SOUTH AFRICAN

Maize Crop Quality Report

2003/2004 Season

INDEX

Compiled and issued by the:

SOUTH AFRICAN
COMMERCIAL MAIZE QUALITY
2003/2004

Acknowledgments

With gratitude to:

Introduction

The final production estimate for maize for the 2003/2004 season by the National Crop Estimates Committee was 9 482 000 tons. This is 1,0 % more than the previous season's 9 391 450 tons, and higher than the previous five years' average. The average production from 1998/99 to 2002/03 was 8,64 million tons. The major maize-producing region was the Free State (3 190 000 tons), followed by the North West (2 496 000 tons) and Mpumalanga (2 218 000 tons). White maize contributed 61 % to the total production, which is 7 % lower than the previous year.

900 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, and 100 kernel weight, kernel size, breakage susceptibility, stress cracks, milling index, and fat, protein, starch and whiteness index were determined. Mycotoxin analyses as well as testing for GM maize were performed on 90 randomly selected samples representative of white and yellow maize produced per region.

The 900 samples analysed consisted of 599 white maize samples and 301 yellow maize samples. Of the 599 white maize samples analysed, 70 % were WM 1, 25 % WM 2, 5 % WM3 and only four samples were of the Class Other Maize white. Of the 301 yellow maize samples analysed, 75 % were YM1, 23 % YM2, 2 % YM3 and only two samples were of the Class Other Maize yellow.

Crop quality

This crop was of a good quality. 72 % of the crop graded as maize grade 1.

The average hectolitre mass was 77,8 kg/hl (77,7 during 2002/2003). The average hectolitre mass from 1994/95 was 76,4 kg/hl. The total percentage of defective kernels was 6,3, which is higher than the previous year (4,3). The percentage total deviation was 6.8, which is 2,1 % higher than the previous year.

The fat content was 4,0 % (db), starch content 75,1 % (db) and protein 9,1 % (db). The fat content was average in comparison with previous years (4,1 % db), the starch content was more or less the same as the last three seasons and the protein was little higher than the average of the previous five years, namely 8,9 % (db). The five-year average for starch was 73,8 %.

The kernel size increased against the previous year, the 100 kernel weight average increased with about 1 %. The kernels this season had the same breakability and stress cracks than during the 2002/2003 season.

The milling index as well as whiteness index were more or less the same than the previous season. The Bt-gene (GMO) was present in about 57,0 % of the samples (result >1,0 %). The RUR-gene was found present in only one sample (result >0,25 %). The mycotoxin Fumonisin averaged 1,14 ppm, which is higher than the previous two years.

Production regions

The RSA is divided into 36 grain-production regions. Regions one to nine 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 in the North West. Regions 12 to 20 are all within the North West.

Regions 21 to 28 are in the Free State. The Free State (34 %) and North West (26 %) contributed 60 % of the total maize production in the RSA. Regions 29 to 33 are within Mpumalanga, which is the third largest maize-producing province (24 %). Region 34 falls within Gauteng, region 35 within the Limpopo Province and region 36 within KwaZulu-Natal.

South African Provinces
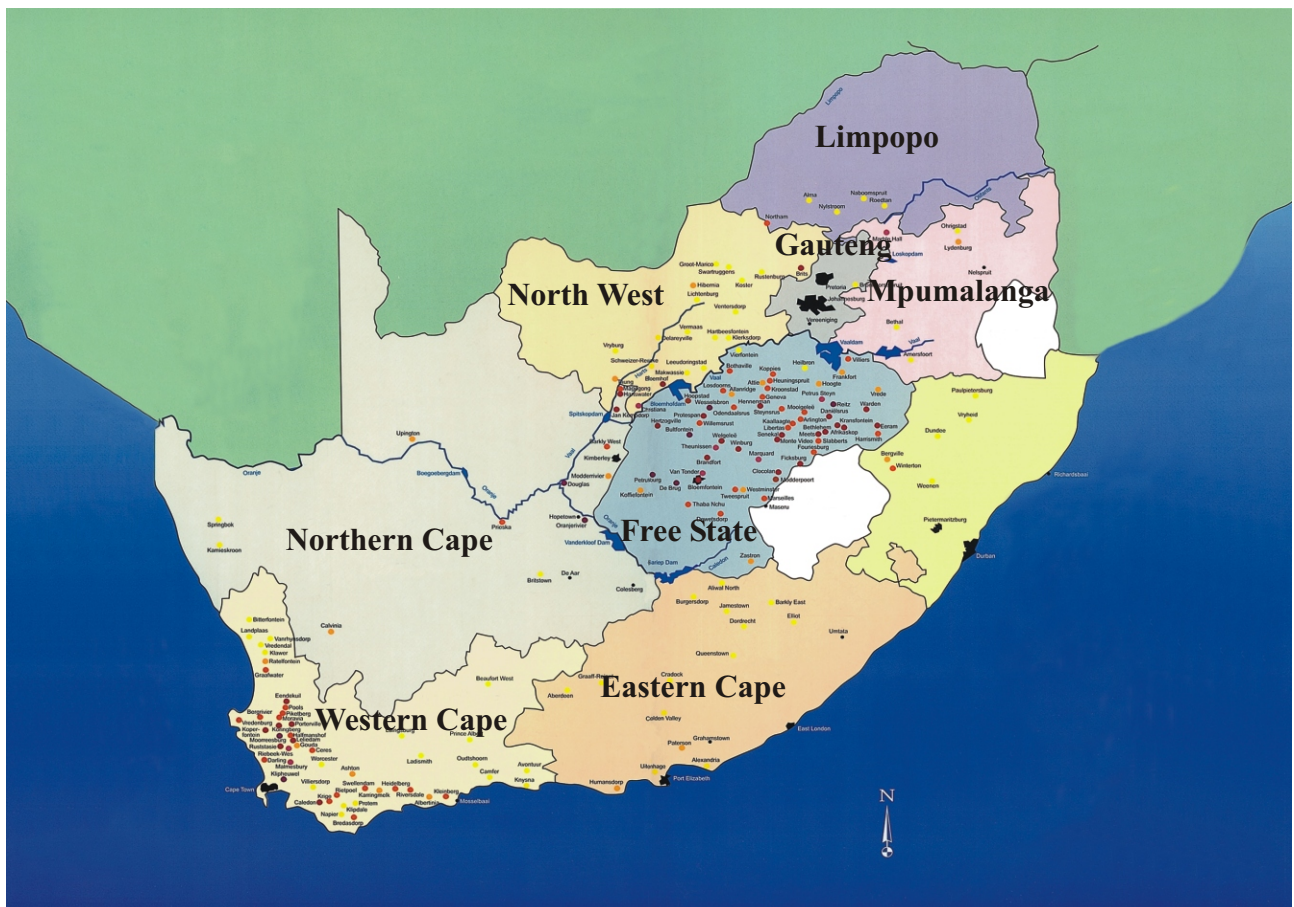
Maize quality (summary)

The maize quality of the three main maize-producing provinces was more or less the same. The physical characteristics of the white maize were overall marginally better than those of the yellow maize.

Free State

This province produced 34 % of all the commercial maize in South Africa, of which 67 % was white maize and 33 % yellow maize.

