0.7	33.3	60.1	38.7	76.0	27.9	6.9	59.0	2.6	0.0	10.9	1.7	0.0	6.0	7	0	24	95.6	77.7	115.0
36	Region 34	75.9	72.3	79.0	26.5	18.5	33.7	14.0	1.4	31.9	60.0	27.7	74.2	26.0	10.4	69.1	1.6	0.2	4.5	0.9	0.1	2.7	4	0	11	92.8	81.5	108.3
19	Region 35	78.5	75.0	81.9	31.3	17.6	40.1	16.0	0.0	51.7	58.4	17.1	77.0	25.6	0.8	82.9	2.1	0.3	3.6	1.6	0.0	3.0	5	1	12	104.4	76.2	123.8
11	Region 36	77.9	76.3	79.0	29.9	25.9	32.9	15.9	8.8	35.6	59.7	51.3	67.5	24.4	13.1	32.0	1.2	0.4	2.2	0.7	0.1	1.8	5	0	15	100.3	94.0	104.9
900	**Ave w & y**	**77.5**			**28.9**			**13.9**			**62.7**			**23.4**			**1.7**			**1.1**			**3**			**98.3**		
Min white & yellow			**68.1**			**16.6**			**0.0**			**16.7**			**0.8**			**0.0**			**0.0**			**0**			**70.9**	
Max white & yellow				**82.8**			**40.1**			**51.7**			**79.5**			**82.9**			**12.1**			**11.5**			**27**			**123.8**

TABLE 19: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2006/2007)

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 8	12.4	12.4	12.4	9.8	9.8	9.8	27.1	27.1	27.1	30.3	30.3	30.3	20.3	20.3	20.3	79.7	79.7	79.7	23.9	23.9	23.9	15.4	15.4	15.4
1	Region 10	13.0	13.0	13.0	9.6	9.6	9.6	27.1	27.1	27.1	29.1	29.1	29.1	21.2	21.2	21.2	78.8	78.8	78.8	24.9	24.9	24.9	13.9	13.9	13.9
9	Region 11	11.6	10.5	12.5	9.6	9.0	10.6	25.8	22.6	28.6	31.6	30.4	33.3	21.5	19.4	24.5	78.5	75.5	80.6	26.6	16.7	35.0	18.2	10.1	28.5
6	Region 12	12.2	9.8	16.2	9.7	9.1	10.5	25.9	23.3	27.8	30.5	25.4	33.0	21.6	20.3	24.6	78.4	75.4	79.7	29.7	26.6	34.5	20.4	16.0	26.4
4	Region 13	11.5	10.3	12.5	9.1	8.8	9.5	26.7	26.1	27.2	31.6	29.1	33.5	21.0	20.2	22.9	79.0	77.1	79.8	31.2	29.5	32.8	21.2	17.9	23.2
28	Region 14	12.4	9.6	13.9	9.8	8.8	11.4	27.7	25.1	30.4	29.4	26.0	33.4	20.7	19.0	23.0	79.3	77.0	81.0	29.0	25.7	35.0	20.6	12.1	24.5
27	Region 15	12.1	10.6	14.6	9.9	9.3	11.4	27.6	24.1	31.0	30.3	25.3	34.2	20.1	18.1	24.0	79.9	76.0	81.9	26.4	13.9	32.6	18.7	15.0	22.1
11	Region 16	12.6	10.8	14.0	9.7	8.8	10.3	27.6	25.4	30.5	29.4	24.9	33.8	20.7	18.5	24.1	79.3	75.9	81.5	28.7	24.2	38.1	20.4	16.7	29.0
7	Region 17	11.0	9.6	11.8	9.4	8.4	11.1	26.6	23.7	28.7	31.4	27.8	33.4	21.6	19.1	24.5	78.4	75.5	80.9	32.2	28.5	36.8	24.7	21.2	28.3
17	Region 18	11.7	10.8	13.1	9.5	8.6	11.7	26.3	21.8	29.7	30.5	26.7	34.6	22.0	19.1	25.0	78.0	75.0	80.9	30.7	27.2	33.3	22.0	18.2	26.5
7	Region 19	11.9	11.1	12.7	9.5	8.6	10.6	25.9	23.7	28.0	30.5	28.3	31.9	22.3	20.8	24.3	77.7	75.7	79.2	30.7	28.3	32.6	21.4	19.2	23.5
6	Region 20	13.4	12.3	16.4	9.8	9.2	11.1	24.6	22.7	27.4	29.7	28.5	31.1	22.5	20.3	23.6	77.5	76.4	79.7	32.2	30.1	34.9	22.4	19.4	24.7
14	Region 21	11.9	9.9	13.5	9.3	9.1	9.9	26.8	24.7	30.3	30.2	26.5	32.7	21.8	20.3	24.6	78.2	75.4	79.7	30.4	26.0	36.7	21.1	17.2	25.3
31	Region 22	12.6	10.7	13.8	9.9	9.2	11.1	26.9	24.2	29.2	29.5	25.7	32.2	21.1	18.2	23.0	78.9	77.0	81.8	29.3	26.1	35.5	20.6	17.2	24.2
89	Region 23	12.3	5.9	14.4	10.1	8.7	49.6	26.5	14.6	29.9	30.1	17.0	34.8	20.9	12.9	24.2	79.1	75.8	87.1	30.1	22.5	36.5	21.3	13.4	26.9
31	Region 24	11.7	9.5	13.8	9.7	8.7	11.2	26.9	24.0	29.7	29.6	25.3	32.6	22.2	20.4	25.1	77.8	74.9	79.6	31.8	26.3	36.4	22.7	19.7	27.6
18	Region 25	12.9	7.3	14.6	9.7	8.1	11.1	27.0	23.7	30.0	28.8	24.8	37.6	21.6	19.9	23.9	78.4	76.1	80.1	29.6	22.0	34.0	20.6	13.9	24.7
7	Region 26	14.3	8.8	27.8	9.3	8.3	10.1	24.9	20.7	28.3	30.1	21.0	35.3	21.5	18.7	23.2	78.5	76.8	81.3	30.7	26.5	37.3	21.0	17.1	29.5
7	Region 27	10.6	9.7	13.5	8.7	8.5	9.6	26.8	24.7	28.6	31.5	28.8	33.6	22.4	19.6	23.5	77.6	76.5	80.4	29.6	27.1	35.1	20.0	17.2	21.2
16	Region 28	13.2	11.5	14.8	9.8	9.3	10.6	28.3	25.2	31.6	28.9	26.0	31.2	19.8	17.8	21.7	80.2	78.3	82.2	27.6	25.0	31.0	19.9	15.6	25.1
15	Region 29	14.0	12.3	16.3	9.8	9.2	10.3	28.1	25.0	30.2	27.8	24.8	30.0	20.4	18.2	23.8	79.6	76.2	81.8	27.3	24.1	34.5	17.3	12.9	21.1
20	Region 30	13.1	11.4	15.0	9.7	9.1	10.6	26.1	22.5	28.3	27.9	24.8	32.2	23.2	20.9	27.3	76.8	72.7	79.1	30.0	24.1	33.6	20.8	15.2	26.8
6	Region 31	13.5	12.3	14.8	10.0	9.6	10.4	27.6	26.8	29.1	28.9	26.3	30.4	20.0	18.8	21.4	80.0	78.6	81.2	25.8	21.8	31.9	16.3	11.8	22.9
20	Region 32	13.5	12.3	14.7	9.7	9.1	10.4	26.8	24.6	30.3	28.5	26.6	31.4	21.6	18.6	24.2	78.4	75.8	81.4	28.7	21.4	34.3	18.6	12.4	25.6
18	Region 33	13.5	9.8	15.4	10.3	9.5	11.3	26.4	24.1	28.7	27.0	23.6	29.2	22.7	18.2	25.1	77.3	74.9	81.8	31.5	26.7	37.9	21.8	18.3	29.6
22	Region 34	13.6	11.7	15.9	10.0	9.3	11.1	27.2	24.5	29.5	28.1	24.2	30.5	21.2	18.2	23.1	78.8	76.9	81.8	32.6	22.6	39.6	21.7	9.7	28.3
10	Region 35	11.8	8.4	13.0	9.4	8.5	10.0	26.6	25.1	29.7	29.4	26.9	34.6	22.8	19.4	25.9	77.2	74.1	80.6	27.7	19.2	33.2	20.1	12.7	25.0
7	Region 36	12.5	11.8	13.1	9.6	9.5	9.9	24.7	23.3	26.4	30.9	29.3	32.9	22.3	20.4	24.4	77.7	75.6	79.6	30.2	27.9	33.5	18.7	15.9	23.6
455	**Ave WM 1**	**12.5**			**9.8**			**26.8**			**29.5**			**21.4**			**78.6**			**29.6**			**20.6**		
	Min WM 1		**5.9**			**8.1**			**14.6**			**17.0**			**12.9**			**72.7**			**13.9**			**9.7**	
	Max WM 1			**27.8**			**49.6**			**31.6**			**37.6**			**27.3**			**87.1**			**39.6**			**29.6**