The average percentage total defective kernels was 8,6 %, the same than North West (followed by Mpumalanga with 7,3 %).

The maize produced in the Free State averaged a hectolitre mass of 77,2 kg/hl. (North West was 77,0 kg/hl and Mpumalanga 77,1 kg/hl.) The white maize averaged 77,5 kg/hl and the yellow maize 76,9 kg/hl.

The 100 kernel weight averaged 35,1 g, with the white maize averaging 35,3 g and the yellow maize 34,1 g. (Mpumalanga and North West averaged 37,5 g and 34,4 g respectively.)

Stress cracks were higher in the Free State (8,6) than in the other two provinces. (North West was 5,4 and Mpumalanga was 5,0.)

The average milling index was the lowest (106,7) of these three provinces, although the difference is not significant.

The average Fumonisin content was 1,07 ppm.

North West

This province produced 26 % of all the commercial maize grown in South Africa, of which 79 % was white maize and 21 % yellow maize.

The 100 kernel mass in North West was about 1,0 g lower than in the Free State and about 3,0 g lower than in Mpumalanga.

All three provinces produced an average protein of 9,1 % (db).

The average milling index was 108,4.

The white maize from the North West gave the highest average whiteness index of 17,1 (sifted 87:13). (The Free State had an average of 16,4 and Mpumalanga 16,8.)

The average Fumonisin content was the highest of the three provinces at 1,85 ppm.

Mpumalanga

This province produced 23 % of the total commercial maize production in South Africa, of which 49 % was white maize and 51 % yellow maize.

This province had the largest kernel size with an average of 30,9 % of the maize having kernels > 10 mm. (The Free State was 27,0 % and North West 25,2 %.)

The maize kernels produced in Mpumalanga were less breakable (1,0 %) during handling and storage. (Free State maize as well as North West had a breakability of 1,4 %.)

In all three provinces the white maize and yellow maize starch, fat and protein content averaged about the same.

Mpumalanga had an average of 1,14 ppm Fumonisin present.

Genetically modified maize was present in all three of these provinces. Free State had the highest number of samples (67 %) present with the Cry 1Ab protein (Bt gene) above 1,0 %. In Mpumalanga 50 % of the samples and North West 44 % of the samples tested above 1,0 %.

Roundup Ready (RUR) with levels above the detection limit of the method (>0,25 %) was present in only one of the 90 samples tested.

Grain Production Regions

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

Region 10: Griqualand West Region

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

Region 11: Vaalharts Region

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

Region 12: North West Western Region

NWK	Bloubank	*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

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*	Harbeesfontein
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	Battery	*MGK*	Brits
MGK	Rustenburg	*MGK*	Pretoria-West
NWK	Boons	*NWK*	Koster
NWK	Derby	*NWK*	Syferbult
NWK	Swartruggens		

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

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

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

Region 29: Mpumalanga Southern Region

Afgri	Balfour	*Afgri*	Greylingstad
Afgri	Grootvlei	*Afgri*	Harvard
Afgri	Holmdene	*Afgri*	Leeuspruit

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*	Leslie
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		

Region 35: Limpopo Region

MGK	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	*Other*	Vaalwater

TABLE 1: COMMERCIAL WHITE AND YELLOW MAIZE - FINAL PRODUCTION ESTIMATES FOR THE 2003/04 SEASON COMPARED TO THE 2002/03 SEASON

PROVINCES	FINAL ESTIMATE 2003/04			% difference to 2002/03	FINAL ESTIMATE 2002/03		
	White Tons	Yellow Tons	Total Tons		White Tons	Yellow Tons	Total Tons
Western Cape	600	14 000	14 600	-29,5	300	20 400	20 700
Northern Cape	62 500	450 000	512 500	-4,1	113 050	421 500	534 550
Free State	2 125 000	1 065 000	3 190 000	-4,4	2 515 000	821 500	3 336 500
Eastern Cape	20 000	63 000	83 000	+64,4	14 700	35 800	50 500
KwaZulu-Natal	180 000	220 000	400 000	+3,9	207 500	177 600	385 100
Mpumalanga	1 088 000	1 130 000	2 218 000	+17,8	975 000	907 500	1 882 500
Limpopo	101 400	20 000	121 400	-25,1	140 000	22 100	162 100
Gauteng	262 500	184 000	446 500	+6,7	265 000	153 500	418 500
North West	1 965 000	531 000	2 496 000	-4,0	2 135 000	466 000	2 601 000
Total RSA	5 805 000	3 677 000	9 482 000	+0,96	6 365 550	3 025 900	9 391 450
% of crop	61	39			68	32	

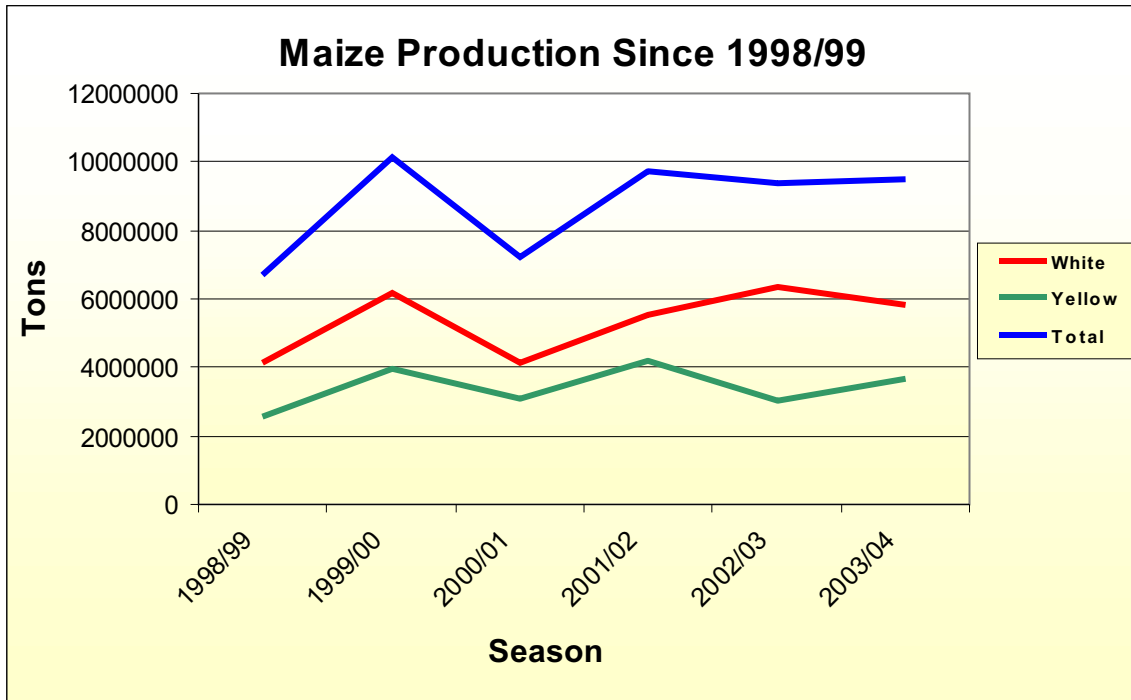**Figures obtained from the National Crop Estimates Committee**

TABLE 2: RSA GRADING OF WHITE MAIZE (2003/2004)