TABLE 19: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2006/2007) (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																									
6	Region 12	11.1	10.3	12.6	9.5	9.2	10.0	26.3	25.1	27.7	31.4	30.0	32.4	21.6	20.4	22.6	78.4	77.4	79.6	29.2	27.1	33.6	18.9	17.4	20.4
6	Region 13	11.6	8.4	15.3	9.3	8.8	10.2	26.0	23.1	29.6	30.8	26.2	36.2	22.3	20.5	24.5	77.7	75.5	79.5	28.1	23.8	32.6	19.6	15.9	23.2
7	Region 14	10.7	9.5	11.3	9.2	8.8	9.7	26.4	25.4	27.9	32.3	30.2	33.4	21.4	20.2	23.3	78.6	76.7	79.8	27.8	25.0	30.1	20.2	16.8	22.3
2	Region 15	12.7	11.6	13.9	9.9	9.4	10.4	27.1	25.2	29.0	27.6	26.4	28.8	22.7	21.3	24.0	77.3	76.0	78.7	27.6	27.3	27.9	18.9	17.2	20.7
1	Region 16	14.5	14.5	14.5	9.8	9.8	9.8	24.2	24.2	24.2	23.8	23.8	23.8	27.6	27.6	27.6	72.4	72.4	72.4	35.8	35.8	35.8	24.3	24.3	24.3
8	Region 17	9.9	8.6	11.2	9.0	8.5	9.5	26.9	24.6	30.1	32.7	29.0	35.6	21.6	20.0	23.8	78.4	76.2	80.0	28.3	26.2	31.9	20.1	16.9	22.6
8	Region 19	10.8	9.9	12.9	9.3	8.9	10.2	25.9	24.2	30.7	32.0	29.0	34.1	22.2	19.8	23.2	77.8	76.8	80.2	30.6	28.0	33.0	22.9	20.6	25.0
1	Region 20	11.6	11.6	11.6	9.7	9.7	9.7	26.2	26.2	26.2	31.0	31.0	31.0	21.4	21.4	21.4	78.6	78.6	78.6	25.9	25.9	25.9	18.7	18.7	18.7
9	Region 21	11.9	8.9	15.4	9.8	9.1	10.5	25.5	23.3	27.5	29.6	25.7	32.4	23.2	21.6	26.3	76.8	73.7	78.4	31.4	28.0	35.2	21.5	18.2	24.7
1	Region 22	11.9	11.9	11.9	9.8	9.8	9.8	27.0	27.0	27.0	30.5	30.5	30.5	20.7	20.7	20.7	79.3	79.3	79.3	29.7	29.7	29.7	25.3	25.3	25.3
8	Region 23	11.6	10.7	12.4	9.4	8.5	10.5	26.5	24.8	27.6	31.8	28.8	35.6	20.7	19.1	23.2	79.3	76.8	80.9	28.1	20.6	36.5	20.4	11.9	29.0
3	Region 24	11.8	9.9	14.1	9.3	9.0	9.6	26.6	24.5	28.5	29.6	26.3	32.3	22.7	20.5	25.5	77.3	74.5	79.5	29.7	25.5	34.2	22.5	20.4	24.8
1	Region 28	12.8	12.8	12.8	9.7	9.7	9.7	26.8	26.8	26.8	29.9	29.9	29.9	20.9	20.9	20.9	79.1	79.1	79.1	27.0	27.0	27.0	16.7	16.7	16.7
1	Region 30	15.3	15.3	15.3	10.0	10.0	10.0	24.1	24.1	24.1	25.9	25.9	25.9	24.7	24.7	24.7	75.3	75.3	75.3	25.5	25.5	25.5	18.7	18.7	18.7
1	Region 31	11.8	11.8	11.8	9.1	9.1	9.1	25.8	25.8	25.8	28.2	28.2	28.2	25.1	25.1	25.1	74.9	74.9	74.9	21.0	21.0	21.0	6.7	6.7	6.7
1	Region 33	13.1	13.1	13.1	10.0	10.0	10.0	25.6	25.6	25.6	25.5	25.5	25.5	25.7	25.7	25.7	74.3	74.3	74.3	25.4	25.4	25.4	16.4	16.4	16.4
2	Region 34	13.5	13.4	13.6	10.1	10.1	10.2	26.5	26.4	26.5	27.8	26.4	29.2	22.1	20.9	23.3	77.9	76.7	79.1	26.5	24.0	29.1	16.2	12.0	20.4
66	**Ave WM 2**	**11.4**			**9.4**			**26.2**			**30.8**			**22.1**			**77.9**			**28.8**			**20.3**		
	Min WM 2		**8.4**			**8.5**			**23.1**			**23.8**			**19.1**			**72.4**			**20.6**			**6.7**	
	Max WM 2			**15.4**			**10.5**			**30.7**			**36.2**			**27.6**			**80.9**			**36.5**			**29.0**

TABLE 19: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2006/2007) (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																									
4	Region 12	11.2	10.2	11.7	9.3	8.8	9.8	26.2	24.9	28.2	31.8	29.9	34.3	21.5	19.8	23.7	78.5	76.3	80.2	28.4	25.9	34.3	17.2	13.2	23.2
3	Region 13	10.1	9.4	11.0	8.9	8.6	9.4	27.3	26.0	29.2	33.0	31.6	34.5	20.6	19.7	21.2	79.4	78.8	80.3	25.8	23.5	29.5	15.5	14.1	18.0
4	Region 14	11.4	10.0	14.6	9.7	9.0	10.2	25.5	22.3	27.7	30.1	26.4	32.4	23.3	21.0	26.5	76.7	73.5	79.0	29.0	27.5	31.8	19.7	18.2	21.5
4	Region 15	12.3	9.7	15.1	9.7	9.2	10.8	25.4	21.8	28.6	29.9	25.4	34.3	22.6	19.6	25.3	77.4	74.7	80.4	27.1	24.5	30.4	16.6	13.2	23.2
3	Region 16	14.9	14.8	15.1	9.8	9.7	10.0	22.4	21.1	23.3	25.2	24.5	25.9	27.7	27.5	28.0	72.3	72.0	72.5	32.9	31.2	35.7	22.1	18.8	25.1
6	Region 17	10.8	8.9	12.1	9.1	8.6	9.3	25.7	23.4	27.6	32.1	30.7	34.5	22.3	20.6	24.7	77.7	75.3	79.4	26.6	22.8	27.9	20.1	18.0	22.1
3	Region 19	12.0	10.4	14.7	9.5	9.1	10.4	25.0	24.4	25.5	29.3	27.3	30.9	24.2	23.2	25.3	75.8	74.7	76.8	29.4	27.5	31.0	20.3	18.6	22.5
2	Region 20	12.1	11.8	12.3	9.5	9.5	9.6	24.3	22.4	26.1	29.6	29.2	30.0	24.5	22.5	26.5	75.5	73.5	77.5	29.0	28.1	30.0	20.2	20.0	20.5
1	Region 21	13.8	13.8	13.8	9.8	9.8	9.8	26.0	26.0	26.0	27.8	27.8	27.8	22.6	22.6	22.6	77.4	77.4	77.4	32.3	32.3	32.3	21.1	21.1	21.1
1	Region 22	10.9	10.9	10.9	9.3	9.3	9.3	24.2	24.2	24.2	33.9	33.9	33.9	21.7	21.7	21.7	78.3	78.3	78.3	29.9	29.9	29.9	23.8	23.8	23.8
2	Region 23	11.0	10.6	11.5	9.9	9.7	10.1	26.8	25.5	28.0	32.3	31.7	32.9	20.0	18.4	21.6	80.0	78.4	81.6	28.8	26.4	31.2	20.4	19.7	21.0
2	Region 24	11.4	11.0	11.8	9.4	9.4	9.5	27.0	26.8	27.2	31.0	30.9	31.0	21.2	21.0	21.4	78.8	78.6	79.0	30.3	27.1	33.5	20.4	20.0	20.8
1	Region 32	12.4	12.4	12.4	9.4	9.4	9.4	23.3	23.3	23.3	30.0	30.0	30.0	24.9	24.9	24.9	75.1	75.1	75.1	19.2	19.2	19.2	5.4	5.4	5.4
1	Region 33	15.1	15.1	15.1	10.1	10.1	10.1	26.2	26.2	26.2	23.7	23.7	23.7	25.0	25.0	25.0	75.0	75.0	75.0	35.5	35.5	35.5	20.3	20.3	20.3
1	Region 34	12.3	12.3	12.3	9.7	9.7	9.7	25.6	25.6	25.6	31.6	31.6	31.6	20.8	20.8	20.8	79.2	79.2	79.2	33.6	33.6	33.6	26.5	26.5	26.5
38	**Ave WM 3**	**11.8**			**9.5**			**25.5**			**30.4**			**22.8**			**77.2**			**28.7**			**19.2**		
	Min WM 3		**8.9**			**8.6**			**21.1**			**23.7**			**18.4**			**72.0**			**19.2**			**5.4**	
	Max WM 3			**15.1**			**10.8**			**29.2**			**34.5**			**28.0**			**81.6**			**35.7**			**26.5**
GRADE: COM																									
1	Region 15	10.4	10.4	10.4	9.5	9.5	9.5	25.8	25.8	25.8	33.4	33.4	33.4	20.9	20.9	20.9	79.1	79.1	79.1	29.5	29.5	29.5	22.0	22.0	22.0
1	Region 21	13.7	13.7	13.7	10.6	10.6	10.6	25.5	25.5	25.5	28.2	28.2	28.2	22.1	22.1	22.1	77.9	77.9	77.9	27.4	27.4	27.4	8.9	8.9	8.9
1	Region 26	17.5	17.5	17.5	9.8	9.8	9.8	21.5	21.5	21.5	23.7	23.7	23.7	27.4	27.4	27.4	72.6	72.6	72.6	29.8	29.8	29.8	20.3	20.3	20.3
1	Region 33	14.7	14.7	14.7	9.7	9.7	9.7	23.9	23.9	23.9	26.7	26.7	26.7	25.0	25.0	25.0	75.0	75.0	75.0	12.4	12.4	12.4	23.3	23.3	23.3
4	**Ave COM**	**14.1**			**9.9**			**24.2**			**28.0**			**23.8**			**76.2**			**24.8**			**18.6**		
	Min COM		**10.4**			**9.5**			**21.5**			**23.7**			**20.9**			**72.6**			**12.4**			**8.9**	
	Max COM			**17.5**			**10.6**			**25.8**			**33.4**			**27.4**			**79.1**			**29.8**			**23.3**
563	**Ave white maize**	**12.4**			**9.7**			**26.6**			**29.7**			**21.6**			**78.4**			**29.5**			**20.5**		
	Min white maize		**5.9**			**8.1**			**14.6**			**17.0**			**12.9**			**72.0**			**12.4**			**5.4**	
	Max white maize			**27.8**			**49.6**			**31.6**			**37.6**			**28.0**			**87.1**			**39.6**			**29.6**

TABLE 19: ROFF MILLING AND WHITENESS INDEX OF WHITE MAIZE (2006/2007)