Number of samples	Region	% Defective Kernels Above 6.35 mm sieve			% Defective Kernels 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 1																															
3	Region 8	2.7	2.4	3.0	1.8	1.4	2.2	4.4	3.8	5.2	0.2	0.2	0.2	0.2	0.0	0.6	4.8	4.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0
3	Region 10	1.8	0.6	2.4	1.1	0.5	1.5	2.9	1.1	3.9	0.1	0.1	0.2	0.1	0.0	0.1	3.1	1.3	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Region 11	1.4	0.9	2.2	1.7	0.6	3.8	3.1	1.5	5.0	0.3	0.2	0.3	0.4	0.0	0.8	3.7	1.7	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0
6	Region 12	2.7	1.8	3.5	1.6	1.4	1.7	4.3	3.4	5.2	0.3	0.2	0.3	0.3	0.0	1.4	4.8	4.0	6.3	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
4	Region 13	2.9	2.4	3.0	1.6	1.4	1.8	4.5	4.0	4.8	0.3	0.3	0.3	0.3	0.0	1.1	5.0	4.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	0.4
12	Region 14	3.2	2.4	4.2	2.0	1.1	2.9	5.2	3.5	6.5	0.3	0.2	0.3	0.3	0.0	1.2	5.8	3.8	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.9	0.0	0.0	0.0
6	Region 15	3.1	2.4	4.4	2.1	1.5	3.0	5.2	4.0	6.5	0.3	0.2	0.3	0.2	0.0	0.9	5.6	4.2	7.4	0.0	0.0	0.0	0.2	0.0	0.9	0.1	0.0	0.6	0.0	0.0	0.3
11	Region 16	3.2	2.5	4.5	1.9	1.0	2.8	5.1	3.9	6.0	0.3	0.2	0.3	0.1	0.0	0.9	5.5	4.1	6.6	0.0	0.0	0.0	0.1	0.0	0.4	0.3	0.0	0.8	0.1	0.0	0.4
13	Region 17	3.1	1.4	5.7	1.4	0.5	2.5	4.5	1.9	6.6	0.1	0.0	0.3	0.3	0.0	1.2	4.9	1.9	7.6	0.0	0.0	0.0	0.1	0.0	0.6	0.3	0.0	1.3	0.4	0.0	1.3
14	Region 18	3.1	1.7	4.3	1.8	1.4	2.0	4.8	3.4	6.1	0.2	0.2	0.3	0.3	0.0	1.1	5.4	3.7	6.7	0.0	0.0	0.0	0.1	0.0	0.3	0.2	0.0	1.0	0.2	0.0	0.7
8	Region 19	3.0	2.2	4.0	1.6	1.3	2.1	4.5	3.7	5.5	0.3	0.2	0.3	0.3	0.0	1.1	5.1	4.2	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
7	Region 20	3.3	2.1	5.7	1.5	0.7	2.1	4.8	3.2	6.3	0.3	0.2	0.3	0.4	0.0	0.7	5.5	3.9	7.2	0.0	0.0	0.0	0.1	0.0	0.4	0.6	0.0	1.4	0.1	0.0	0.7
21	Region 21	3.1	1.3	4.8	1.5	0.7	2.9	4.7	2.3	6.6	0.2	0.0	0.3	0.2	0.0	2.1	5.1	2.6	7.3	0.0	0.0	0.0	0.1	0.0	0.5	0.5	0.0	1.6	0.3	0.0	1.1
33	Region 22	3.2	1.4	5.6	1.4	0.4	3.8	4.6	2.8	7.0	0.2	0.0	0.3	0.2	0.0	2.2	5.1	3.1	8.0	0.0	0.0	0.0	0.1	0.0	0.8	0.3	0.0	1.0	0.5	0.0	4.1
97	Region 23	3.1	1.4	6.3	1.7	0.6	4.4	4.9	2.4	6.9	0.3	0.2	0.3	0.2	0.0	1.2	5.4	3.1	7.5	0.0	0.0	0.0	0.1	0.0	0.4	0.3	0.0	1.3	0.4	0.0	1.5
57	Region 24	2.9	1.4	5.6	1.7	0.4	2.9	4.6	2.8	7.0	0.2	0.1	0.3	0.2	0.0	1.9	5.0	3.1	7.5	0.0	0.0	0.3	0.0	0.0	0.4	0.2	0.0	1.1	0.2	0.0	1.1
10	Region 25	2.4	1.6	3.9	1.8	0.9	3.8	4.3	3.1	5.4	0.2	0.0	0.3	0.4	0.0	1.0	4.9	3.3	6.1	0.1	0.0	0.7	0.0	0.0	0.0	0.2	0.0	0.7	0.0	0.0	0.0
15	Region 26	2.9	1.9	4.9	1.6	1.0	2.2	4.5	3.3	5.8	0.3	0.2	0.3	0.3	0.0	1.0	5.0	3.9	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.0	0.0	0.0	0.0
10	Region 27	3.5	2.4	5.8	1.7	0.9	2.3	5.2	4.0	7.0	0.3	0.2	0.3	0.3	0.0	1.7	5.7	4.3	7.7	0.0	0.0	0.0	0.1	0.0	0.3	0.6	0.0	1.3	0.3	0.0	1.0
16	Region 28	2.8	1.9	3.8	1.7	1.0	2.9	4.5	3.4	6.5	0.2	0.1	0.3	0.2	0.0	0.9	4.9	3.6	7.1	0.1	0.0	1.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.0
7	Region 29	2.5	1.8	3.0	2.0	1.0	4.2	4.5	2.8	6.3	0.3	0.2	0.3	0.0	0.0	0.0	4.7	3.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.0	0.0	0.0
1	Region 30	1.9	1.9	1.9	1.4	1.4	1.4	3.3	3.3	3.3	0.3	0.3	0.3	0.0	0.0	0.0	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Region 32	2.9	2.3	4.1	1.4	0.7	1.8	4.3	4.0	4.8	0.3	0.3	0.3	0.1	0.0	0.4	4.6	4.3	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.3	0.0	0.7
40	Region 34	2.9	1.4	4.9	1.9	0.8	3.5	4.8	2.7	6.9	0.2	0.0	0.3	0.3	0.0	1.6	5.4	2.7	7.2	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	1.3	0.3	0.0	1.0
7	Region 35	3.2	2.9	3.4	1.4	1.3	1.8	4.6	4.3	5.1	0.3	0.2	0.3	0.0	0.0	0.0	4.9	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Region 36	2.6	0.7	3.5	2.4	1.1	3.3	5.0	1.8	6.8	0.2	0.1	0.2	0.1	0.0	0.6	5.3	2.1	6.9	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.2	0.0	0.0	0.1
419	Ave WM 1	3.0			1.7			4.7			0.2			0.2			5.2			0.0			0.1			0.3			0.2		
	Min WM 1		0.6			0.4			1.1			0.0			0.0			1.3			0.0			0.0			0.0			0.0	
	Max WM 1			6.3			4.4			7.0			0.3			2.2			8.0			1.3			0.9			1.6			4.1