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 8	12.4	12.4	12.4	9.8	9.8	9.8	27.1	27.1	27.1	30.3	30.3	30.3	20.3	20.3	20.3	79.7	79.7	79.7	23.9	23.9	23.9	15.4	15.4	15.4
1	Region 10	13.0	13.0	13.0	9.6	9.6	9.6	27.1	27.1	27.1	29.1	29.1	29.1	21.2	21.2	21.2	78.8	78.8	78.8	24.9	24.9	24.9	13.9	13.9	13.9
9	Region 11	11.6	10.5	12.5	9.6	9.0	10.6	25.8	22.6	28.6	31.6	30.4	33.3	21.5	19.4	24.5	78.5	75.5	80.6	26.6	16.7	35.0	18.2	10.1	28.5
16	Region 12	11.5	9.8	16.2	9.5	8.8	10.5	26.2	23.3	28.2	31.2	25.4	34.3	21.6	19.8	24.6	78.4	75.4	80.2	29.2	25.9	34.5	19.1	13.2	26.4
13	Region 13	11.2	8.4	15.3	9.2	8.6	10.2	26.5	23.1	29.6	31.6	26.2	36.2	21.5	19.7	24.5	78.5	75.5	80.3	28.5	23.5	32.8	19.2	14.1	23.2
39	Region 14	12.0	9.5	14.6	9.7	8.8	11.4	27.2	22.3	30.4	30.0	26.0	33.4	21.1	19.0	26.5	78.9	73.5	81.0	28.8	25.0	35.0	20.4	12.1	24.5
34	Region 15	12.1	9.7	15.1	9.9	9.2	11.4	27.2	21.8	31.0	30.2	25.3	34.3	20.6	18.1	25.3	79.4	74.7	81.9	26.6	13.9	32.6	18.5	13.2	23.2
15	Region 16	13.2	10.8	15.1	9.7	8.8	10.3	26.3	21.1	30.5	28.2	23.8	33.8	22.6	18.5	28.0	77.4	72.0	81.5	30.0	24.2	38.1	21.0	16.7	29.0
21	Region 17	10.5	8.6	12.1	9.2	8.4	11.1	26.5	23.4	30.1	32.1	27.8	35.6	21.8	19.1	24.7	78.2	75.3	80.9	29.1	22.8	36.8	21.6	16.9	28.3
17	Region 18	11.7	10.8	13.1	9.5	8.6	11.7	26.3	21.8	29.7	30.5	26.7	34.6	22.0	19.1	25.0	78.0	75.0	80.9	30.7	27.2	33.3	22.0	18.2	26.5
18	Region 19	11.4	9.9	14.7	9.4	8.6	10.6	25.7	23.7	30.7	30.9	27.3	34.1	22.6	19.8	25.3	77.4	74.7	80.2	30.4	27.5	33.0	21.9	18.6	25.0
9	Region 20	12.9	11.6	16.4	9.7	9.2	11.1	24.7	22.4	27.4	29.8	28.5	31.1	22.8	20.3	26.5	77.2	73.5	79.7	30.8	25.9	34.9	21.5	18.7	24.7
25	Region 21	12.0	8.9	15.4	9.6	9.1	10.6	26.3	23.3	30.3	29.8	25.7	32.7	22.3	20.3	26.3	77.7	73.7	79.7	30.7	26.0	36.7	20.8	8.9	25.3
33	Region 22	12.5	10.7	13.8	9.8	9.2	11.1	26.8	24.2	29.2	29.7	25.7	33.9	21.1	18.2	23.0	78.9	77.0	81.8	29.4	26.1	35.5	20.9	17.2	25.3
99	Region 23	12.2	5.9	14.4	10.1	8.5	49.6	26.5	14.6	29.9	30.3	17.0	35.6	20.9	12.9	24.2	79.1	75.8	87.1	29.9	20.6	36.5	21.2	11.9	29.0
36	Region 24	11.7	9.5	14.1	9.6	8.7	11.2	26.8	24.0	29.7	29.6	25.3	32.6	22.2	20.4	25.5	77.8	74.5	79.6	31.5	25.5	36.4	22.6	19.7	27.6
18	Region 25	12.9	7.3	14.6	9.7	8.1	11.1	27.0	23.7	30.0	28.8	24.8	37.6	21.6	19.9	23.9	78.4	76.1	80.1	29.6	22.0	34.0	20.6	13.9	24.7
8	Region 26	14.7	8.8	27.8	9.3	8.3	10.1	24.5	20.7	28.3	29.3	21.0	35.3	22.2	18.7	27.4	77.8	72.6	81.3	30.6	26.5	37.3	20.9	17.1	29.5
7	Region 27	10.6	9.7	13.5	8.7	8.5	9.6	26.8	24.7	28.6	31.5	28.8	33.6	22.4	19.6	23.5	77.6	76.5	80.4	29.6	27.1	35.1	20.0	17.2	21.2
17	Region 28	13.2	11.5	14.8	9.8	9.3	10.6	28.2	25.2	31.6	28.9	26.0	31.2	19.9	17.8	21.7	80.1	78.3	82.2	27.6	25.0	31.0	19.7	15.6	25.1
15	Region 29	14.0	12.3	16.3	9.8	9.2	10.3	28.1	25.0	30.2	27.8	24.8	30.0	20.4	18.2	23.8	79.6	76.2	81.8	27.3	24.1	34.5	17.3	12.9	21.1
21	Region 30	13.2	11.4	15.3	9.7	9.1	10.6	26.0	22.5	28.3	27.8	24.8	32.2	23.3	20.9	27.3	76.7	72.7	79.1	29.8	24.1	33.6	20.7	15.2	26.8
7	Region 31	13.3	11.8	14.8	9.9	9.1	10.4	27.3	25.8	29.1	28.8	26.3	30.4	20.8	18.8	25.1	79.2	74.9	81.2	25.1	21.0	31.9	14.9	6.7	22.9
21	Region 32	13.4	12.3	14.7	9.7	9.1	10.4	26.7	23.3	30.3	28.6	26.6	31.4	21.7	18.6	24.9	78.3	75.1	81.4	28.2	19.2	34.3	17.9	5.4	25.6
21	Region 33	13.6	9.8	15.4	10.3	9.5	11.3	26.3	23.9	28.7	26.8	23.6	29.2	23.1	18.2	25.7	76.9	74.3	81.8	30.5	12.4	37.9	21.6	16.4	29.6
25	Region 34	13.5	11.7	15.9	10.0	9.3	11.1	27.1	24.5	29.5	28.2	24.2	31.6	21.2	18.2	23.3	78.8	76.7	81.8	32.2	22.6	39.6	21.5	9.7	28.3
10	Region 35	11.8	8.4	13.0	9.4	8.5	10.0	26.6	25.1	29.7	29.4	26.9	34.6	22.8	19.4	25.9	77.2	74.1	80.6	27.7	19.2	33.2	20.1	12.7	25.0
7	Region 36	12.5	11.8	13.1	9.6	9.5	9.9	24.7	23.3	26.4	30.9	29.3	32.9	22.3	20.4	24.4	77.7	75.6	79.6	30.2	27.9	33.5	18.7	15.9	23.6
563	**Ave white**	**12.4**			**9.7**			**26.6**			**29.7**			**21.6**			**78.4**			**29.5**			**20.5**		
	Min white		**5.9**			**8.1**			**14.6**			**17.0**			**12.9**			**72.0**			**12.4**			**5.4**	
	Max white			**27.8**			**49.6**			**31.6**			**37.6**			**28.0**			**87.1**			**39.6**			**29.6**

Genetic modification

Ten percent (90 samples) of this crop samples (crop samples are made up of individual deliveries) were tested for the presence of MON 810 (Bt maize event) and NK 603 (RUR). The limit of detection for the MON 810 methodology used is 0,15 %. The highest reference standard is 2,0 % and the accuracy of results can only be guaranteed up to 2,0 %. Ninety-seven percent of the samples tested positive for MON 810 with values larger than 0,15 % (LOD).