TABLE 2: RSA GRADING OF WHITE MAIZE (2003/2004) (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 2																															
1	Region 11	6.3	6.3	6.3	4.1	4.1	4.1	10.4	10.4	10.4	0.3	0.3	0.3	1.3	1.3	1.3	12.0	12.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Region 12	5.9	2.6	8.8	2.6	1.4	3.2	8.5	4.6	11.9	0.4	0.2	0.5	0.6	0.0	2.2	9.4	5.0	14.3	0.0	0.0	0.0	0.1	0.0	1.0	0.5	0.0	1.2	0.3	0.0	1.3
3	Region 13	5.3	4.1	6.2	2.2	0.9	3.6	7.5	6.3	9.2	0.4	0.4	0.5	1.2	0.5	2.0	9.1	7.9	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.7	0.0	0.0	0.0
7	Region 14	6.2	3.1	8.8	2.5	0.9	5.7	8.7	4.7	12.3	0.4	0.3	0.4	0.6	0.0	1.3	9.6	5.1	14.0	0.0	0.0	0.0	0.1	0.0	0.6	0.5	0.0	1.8	0.1	0.0	0.7
2	Region 15	6.7	6.3	7.2	2.4	1.8	3.0	9.2	8.1	10.2	0.4	0.4	0.4	0.5	0.0	1.1	10.1	9.6	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.2	0.0	0.4
1	Region 16	2.8	2.8	2.8	2.8	2.8	2.8	5.6	5.6	5.6	0.4	0.4	0.4	0.0	0.0	0.0	6.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Region 17	4.4	2.0	6.5	1.8	0.9	3.6	6.3	4.0	7.7	0.3	0.2	0.4	0.4	0.0	1.0	7.0	4.7	8.8	0.0	0.0	0.0	0.2	0.0	0.8	0.6	0.0	0.9	0.6	0.0	1.5
11	Region 18	6.4	3.6	9.0	2.6	1.4	4.0	9.0	7.3	11.1	0.3	0.3	0.5	0.6	0.0	1.3	9.9	7.9	12.9	0.0	0.0	0.0	0.1	0.0	0.5	0.8	0.0	1.6	0.5	0.0	2.2
5	Region 19	5.8	4.5	7.9	2.6	1.7	3.7	8.4	7.5	9.6	0.4	0.3	0.4	0.9	0.0	1.5	9.8	8.9	10.4	0.0	0.0	0.0	0.1	0.0	0.3	0.4	0.0	0.9	0.1	0.0	0.3
5	Region 20	5.5	2.2	8.6	2.9	2.1	3.9	8.4	4.4	11.1	0.4	0.4	0.5	0.2	0.0	0.8	9.0	4.7	11.6	0.0	0.0	0.0	0.2	0.0	0.6	0.5	0.0	1.1	0.2	0.0	0.6
7	Region 21	5.3	2.6	9.1	3.2	1.2	6.3	8.5	4.3	11.2	0.4	0.3	0.5	0.3	0.0	1.1	9.1	5.7	11.7	0.0	0.0	0.0	0.2	0.0	0.5	1.0	0.4	1.5	0.7	0.0	1.4
10	Region 22	6.2	3.9	7.9	2.6	0.7	5.6	8.8	6.4	12	0.3	0.2	0.4	0.4	0.0	1.2	9.5	7.4	13.5	0.0	0.0	0.0	0.2	0.0	0.4	0.6	0.3	1.0	0.7	0.3	1.3
40	Region 23	5.5	1.7	10.7	3.1	0.9	7.3	8.6	4.5	12.9	0.3	0.0	0.5	0.3	0.0	5.7	9.2	4.8	14.0	0.0	0.0	0.0	0.2	0.0	1.0	0.5	0.0	1.4	0.8	0.0	2.2
12	Region 24	5.8	2.4	11.3	2.3	0.8	5.1	8.2	3.9	12.6	0.4	0.2	0.5	0.2	0.0	0.8	8.7	4.3	13.3	0.0	0.0	0.0	0.2	0.0	1.3	0.6	0.0	1.5	0.7	0.0	2.1
4	Region 25	6.5	2.5	9.3	2.8	0.8	4.6	9.3	7.1	11.6	0.3	0.2	0.4	0.2	0.0	0.7	9.8	7.4	12.0	0.2	0.0	0.7	0.0	0.0	0.0	0.4	0.0	1.3	0.3	0.0	1.0
4	Region 26	4.3	3.5	5.0	3.0	2.3	3.3	7.3	6.7	8.3	0.4	0.4	0.4	0.7	0.0	1.2	8.4	7.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.2	0.3	0.0	0.6
1	Region 27	6.6	6.6	6.6	1.6	1.6	1.6	8.2	8.2	8.2	0.3	0.3	0.3	0.4	0.4	0.4	8.9	8.9	8.9	0.0	0.0	0.0	0.3	0.3	0.3	1.0	1.0	1.0	0.6	0.6	0.6
4	Region 28	6.0	5.7	6.5	5.0	3.3	6.2	11.1	9.0	12.2	0.3	0.3	0.3	0.4	0.0	0.9	11.8	10.1	12.5	0.0	0.0	0.0	0.2	0.0	0.6	0.7	0.6	0.9	0.0	0.0	0.0
2	Region 29	4.4	3.9	4.9	2.5	2.2	2.8	6.9	6.0	7.7	0.4	0.4	0.4	0.7	0.7	0.7	7.9	7.1	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.3	0.0	0.7
1	Region 30	4.0	4.0	4.0	2.8	2.8	2.8	6.8	6.8	6.8	0.4	0.4	0.4	0.0	0.0	0.0	7.2	7.2	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
1	Region 31	6.0	6.0	6.0	1.9	1.9	1.9	8.0	8.0	80	0.3	0.3	0.3	0.0	0.0	0.0	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
1	Region 32	5.0	5.0	5.0	3.2	3.2	3.2	8.2	8.2	8.2	0.3	0.3	0.3	0.0	0.0	0.0	8.5	8.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
10	Region 34	5.8	2.9	8.7	3.5	1.2	9.7	9.3	6.7	12.6	0.3	0.0	0.3	0.6	0.0	1.6	10.2	8.3	13.7	0.0	0.0	0.0	0.1	0.0	0.4	0.6	0.0	1.4	0.9	0.0	2.1
2	Region 36	4.9	3.7	6.1	4.1	3.7	4.5	9.0	7.4	10.6	0.2	0.2	0.2	0.1	0.0	0.3	9.3	7.9	10.8	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.0
148	**Ave WM2**	**5.6**			**2.9**			**8.5**			**0.3**			**0.4**			**9.3**			**0.0**			**0.1**			**0.6**			**0.6**		
	Min WM 2		1.7			0.7			3.9			0.0			0.0			4.3			0.0			0.0			0.0			0.0	
	Max WM 2			11.3			9.7			12.9			0.5			5.7			14.3			0.7			1.3			1.8			2.2

TABLE 2: RSA GRADING OF WHITE MAIZE (2003/2004) (continue)

Number of samples	Region	% Defective Kernels Above 6.35 mm sieve			% Defective Kernels 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																															
1	Region 13	13.2	13.2	13.2	1.4	1.4	1.4	14.7	14.7	14.7	0.5	0.4	0.5	1.8	1.8	1.8	17.0	17.0	17.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	0.4	0.4	0.4
2	Region 14	11.1	10.1	12.1	3.0	1.4	4.6	14.1	13.5	14.7	0.6	0.5	0.7	1.3	1.3	1.3	16.0	15.5	16.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	1.6	0.4	0.0	0.8
1	Region 15	9.8	9.8	9.8	3.3	3.3	3.3	13.1	13.1	13.1	0.5	0.5	0.5	0.0	0.0	0.0	13.6	13.6	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
1	Region 16	7.8	7.8	7.8	3.6	3.6	3.6	11.4	11.4	11.4	0.6	0.6	0.6	0.0	0.0	0.0	11.9	11.9	11.9	0.0	0.0	0.0	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
3	Region 17	6.8	5.4	9.7	3.3	1.1	4.5	10.1	6.5	13.9	0.5	0.3	0.6	0.6	0.0	1.0	11.2	7.0	15.2	0.0	0.0	0.0	0.3	0.0	0.6	0.7	0.4	0.9	0.5	0.0	1.0
1	Region 18	9.2	9.2	9.2	5.7	5.7	5.7	14.9	14.9	14.9	0.5	0.5	0.5	1.3	1.3	1.3	16.6	16.6	16.6	0.0	0.0	0.0	0.4	0.4	0.4	0.7	0.7	0.7	0.4	0.4	0.4
2	Region 19	10.8	10.5	11.2	3.6	1.9	5.3	14.4	13.1	15.7	0.5	0.5	0.6	0.7	0.0	1.3	15.6	13.5	17.6	0.0	0.0	0.0	0.4	0.3	0.4	1.3	0.4	2.1	0.6	0.4	0.8
3	Region 20	11.4	10.5	12.4	4.8	2.9	6.3	16.2	14.2	18.7	0.5	0.4	0.6	0.5	0.0	1.0	17.2	15.2	20.3	0.0	0.0	0.0	0.1	0.0	0.4	0.7	0.4	1.0	0.4	0.0	0.7
1	Region 21	12.6	12.6	12.6	2.9	2.9	2.9	15.5	15.5	15.5	0.3	0.3	0.3	0.0	0.0	0.0	15.8	15.8	15.8	0.0	0.0	0.0	0.4	0.4	0.4	1.2	1.2	1.2	1.2	1.2	1.2
4	Region 22	11.3	6.5	15.1	1.5	1.1	1.9	12.8	8.0	16.2	0.5	0.3	0.7	0.4	0.0	1.7	13.7	8.6	18.3	0.0	0.0	0.0	0.5	0.3	0.7	1.2	1.0	1.4	2.2	1.5	2.8
2	Region 23	6.9	2.9	10.8	1.9	1.5	2.3	8.7	4.4	13.1	0.4	0.3	0.6	0.0	0.0	0.0	9.2	5.0	13.4	0.0	0.0	0.0	0.4	0.3	0.4	0.8	0.4	1.2	1.3	0.5	2.0
1	Region 24	11.5	11.5	11.5	2.5	2.5	2.5	14.1	14.1	14.1	0.3	0.3	0.3	0.0	0.0	0.0	14.4	14.4	14.4	0.0	0.0	0.0	0.7	0.7	0.7	1.0	1.0	1.0	1.4	1.4	1.4
1	Region 27	16.2	16.2	16.2	3.3	3.3	3.3	19.5	19.5	19.5	0.4	0.4	0.4	0.0	0.0	0.0	19.9	19.9	19.9	0.0	0.0	0.0	0.7	0.7	0.7	1.3	1.3	1.3	2.0	2.0	2.0
3	Region 29	5.7	2.6	11.1	5.4	1.5	10.0	11.1	4.0	15.9	0.4	0.3	0.6	0.1	0.0	0.4	11.6	4.3	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.6	0.6	0.0	1.3
1	Region 30	13.3	13.3	13.3	1.2	1.2	1.2	14.5	14.5	14.5	0.3	0.3	0.3	0.0	0.0	0.0	14.9	14.9	14.9	0.0	0.0	0.0	0.4	0.4	0.4	3.0	3.0	3.0	2.1	2.1	2.1
1	Region 34	15.8	15.8	15.8	0.6	0.6	0.6	16.4	16.4	16.4	0.0	0.0	0.0	0.0	0.0	0.0	16.4	16.4	16.4	0.0	0.0	0.0	0.6	0.6	0.6	13.5	13.5	13.5	14.1	14.1	14.1
28	Ave WM 3	10.1			3.1			13.3			0.4			0.5			14.2			0.0			0.3			1.4			1.4		
	Min WM 3		2.6			0.6			4.0			0.0			0.0			4.3			0.0			0.0			0.0			0.0	
	Max WM 3			16.2			10.0			19.5			0.7			1.8			20.3			0.0			0.9			13.5			14.1
GRADE: COM																															
1	Region 12	13.2	13.2	13.2	6.5	6.5	6.5	19.7	19.7	19.7	0.8	0.8	0.8	1.2	1.2	1.2	21.7	21.7	21.7	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.4	0.4	0.4
1	Region 17	3.5	3.5	3.5	1.2	1.2	1.2	4.7	4.7	4.7	1.2	1.2	1.2	0.2	0.2	0.2	6.1	6.1	6.1	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8	0.8
1	Region 20	14.4	14.4	14.4	2.1	2.1	2.1	16.6	16.6	16.6	0.8	0.8	0.8	2.0	2.0	2.0	19.4	19.4	19.4	0.0	0.0	0.0	0.4	0.4	0.4	2.1	2.1	2.1	0.7	0.7	0.7
1	Region 23	27.2	27.2	27.2	20.4	20.4	20.4	47.5	47.5	47.5	0.4	0.4	0.4	0.0	0.0	0.0	47.9	47.9	47.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Ave COM	14.6			7.6			22.1			0.8			0.8			23.8			0.0			0.3			0.6			0.5		
	Min COM		3.5			1.2			4.7			0.4			0.0			6.1			0.0			0.0			0.0			0.0	
	Max COM			27.2			20.4			47.5			1.2			2.0			47.9			0.0			0.4			2.1			0.8
599 Ave white maize		4.0			2.1			6.1			0.3			0.3			6.7			0.0			0.1			0.4			0.4		
Min white maize			0.6			0.4			1.1			0.0			0.0			1.3			0.0			0.0			0.0			0.0	
Max white maize				27.2			20.4			47.5			1.2			5.7			47.9			1.3			1.3			13.5			14.1
900 Ave maize		4.1			2.2			6.3			0.3			0.3			6.8			0.1			0.1			0.3			0.3		
Min maize			0.5			0.4			1.1			0.0			0.0			1.2			0.0			0.0			0.0			0.0	
Max maize				27.2			20.4			47.5			1.2			5.7			47.9			3.3			1.6			13.5			14.1

TABLE 3: RSA GRADING OF YELLOW MAIZE (2003/2004)