The limit of detection for the NK 603 methodology used is 0,25 %. The highest reference standard is 1,8 % and the accuracy of the results can only be guaranteed up to 1,8 %. Fifty-nine percent of the samples tested positive with values larger than 0,25 % (LOD).

TABLE 20: PRESENCE OF GENETICALLY MODIFIED MAIZE (2006/2007)

Region	Grade	% MON810	% RUR	Region	Grade	% MON810	% RUR
10	YM1	>2	0.3	23	WM2	>2	>1.8
11	YM1	>2	<LOD	23	YM1	>2	>1.8
11	YM1	>2	<LOD	24	WM1	>2	>1.8
11	YM1	>2	<LOD	24	WM1	>2	1.5
12	YM2	0.2	>1.8	24	WM3	>2	0.5
12	WM2	>2	0.4	24	YM1	>2	>1.8
12	WM2	>2	0.8	24	WM1	>2	0.3
13	WM2	>2	<LOD	24	WM1	>2	>1.8
13	YM1	>2	>1.8	25	YM2	>2	>1.8
14	YM1	>2	<LOD	25	WM1	>2	<LOD
14	WM1	>2	0.3	25	WM1	>2	<LOD
14	WM3	>2	<LOD	26	WM1	>2	<LOD
14	COM (Y)	0.4	>1.8	26	YM1	>2	<LOD
14	WM1	>2	1.2	26	WM1	>2	<LOD
14	YM1	>2	>1.8	27	YM1	>2	<LOD
15	WM1	>2	<LOD	27	YM2	>2	<LOD
15	WM1	>2	>1.8	28	YM1	1.3	>1.8
15	YM1	>2	>1.8	28	YM1	>2	1.5
15	WM1	>2	0.3	28	YM2	>2	>1.8
15	COM (Y)	>2	>1.8	28	YM2	>2	<LOD
16	WM3	<LOD	0.3	29	YM1	>2	<LOD
17	WM3	>2	<LOD	29	YM1	>2	>1.8
18	YM1	>2	1.0	29	WM1	>2	<LOD
18	YM1	>2	>1.8	29	WM1	1.1	<LOD
19	WM1	>2	>1.8	30	YM1	>2	<LOD
19	YM2	>2	>1.8	30	YM1	1.5	<LOD
19	YM1	>2	>1.8	30	WM1	1.0	0.6
20	WM1	>2	<LOD	30	YM2	1.2	1.3
21	WM1	0.8	>1.8	31	YM1	0.6	>1.8
21	YM1	>2	>1.8	32	YM1	0.5	1.3
21	WM2	>2	<LOD	32	WM1	>2	<LOD
21	WM2	>2	0.4	32	YM1	0.4	>1.8
22	WM1	>2	>1.8	32	YM1	0.5	<LOD
22	WM1	>2	1.6	32	WM1	>2	<LOD
22	WM1	>2	>1.8	33	YM1	>2	>1.8
23	YM1	>2	0.6	33	YM1	<LOD	<LOD
23	WM1	>2	0.7	33	WM1	0.2	<LOD
23	WM1	>2	>1.8	33	WM1	<LOD	<LOD
23	WM1	>2	1.7	34	WM2	>2	<LOD
23	WM2	>2	<LOD	34	WM1	>2	0.3
23	WM1	>2	1.6	34	WM1	>2	<LOD
23	WM1	>2	<LOD	35	YM1	>2	<LOD
23	WM3	>2	<LOD	35	WM1	>2	<LOD
23	YM1	>2	0.7	35	YM1	0.4	>1.8
23	YM1	>2	<LOD	36	YM1	>2	>1.8

% Samples positive for MON 810		% Samples positive for NK 603	
2006/2007	97,0 %	2006/2007	59,0 %
2005/2006	91,0 %	2005/2006	31,0 %
2004/2005	78,0 %	2004/2005	31,0 %
2003/2004	72,2 %	2003/2004	1,1 %

TABLE 21: MYCOTOXIN RESULTS 2006/2007

Region	Grade	Aflatoxin ppb (LOD: 1 ppb)	Fumonisin ppm (LOD: 0.25 ppm)	Deoxynivalenol ppm (LOD: 0.5 ppm)	Zearalenone ppm (LOD: 0.1 ppm)	Ochratoxin A ppb (LOD: 2 ppb)
10	YM1	0	1.30	1.20	0.00	0.00
11	YM1	0	4.40	0.00	0.00	0.00
11	YM1	0	0.00	1.40	0.00	0.00
11	YM1	0	0.65	0.58	0.00	0.00
12	WM2	0	1.30	0.83	0.00	0.00
12	WM2	0	1.60	0.00	0.00	2.00
12	YM2	0	0.70	2.10	0.00	0.00
13	WM2	0	1.50	0.00	0.00	0.00
13	YM1	0	0.56	0.00	0.00	0.00
14	WM1	0	0.00	0.00	0.00	0.00
14	WM1	0	0.70	0.00	0.00	0.00
14	WM3	0	0.49	0.00	0.00	0.00
14	COM (Y)	0	4.50	0.92	0.00	0.00
14	YM1	0	0.00	0.00	0.00	0.00
14	YM1	0	1.10	0.00	0.00	0.00
15	WM1	4	0.58	0.00	0.00	0.00
15	WM1	0	0.00	0.00	0.00	0.00
15	WM1	0	0.00	0.00	0.00	2.90
15	COM (Y)	0	0.00	1.10	0.00	0.00
15	YM1	0	0.58	1.30	0.00	0.00
16	WM3	0	0.28	0.00	0.00	0.00
17	WM3	0	2.30	0.00	0.00	2.80
18	YM1	0	0.00	0.00	0.00	0.00
18	YM1	0	0.00	0.66	0.00	0.00
19	WM1	0	0.97	0.74	0.00	0.00
19	YM1	0	0.35	1.30	0.00	6.50
19	YM2	0	0.84	2.10	0.00	0.00
20	WM1	9	0.27	1.40	0.00	0.00
21	WM1	0	0.00	0.00	0.00	0.00
21	WM2	0	0.00	1.00	0.00	0.00
21	WM2	0	0.73	3.10	0.00	0.00
21	YM1	0	0.00	0.80	0.00	2.80
22	WM1	0	0.00	0.67	0.00	0.00
22	WM1	0	0.86	0.00	0.00	0.00
22	WM1	0	2.10	0.92	0.00	0.00
23	WM1	0	0.00	0.75	0.00	0.00
23	WM1	0	0.55	0.00	0.00	0.00
23	WM1	0	0.00	0.00	0.00	0.00
23	WM1	0	3.50	0.81	0.00	3.40
23	WM1	0	1.10	1.10	0.00	0.00
23	WM2	0	3.40	0.68	0.00	2.00
23	WM2	2	2.60	0.83	0.00	2.80
23	WM3	0	0.00	1.10	0.00	0.00
23	YM1	0	0.00	0.00	0.00	0.00
23	YM1	0	0.92	3.10	0.00	0.00
23	YM1	0	0.62	1.30	0.00	0.00
23	YM1	0	0.69	1.10	0.00	0.00
24	WM1	0	0.00	0.00	0.00	5.00
24	WM1	0	0.83	0.87	0.00	0.00
24	WM1	0	2.40	1.10	0.00	0.00
24	WM1	0	0.00	1.00	0.00	5.20