Number of samples	Region	% Defective Kernels — Above 6.35 mm sieve			% Defective Kernels — 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 1																															
8	Region 10	1.1	0.6	2.9	1.0	0.5	2.7	2.0	1.2	5.7	0.2	0.1	0.2	0.0	0.0	0.1	2.2	1.2	5.9	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
25	Region 11	2.0	0.7	3.9	2.2	1.2	3.6	4.2	2.2	6.3	0.3	0.2	0.3	0.1	0.0	0.8	4.6	2.4	6.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.3
8	Region 12	4.1	3.0	6.0	2.2	1.3	3.3	6.3	4.3	8.6	0.3	0.2	0.3	0.0	0.0	0.0	6.6	4.5	8.9	0.3	0.0	2.1	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0
5	Region 13	3.6	2.6	5.3	1.7	1.4	1.8	5.2	4.2	7.0	0.3	0.2	0.3	0.3	0.0	0.9	5.8	4.4	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Region 14	4.0	3.0	5.2	1.9	1.3	3.5	5.9	4.3	8.2	0.3	0.2	0.3	0.0	0.0	0.0	6.1	4.6	8.6	0.8	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Region 15	3.5	2.9	4.1	1.9	1.7	2.1	5.3	4.6	6.2	0.3	0.3	0.3	0.0	0.0	0.0	5.6	4.9	6.5	0.6	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 16	3.8	3.8	3.8	1.8	1.8	1.8	5.6	5.6	5.6	0.3	0.3	0.3	0.0	0.0	0.0	5.8	5.8	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
4	Region 17	4.2	2.8	5.4	1.9	1.3	2.7	6.1	4.5	8.0	0.2	0.2	0.3	0.2	0.0	0.8	6.5	4.8	8.3	0.3	0.0	1.0	0.1	0.0	0.3	0.3	0.0	0.7	0.3	0.0	0.7
8	Region 18	3.9	3.0	4.5	1.9	1.3	3.1	5.9	4.7	7.3	0.3	0.2	0.3	0.2	0.0	1.3	6.4	5.0	8.2	0.0	0.0	0.0	0.1	0.0	0.4	0.2	0.0	0.7	0.5	0.0	1.4
5	Region 19	3.8	2.8	4.6	2.0	1.7	2.8	5.9	4.5	6.8	0.3	0.2	0.4	0.0	0.0	0.0	6.2	4.8	7.1	0.5	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Region 20	4.2	2.5	5.8	2.0	0.7	2.9	6.2	3.2	8.3	0.3	0.3	0.3	0.0	0.0	0.0	6.5	3.5	8.6	0.9	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 21	1.8	1.8	1.8	2.2	2.2	2.2	4.0	4.0	4.0	0.0	0.0	0.0	0.2	0.2	0.2	4.2	4.2	4.2	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.2	0.3	0.0	0.3
6	Region 22	3.0	1.2	3.8	1.5	0.9	1.8	4.5	2.9	5.6	0.3	0.2	0.3	0.3	0.0	1.4	5.1	3.2	7.0	0.0	0.0	0.0	0.1	0.0	0.3	0.1	0.0	0.3	0.2	0.0	0.7
18	Region 23	3.1	1.1	5.3	1.9	1.0	2.8	5.1	2.2	7.3	0.2	0.2	0.3	0.2	0.0	1.3	5.5	2.4	8.4	0.5	0.0	2.5	0.0	0.0	0.2	0.0	0.0	0.3	0.2	0.0	0.7
13	Region 24	2.7	1.3	4.7	1.8	0.8	2.6	4.5	2.0	5.7	0.3	0.2	0.3	0.2	0.0	0.8	5.0	2.6	6.7	0.3	0.0	1.5	0.0	0.0	0.3	0.1	0.0	0.4	0.2	0.0	0.4
15	Region 25	3.0	1.8	4.5	1.9	0.9	3.8	4.9	3.2	6.6	0.3	0.2	0.3	0.1	0.0	0.4	5.2	3.9	6.8	0.4	0.0	1.9	0.0	0.0	0.0	0.1	0.0	0.8	0.0	0.0	0.3
18	Region 26	3.5	1.7	5.2	2.0	1.3	2.8	5.5	4.0	8.0	0.3	0.2	0.3	0.3	0.0	1.2	6.1	4.8	8.3	0.4	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.7
10	Region 27	2.9	1.8	4.4	1.9	1.1	3.3	4.8	3.2	7.7	0.3	0.2	0.3	0.0	0.0	0.3	5.1	3.8	7.9	0.5	0.0	1.7	0.0	0.0	0.3	0.3	0.0	0.6	0.2	0.0	0.7
19	Region 28	3.4	2.3	5.7	2.4	1.5	3.9	5.8	4.3	8.4	0.2	0.2	0.3	0.1	0.0	1.0	6.1	4.5	8.6	0.4	0.0	1.9	0.0	0.0	0.3	0.1	0.0	0.9	0.0	0.0	0.4
12	Region 29	3.7	2.7	4.5	1.9	1.1	3.3	5.5	4.4	7.4	0.3	0.2	0.3	0.1	0.0	0.6	5.8	4.6	7.7	0.2	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6
3	Region 30	4.7	3.8	6.3	2.1	1.8	2.7	6.8	5.6	8.1	0.3	0.3	0.3	0.0	0.0	0.0	7.1	5.9	8.4	1.2	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3
7	Region 32	2.7	1.2	5.0	1.9	1.7	2.6	4.6	3.0	7.6	0.3	0.2	0.3	0.0	0.0	0.0	4.9	3.3	7.8	1.0	0.0	1.4	0.0	0.0	0.0	0.2	0.0	0.7	0.0	0.0	0.0
18	Region 34	2.4	0.9	4.8	2.1	1.1	3.7	4.5	3.0	6.9	0.3	0.2	0.3	0.1	0.0	1.1	4.9	3.3	7.1	0.7	0.0	1.7	0.0	0.0	0.3	0.1	0.0	0.4	0.2	0.0	0.7
7	Region 35	3.9	3.0	4.4	1.9	1.2	2.7	5.7	4.2	7.1	0.3	0.2	0.3	0.0	0.0	0.0	6.0	4.5	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Region 36	0.5	0.5	0.5	1.5	1.5	1.5	2.1	2.1	2.1	0.2	0.2	0.2	0.0	0.0	0.0	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
225	Ave YM 1	3.1			2.0			5.0			0.3			0.1			5.4			0.4			0.0			0.1			0.1		
	Min YM 1		0.5			0.5			1.2			0.0			0.0			1.2			0.0			0.0			0.0			0.0	
	Max YM 1			6.3			3.9			8.6			0.4			1.4			8.9			3.3			0.4			0.9			1.4

TABLE 3: RSA GRADING OF YELLOW MAIZE (2003/2004) (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 2																															
1	Region 11	5.6	5.6	5.6	3.2	3.2	3.2	8.8	8.8	8.8	0.3	0.3	0.3	0.0	0.0	0.0	9.1	9.1	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Region 13	8.1	6.0	10.3	4.2	3.5	5.0	12.3	10.0	15.3	0.4	0.3	0.5	0.3	0.0	1.0	13.0	10.3	16.8	0.3	0.0	1.0	0.1	0.0	0.4	0.5	0.0	1.0	0.4	0.0	0.7
3	Region 14	7.7	4.1	11.8	2.0	1.2	3.2	9.7	5.8	13.0	0.4	0.3	0.4	0.0	0.0	0.0	10.1	6.2	13.4	0.3	0.0	1.0	0.0	0.0	0.0	0.2	0.0	0.7	0.0	0.0	0.0
3	Region 15	7.5	5.9	10.2	4.0	3.3	5.0	11.5	9.6	15.2	0.4	0.3	0.5	0.0	0.0	0.0	11.9	9.9	15.7	0.4	0.0	1.2	0.0	0.0	0.0	0.6	0.0	1.0	0.4	0.0	0.7
2	Region 16	7.3	5.3	9.3	2.6	2.0	3.2	9.9	8.6	11.3	0.4	0.3	0.4	0.0	0.0	0.0	10.3	9.0	11.7	0.0	0.0	0.0	0.4	0.0	0.8	0.4	0.0	0.8	0.0	0.0	0.0
9	Region 17	7.2	2.3	10.6	1.9	0.8	3.6	9.1	3.5	13.0	0.3	0.0	0.4	0.4	0.0	1.0	9.7	4.2	14.4	0.5	0.0	2.1	0.3	0.0	1.6	0.4	0.0	2.1	0.8	0.0	3.7
6	Region 18	6.2	4.1	9.0	2.6	1.6	3.6	8.8	5.8	12.6	0.4	0.3	0.4	0.3	0.0	0.7	9.5	6.6	13.0	0.0	0.0	0.0	0.2	0.0	0.7	0.6	0.0	1.4	1.0	0.3	2.8
4	Region 19	7.4	4.0	10.2	2.9	1.8	4.3	10.3	5.8	14.5	0.4	0.3	0.4	0.3	0.0	1.0	10.9	6.2	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.0	0.0	0.0
4	Region 20	7.1	6.2	7.8	2.7	1.5	3.5	9.8	8.6	11.4	0.4	0.3	0.4	0.0	0.0	0.0	10.1	9.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.1	0.2	0.0	0.7
2	Region 22	12.3	8.4	16.2	1.9	1.3	2.5	14.2	10.9	17.6	0.3	0.2	0.3	0.0	0.0	0.0	14.5	11.2	17.9	0.0	0.0	0.0	0.3	0.3	0.3	0.6	0.5	0.7	0.9	0.3	1.4
4	Region 23	6.2	2.9	8.8	3.0	1.0	4.4	9.2	7.3	10.4	0.3	0.3	0.4	1.3	0.0	5.0	10.9	9.8	12.5	0.1	0.0	0.5	0.1	0.0	0.4	0.3	0.0	0.7	0.7	0.0	1.8
4	Region 24	5.0	1.4	11.2	3.6	1.5	6.1	8.6	5.6	12.8	0.3	0.3	0.3	0.5	0.0	0.8	9.4	6.2	13.8	0.3	0.0	1.1	0.2	0.0	0.3	0.2	0.0	0.4	0.5	0.0	1.2
6	Region 26	6.0	2.6	9.4	3.8	1.7	7.3	9.7	6.7	12.0	0.3	0.3	0.4	0.6	0.0	2.4	10.7	6.9	14.6	0.5	0.0	1.8	0.0	0.0	0.0	0.2	0.0	0.7	0.2	0.0	0.9
3	Region 27	6.3	3.3	9.3	4.7	1.2	8.7	11.1	4.6	18.0	0.4	0.3	0.4	1.0	0.0	2.9	12.4	7.7	18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.3	1.4	0.6	0.0	1.4
8	Region 28	7.1	5.0	8.9	3.9	3.0	5.2	11.0	9.3	13.6	0.3	0.2	0.4	0.2	0.0	1.6	11.5	9.6	14.4	0.5	0.0	3.0	0.4	0.0	0.9	0.3	0.0	0.9	0.1	0.0	0.5
1	Region 29	6.2	6.2	6.2	3.6	3.6	3.6	9.8	9.8	9.8	0.3	0.3	0.3	0.8	0.0	0.8	10.8	10.8	10.8	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 34	10.0	2.8	18.0	1.5	0.8	2.5	11.5	4.4	19.1	0.2	0.1	0.4	0.8	0.0	2.4	12.6	7.1	19.3	0.8	0.0	1.4	0.3	0.0	0.8	0.3	0.0	1.3	1.3	0.5	1.9
1	Region 36	6.2	6.2	6.2	4.4	4.4	4.4	10.6	10.6	10.6	0.2	0.2	0.2	0.0	0.0	0.0	10.8	10.8	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	Ave YM 2	7.1			3.0			10.1			0.3			0.4			10.9			0.3			0.2			0.4			0.5		
	Min YM 2		1.4			0.8			3.5			0.0			0.0			4.2			0.0			0.0			0.0			0.0	
	Max YM 2			18.0			8.7			19.1			0.5			5.0			19.3			3.0			1.6			2.1			3.7

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TABLE 3: RSA GRADING OF YELLOW MAIZE (2003/2004) (continue)

Number of samples	Region	% Defective Kernels Above 6.35 mm sieve			% Defective Kernels 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	21.6	21.6	21.6	4.1	4.1	4.1	25.7	25.7	25.7	0.4	0.4	0.4	0.0	0.0	0.0	26.1	26.1	26.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.6	1.6	1.6
1	Region 14	5.7	5.7	5.7	2.1	2.1	2.1	7.8	7.8	7.8	0.6	0.6	0.6	1.7	1.7	1.7	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0
1	Region 18	21.1	21.1	21.1	4.1	4.1	4.1	25.2	25.2	25.2	0.6	0.6	0.6	0.0	0.0	0.0	25.8	25.8	25.8	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	0.7	0.7	0.7
2	Region 20	11.3	8.1	14.4	3.3	1.2	5.4	14.6	9.3	19.8	0.7	0.6	0.7	0.0	0.0	0.0	15.2	10.0	20.5	0.0	0.0	0.0	0.5	0.0	1.1	0.8	0.5	1.1	0.2	0.0	0.4
1	Region 28	14.4	14.4	14.4	6.2	6.2	6.2	20.6	20.6	20.6	0.3	0.3	0.3	0.0	0.0	0.0	21.0	21.0	21.0	0.0	0.0	0.0	0.4	0.4	0.4	0.6	0.6	0.6	0.0	0.0	0.0
6	**Ave YM 3**	14.2			3.9			18.1			0.5			0.3			18.9			0.0			0.2			0.8			0.4		
	Min YM 3		5.7			1.2			7.8			0.3			0.0			10.0			0.0			0.0			0.3			0.0	
	Max YM 3			21.6			6.2			25.7			0.7			1.7			26.1			0.0			1.1			1.2			1.6
GRADE: COM																															
1	Region 19	7.5	7.5	7.5	2.0	2.0	2.0	9.5	9.5	9.5	0.4	0.4	0.4	5.3	5.3	5.3	15.2	15.2	15.2	1.7	1.7	1.7	0.0	0.0	0.0	1.0	1.0	1.0	0.3	0.3	0.3
1	Region 20	22.5	22.5	22.5	4.7	4.7	4.7	27.2	27.2	27.2	0.9	0.9	0.9	0.0	0.0	0.0	28.0	28.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	0.0	0.0	0.0
2	**Ave COM**	15.0			3.3			18.3			0.6			2.7			21.6			0.9			0.0			1.3			0.2		
	Min COM		7.5			2.0			9.5			0.4			0.0			15.2			0.0			0.0			1.0			0.0	
	Max COM			22.5			4.7			27.2			0.9			5.3			28.0			1.7			0.0			1.7			0.3
301	**Ave yellow maize**	4.3			2.3			6.5			0.3			0.2			7.0			0.3			0.1			0.2			0.2		
	Min yellow maize		0.5			0.5			1.2			0.0			0.0			1.2			0.0			0.0			0.0			0.0	
	Max yellow maize			22.5			8.7			27.2			0.9			5.3			28.0			3.3			1.6			2.1			3.7
900	**Ave maize**	4.1			2.2			6.3			0.3			0.3			6.8			0.1			0.1			0.3			0.3		
	Min maize		0.5			0.4			1.1			0.0			0.0			1.2			0.0			0.0			0.0			0.0	
	Max maize			27.2			20.4			47.5			1.2			5.7			47.9			3.3			1.6			13.5			14.1