TABLE 21: MYCOTOXIN RESULTS 2006/2007 (continue)

Region	Grade	Aflatoxin ppb (LOD: 1 ppb)	Fumonisin ppm (LOD: 0.25 ppm)	Deoxynivalenol ppm (LOD: 0.5 ppm)	Zearalenone ppm (LOD: 0.1 ppm)	Ochratoxin A ppb (LOD: 2 ppb)
24	WM3	0	1.90	1.70	0.00	0.00
24	YM1	0	0.00	1.10	0.00	3.30
25	WM1	0	0.34	0.00	0.00	0.00
25	WM1	0	0.79	0.00	0.00	0.00
25	YM2	0	0.00	0.00	0.00	0.00
26	WM1	0	0.00	0.00	0.00	0.00
26	WM1	0	0.34	0.52	0.00	0.00
26	YM1	0	0.00	1.10	0.00	0.00
27	YM1	0	0.00	0.59	0.00	0.00
27	YM2	0	0.00	1.00	0.00	0.00
28	YM1	0	0.47	0.59	0.00	0.00
28	YM1	0	0.66	1.00	0.00	0.00
28	YM2	0	0.26	0.00	0.00	0.00
28	YM2	0	0.00	0.00	0.00	0.00
29	WM1	0	1.00	0.00	0.00	0.00
29	WM1	0	0.45	0.00	0.00	0.00
29	YM1	0	0.93	0.00	0.00	0.00
29	YM1	0	0.00	0.00	0.00	0.00
30	WM1	0	0.00	0.60	0.00	4.10
30	YM1	0	0.00	0.00	0.00	0.00
30	YM1	0	0.00	0.00	0.00	0.00
30	YM2	0	0.00	1.40	0.00	0.00
31	YM1	0	0.00	1.20	0.00	0.00
32	WM1	0	0.00	0.00	0.00	0.00
32	WM1	0	0.43	0.75	0.00	0.00
32	YM1	0	0.00	0.00	0.00	0.00
32	YM1	0	0.40	0.00	0.00	0.00
32	YM1	0	0.28	0.00	0.00	0.00
33	WM1	0	0.00	0.00	0.00	2.60
33	WM1	0	0.00	0.00	0.00	0.00
33	YM1	0	1.60	0.00	0.00	0.00
33	YM1	0	0.78	0.00	0.00	0.00
34	WM1	0	0.00	0.00	0.00	0.00
34	WM1	0	0.64	0.00	0.00	0.00
34	WM2	0	0.00	0.00	0.00	0.00
35	WM1	0	0.00	0.00	0.00	0.00
35	YM1	0	0.00	0.00	0.00	0.00
35	YM1	0	0.00	0.00	0.00	0.00
36	YM1	0	1.10	0.00	0.00	0.00
N = 90 2006/2007 Average		0.17	0.64	0.53	0.00	0.50
2006/2007 Max		9.00	4.50	3.10	0.00	6.50
Average 2005/2006		0	0.97	2.74	0.03	0.12
Average 2004/2005		0	1.06	0.53	0.04	0.02
Average 2003/2004		0	1.36	0.35	0.05	0.47
Average 2002/2003		0	0.75	0.29	0.07	1.56
Average 2001/2002		0	0.78	0.70	0.07	1.58

Note: All results <LOD and zero are reported as 0 or 0.00
LOD: Limit of detection

Methods

1.Grading

1.1 RSA grading

RSA grading was done in accordance with the Grading Regulations for maize, as published in the Government Gazette No. 19131 of 14 August 1998, regulation No. R.905.

Description of deviations relating to RSA grading

a. Defective maize kernels
The term "defective kernels" means all maize kernels and pieces of maize kernels which are shrivelled, obviously immature, frost-damaged, heat-damaged, mouldy or discoloured, have sprouted (including kernels whose growing point in the germ is visibly discoloured), have cavities in the germ or endosperm caused by insects or rodents, are visibly contaminated by smut, soil, smoke or coal-dust, can pass through the 6,35 mm round-hole sieve, are clearly of inferior quality and of subspecies other than ***Zea mays indentata*** or ***Zea Mays indurata.***

b. Foreign matter
The term "foreign matter" means all matter other than maize, glass, stone, coal, dung or metal.

c. Other colour
The term "other colour" means maize kernels of a colour other than white or yellow but excludes pinked maize kernels.

d. Total deviation
The term "total deviation" means the total defective kernels plus foreign matter plus other colour kernels.

e. Pinked kernels
The term "pinked kernels" means maize kernels whose endosperm is white or yellow and whose pericarp or part thereof is red or pink in colour.

The specification, according to the Grading Regulations for classes 1 to 3 of white and yellow maize is a maximum of 12 %.

Fungal infection

All samples were inspected for the visual symptoms of Diplodia and Fusarium cobrot. There are four fungi which cause cobrot in South Africa namely Stenocarpella maydis (Diplodia maydis), Fusarium moniliforme, Fusarium graminearum and Stenocarpella macrospora(Diplodia Macrospora).
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.

1.2 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

a. 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.

b. Heat-damaged kernels
Kernels and pieces of kernels which are materially discoloured 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 discoloured by external heat caused by artificial drying methods.

b. 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.

c. Bushel weight (Hectolitre mass)
Bushel weight is specified as a grading factor in the USA Grading Regulations.

Hectolitre mass was determined on the maize crop samples and the bushel weight spec in the USA Regulations converted to hectolitre mass by multiplication with a factor of 1,2872 to enable the grading of the samples according to the USA Grading Regulations.

d. 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 %.

2. Nutritional value

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

The chemical methods used to establish a set of calibration samples were:
a) for fat, the petroleum ether extraction (Soxhlet) method (AACC 30-25, 1999),
b) for protein, the Dumas (Leco) method (AACC 46-30,1999), and
c) for starch, the 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.

3. Physical characteristics

Hectolitre mass
Hectolitre mass (grain density) means the mass in kilogram per hectolitre.

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.

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, a uniform kernel size is of particular importance to this industry, as kernels that are too large 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.

Breakage susceptibility - Industry accepted method 007

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

In the modern dry milling industry, maize is first cleaned 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 other maize products, like the various grades of maize meal, because the quantity of germ required to be returned to the milled endosperm cannot be accurately determined.

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 problems.
Every sample was 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 sieve was collected and the percentage broken kernels < 6,35 mm and < 4,75 mm was determined.

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 on the land, during harvest or during drying. Stress cracks are genetic and different cultivars will differ.

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.

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.

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
Break 3 grits

Break 1, 2 and 3 germ and bran are combined and then weighed for determination of Bran/ Germ %.

Break 3 grits is weighed for determination of % Grits.

Break 1, 2 and 3 meal are combined and weighed for determination of % extraction total meal.

4. 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 mycotoxin analyses were carried out in accordance with the Vicam immunoaffinity column technique using the different Vicam Instruction Manuals for the different mycotoxins. Detection of the toxins was done on a Fluorometer. 90 samples of the 900 maize crop samples were tested for Aflatoxin, Fumonisin, Deoxynivalenol, Zearalenone and Ochratoxin.

5. GMO (Genetically Modified Organisms)

90 samples of the 900 maize crop samples were tested for Bt (MON 810) and RUR (NK 603) Modified maize. Quantitative analyses for MON 810 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.

Fungi	Toxin	Method reference	Detection limits
Aspergillus flavus	Aflatoxin	Vicam Aflatest Instruction Manual May 5, 1999	1 ppb
Aspergillus ochraceus and several species of *Penicillium sp.*	Ochratoxin A	Vicam Ochratest Instruction Manual Nov 1, 2005	2 ppb
Fusarium moniliforme	Fumonisin	Vicam Fumonitest Instruction Manual Oct 1, 2004	0,25 ppm
Fusarium graminearum	Zearalenone	Vicam Zearalatest Instruction Manual Nov 19, 1998	0,1 ppm
Fusarium graminearum	Deoxynivalenol (DON)	FluoroQuant Don Test Kit - COKFD 2030 Feb 14,2007	0,5 ppm

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality 2005/2006

Country of origin	Argentina Average			RSA Crop Average		
Class and grade yellow maize	**YM1**	**YM2**	**COM**	**YM1**	**YM2**	**COM**
RSA Grading						
Defective kernels above 6.35 mm sieve, %	1.9	1.9	2.4	4.0	8.3	8.1
Defective kernels below 6.35 mm sieve, %	1.7	8.3	5.5	1.8	2.5	3.1
Total defective kernels, %	3.6	10.2	8.1	5.8	10.8	11.2
Other colour maize kernels, %	0.0	0.0	0.1	0.1	0.4	7.4
Foreign matter, %	0.2	0.1	0.2	0.2	0.2	0.2
Combined deviation, %	3.8	10.3	8.3	6.0	11.5	18.8
Pinked maize kernels, %	9.6	4.4	18.6	0.1	0.2	0.6
Noxious seeds	0	0	0	0	0	0
Physical Factors						
Hectolitre mass, kg/hl	77.5	75.4	76.1	76.2	74.0	74.1
100 Kernel mass, g	33.5	30.3	31.7	32.3	30.0	30.7
Stress cracks, %	6	10	14	5	5	10
Milling Index	99.7	104.1	93.4	93.1	87.0	87.8
Kernel Size						
% on top 10 mm	10.4	3.8	5.9	19.2	18.7	20.0
% on top 8 mm	73.8	70.1	55.2	65.5	65.3	63.4
% through 8 mm	15.8	26.1	38.6	15.3	16.1	16.6
Breakage susceptibility, g						
Below 6.35 mm sieve	0.0	1.8	1.4	2.0	3.7	3.4
Below 4.8 mm sieve	0.0	1.0	1.0	1.4	2.5	2.1
Nutritional Factors						
Protein, %	8.4	9.8	8.6	8.3	8.4	8.4
Fat, % (db)	3.9	4.3	4.5	3.9	3.9	4.0
Starch, % (db)	71.5	69.3	70.7	71.5	71.4	71.4
Number of samples	***1***	***1***	***41***	***209***	***86***	***7***
Mycotoxins						
Total Aflatoxin, ppb (ug/kg) [max. value]	0.38 [4.00]			0.00 [0.00]		
Fumonisin, ppm (mg/kg) [max. value]	1.39 [5.70]			1.29 [13.00]		
Deoxynivalenol, ppm (mg/kg) [max. value]	1.08 [2.60]			2.64 [5.90]		
Ochratoxin A, ppb (ug/kg) [max. value]	0.33 [2.90]			0.14 [2.90]		
Zearalenone, ppm (mg/kg) [max. value]	0.08 [0.37]			0.03 [0.39]		
Number of samples	***21***			***39***		
GMO						
MON 810, % Samples positive (> LOD of 0.15 %)	100			97		
NK 603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	76			28		
Number of samples	***21***			***39***		

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality 2006/2007

Country of origin	Argentina Average		RSA Crop Average	
Class and grade yellow maize	**YM2**	**COM**	**YM2**	**COM**
RSA Grading				
Defective kernels above 6.35 mm sieve, %	2.7	2.4	3.8	24.7
Defective kernels below 6.35 mm sieve, %	6.2	5.0	4.7	2.9
Total defective kernels, %	8.9	7.4	8.4	27.5
Other colour maize kernels, %	0.0	0.0	0.4	0.4
Foreign matter, %	0.1	0.2	0.2	0.8
Combined deviation, %	9.0	7.8	9.1	28.8
Pinked maize kernels, %	10.1	20.0	0.0	0.2
Noxious seeds	0	0	0	0
Physical Factors				
Hectolitre mass, kg/hl	77.1	76.1	74.4	73.3
100 Kernel mass, g	30.8	30.0	24.0	28.1
Stress cracks, %	16	9	4	8
Milling Index	107.7	97.8	91.6	97.4
Kernel Size				
% on top 10 mm	3.9	4.0	5.5	10.1
% on top 8 mm	51.4	57.3	55.9	65.6
% through 8 mm	44.7	38.6	38.6	24.3
Breakage susceptibility, g				
Below 6.35 mm sieve	1.0	0.9	2.9	3.3
Below 4.8 mm sieve	0.6	0.8	1.7	2.3
Nutritional Factors				
Protein, %	9.1	8.7	9.9	9.9
Fat, % (db)	5.2	4.7	3.5	3.8
Starch, % (db)	70.0	70.8	73.4	72.4
Number of samples	***3***	***80***	***60***	***8***
Mycotoxins				
Total Aflatoxin, ppb (ug/kg) [max. value]	0.43 [9.00]		0.00 [0.00]	
Fumonisin, ppm (mg/kg) [max. value]	1.66 [5.30]		1.05 [4.50]	
Deoxynivalenol, ppm (mg/kg) [max. value]	0.84 [2.80]		0.96 [2.10]	
Ochratoxin A, ppb (ug/kg) [max. value]	0.41 [3.50]		0.00 [<2]	
Zearalenone, ppm (mg/kg) [max. value]	0.01 [0.14]		0.00 [<0.1]	
Number of samples	***28***		***9***	
GMO				
MON 810, % Samples positive (> LOD of 0.15 %)	100		100	
NK 603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	89		78	
Number of samples	***28***		***9***	

IMPORTED MAIZE QUALITY

Imported maize quality versus RSA crop quality 2006/2007 (continue)

Country of origin	Switzerland Average		RSA Crop Average	
Class and grade yellow maize	**YM2**	**COM**	**YM2**	**COM**
RSA Grading				
Defective kernels above 6.35 mm sieve, %	2.5	2.1	3.8	24.7
Defective kernels below 6.35 mm sieve, %	7.1	6.8	4.7	2.9
Total defective kernels, %	9.6	8.9	8.4	27.5
Other colour maize kernels, %	0.0	0.0	0.4	0.4
Foreign matter, %	0.2	0.2	0.2	0.8
Combined deviation, %	9.8	9.1	9.1	28.8
Pinked maize kernels, %	10.2	22.2	0.0	0.2
Noxious seeds	0	0	0	0
Physical Factors				
Hectolitre mass, kg/hl	76.2	76.3	74.4	73.3
100 Kernel mass, g	26.8	28.4	24.0	28.1
Stress cracks, %	10	9	4	8
Milling Index	96.4	101.2	91.6	97.4
Kernel Size				
% on top 10 mm	6.5	2.3	5.5	10.1
% on top 8 mm	57.1	49.9	55.9	65.6
% through 8 mm	36.4	47.7	38.6	24.3
Breakage susceptibility, g				
Below 6.35 mm sieve	1.0	1.0	2.9	3.3
Below 4.8 mm sieve	0.6	0.5	1.7	2.3
Nutritional Factors				
Protein, %	9.1	8.5	9.9	9.9
Fat, % (db)	5.3	4.4	3.5	3.8
Starch, % (db)	68.2	71.2	73.4	72.4
Number of samples	***1***	***3***	***60***	***8***
Mycotoxins				
Total Aflatoxin, ppb (ug/kg) [max. value]	0.00 [0.00]		0.00 [0.00]	
Fumonisin, ppm (mg/kg) [max. value]	3.00 [3.00]		1.05 [4.50]	
Deoxynivalenol, ppm (mg/kg) [max. value]	0.51 [0.51]		0.96 [2.10]	
Ochratoxin A, ppb (ug/kg) [max. value]	<2 [<2]		0.00 [<2]	
Zearalenone, ppm (mg/kg) [max. value]	<0.1 [<0.1]		0.00 [<0.1]	
Number of samples	***1***		***9***	
GMO				
MON 810, % Samples positive (> LOD of 0.15 %)	>2 [>2]		100	
NK 603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	1.50 [1.50]		78	
Number of samples	***1***		***9***	

SOUTH AFRICAN MAIZE CROP QUALITY 2006/2007 (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, %	1.5	6.1	12.4	21.5	1.7	3.8	9.6	24.7	2.9
Defective kernels below 6.35 mm sieve, %	1.8	2.5	2.5	4.1	1.9	4.7	8.0	2.9	2.2
Total defective kernels, %	3.3	8.7	15.0	25.6	3.6	8.4	17.5	27.5	5.1
Other colour maize kernels, %	0.1	0.4	0.5	4.0	0.1	0.4	1.1	0.4	0.2
Foreign matter, %	0.1	0.2	0.3	0.3	0.1	0.2	0.3	0.8	0.1
Combined deviation, %	3.6	9.2	15.7	29.8	3.8	9.1	18.9	28.8	5.4
Pinked maize kernels, %	0.0	0.1	0.2	0.0	0.1	0.0	0.1	0.2	0.0
Noxious seeds	0	0	0	0	0	0	0	0	0
Physical Factors									
Hectolitre mass, kg/hl	78.5	77.2	75.8	73.0	77.0	74.4	74.2	73.3	77.5
100 Kernel mass, g	30.1	28.8	28.5	26.6	28.3	24.0	21.3	28.1	28.9
Stress cracks, %	3	3	4	4	4	4	1	8	3
Milling Index	100.0	101.0	98.4	87.4	96.5	91.6	95.9	97.4	98.3
Kernel Size									
% on top 10 mm	17.6	15.2	15.4	10.9	9.2	5.5	4.7	10.1	13.9
% on top 8 mm	63.3	62.7	64.4	62.9	63.3	55.9	47.8	65.6	62.7
% through 8 mm	19.1	22.1	20.3	26.2	27.5	38.6	47.4	24.3	23.4
Breakage susceptibility, g									
Below 6.35 mm sieve	1.2	2.1	3.1	4.4	1.8	2.9	3.6	3.3	1.7
Below 4.8 mm sieve	0.8	1.4	2.2	3.0	1.2	1.7	1.8	2.3	1.1
Nutritional Values									
Protein, %	9.2	9.8	10.1	8.9	9.4	9.9	10.7	9.9	9.4
Fat, % (db)	3.8	4.0	4.0	4.0	3.5	3.5	3.6	3.8	3.7
Starch, % (db)	73.0	72.6	72.3	73.1	73.3	73.4	72.8	72.4	73.0
Number of samples	***455***	***66***	***38***	***4***	***262***	***60***	***7***	***8***	***900***
Mycotoxins									
Total Aflatoxin, ppb (ug/kg) [max. value] (LOD 1 ppb)	0.38 [9.00]	0.25 [2.00]	0.00 [0.00]		0.00 [0.00]	0.00 [0.00]		0.00 [0.00]	0.17
Fumonisin, ppm (mg/kg) [max. value] (LOD 0.25 ppm)	0.53 [3.50]	1.39 [3.40]	0.99 [2.30]		0.51 [4.40]	0.26 [0.84]		2.25 [4.50]	0.64
Deoxynivalenol, ppm (mg/kg) [max. value] (LOD 0.5 ppm)	0.33 [1.40]	0.81 [3.10]	0.56 [1.70]		0.46 [1.40]	0.94 [2.10]		1.01 [1.10]	0.50
Ochratoxin A, ppb (ug/kg) [max. value] (LOD 2 ppb)	0.68 [5.20]	0.85 [2.80]	0.56 [2.80]		0.37 [6.50]	<2 [<2]		<2 [<2]	0.50
Zearalenone, ppm (mg/kg) [max. value] (LOD 0.1 ppm)	0.00 [<0.1]	0.00 [<0.1]	0.00 [0.00]		0.00 [<0.1]	0.00 [<0.1]		<0.1 [<0.1]	0.00
Number of samples	***34***	***8***	***5***		***34***	***7***		***2***	***90***
GMO									
MON 810, % Samples positive (> LOD of 0.15 %)	97	100	80		97	100		100	97
NK 603 (Roundup Ready), % Samples positive (> LOD of 0.25 %)	56	50	40		62	71		100	59
Number of samples	***34***	***8***	***5***		***34***	***7***		***2***	***90***