TABLE 4: GRADING QUALITY OF SOUTH AFRICAN WHITE MAIZE 1994/95 - 2003/04

Season	Number of samples	RSA GRADING AVERAGES		% Foreign matter	% Other colour	% Total deviation
		% Defective kernels				
		Above 6.35 mm sieve	Below 6.35 mm sieve			
1994/95	164	5.1	1.9	0.0	0.5	7.5
1995/96	142	6.3	1.9	0.0	0.3	8.5
1996/97	178	4.7	1.5	0.0	0.5	6.7
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
Weighted average		4.5	2.0	0.1	0.4	6.6

TABLE 5: GRADING QUALITY OF SOUTH AFRICAN YELLOW MAIZE 1994/95 - 2003/04

Season	Number of samples	RSA GRADING AVERAGES		% Foreign matter	% Other colour	% Total deviation
		% Defective kernels				
		Above 6.35 mm sieve	Below 6.35 mm sieve			
1994/95	175	5.6	2.4	0.1	0.3	8.3
1995/96	151	6.8	2.4	0.1	0.2	9.5
1996/97	166	4.9	1.9	0.0	0.2	7.0
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
Weighted average		4.8	2.2	0.1	0.3	7.4

TABLE 6: GRADING QUALITY OF SOUTH AFRICAN MAIZE 1994/95 - 2003/04

Season	Number of samples	RSA GRADING AVERAGES		% Foreign matter	% Other colour	% Total deviation
		% Defective kernels				
		Above 6.35 mm sieve	Below 6.35 mm sieve			
1994/95	339	5.4	2.2	0.1	0.4	7.9
1995/96	293	6.6	2.2	0.1	0.2	9.0
1996/97	344	4.8	1.7	0.0	0.4	6.9
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
Weighted average		4.6	2.0	0.2	0.3	7.0

TABLE 7: HECTOLITRE MASS (kg/hl) OF SOUTH AFRICAN MAIZE 1994/95 - 2003/04

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
1994/95	164	74.7	175	74.9	339	74.8
1995/96	142	75.3	151	74.8	293	75.0
1996/97	178	75.2	166	75.2	344	75.2
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
Weighted average		76.8		76.2		76.5

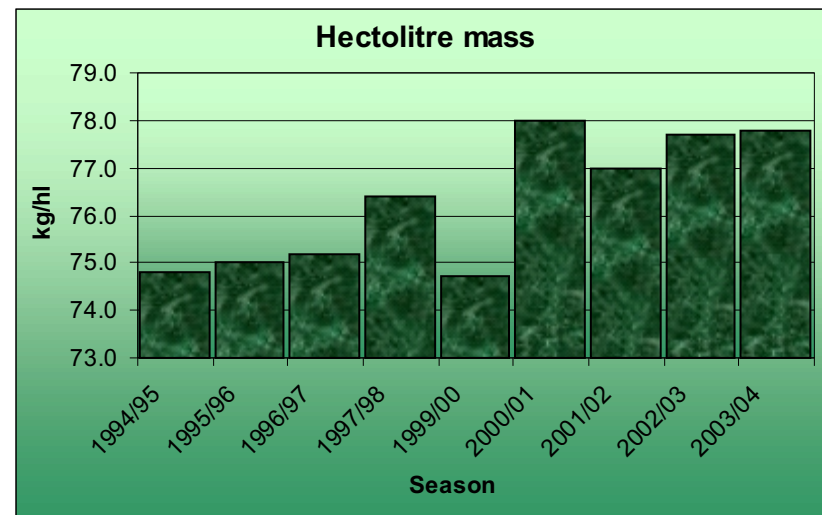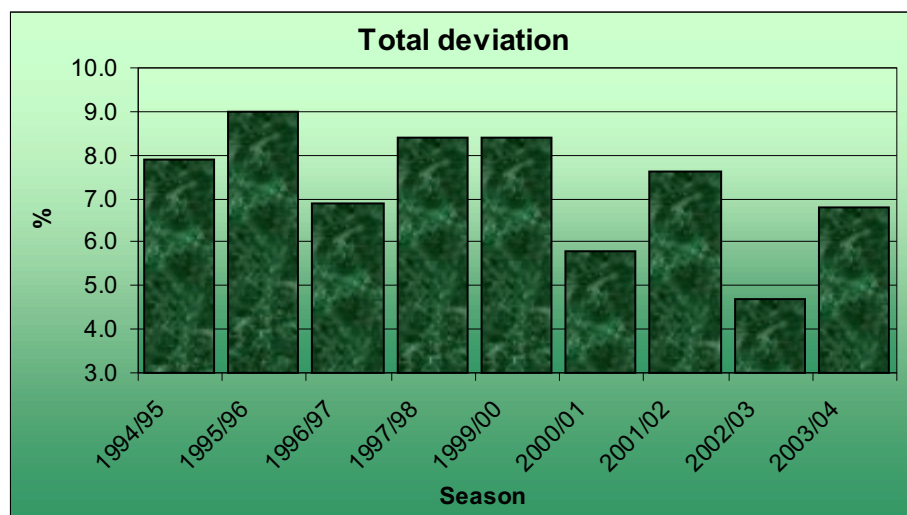

Total deviation

Hectolitre mass

TABLE 8: USA GRADING OF WHITE MAIZE (2003/04)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Bushel weight 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																
3	Region 10	0.0	0.0	0.0	2.1	0.7	2.8	0.7	0.4	1.0	80.4	79.7	81.0	0.1	0.0	0.1
7	Region 11	0.0	0.0	0.0	1.5	0.9	2.2	0.9	0.6	1.6	78.5	77.5	80.1	0.3	0.0	0.8
6	Region 12	0.0	0.0	0.0	2.7	1.9	3.0	0.9	0.6	1.2	78.4	77.1	80.2	0.3	0.0	1.4
2	Region 13	0.0	0.0	0.0	3.0	3.0	3.0	1.0	0.8	1.2	77.8	76.7	78.9	0.0	0.0	0.0
1	Region 14	0.0	0.0	0.0	2.7	2.7	2.7	0.8	0.8	0.8	77.2	77.2	77.2	0.0	0.0	0.0
2	Region 15	0.0	0.0	0.0	2.6	2.5	2.6	1.1	1.0	1.1	79.7	79.6	79.7	0.0	0.0	0.0
3	Region 16	0.0	0.0	0.0	2.8	2.6	2.9	1.1	1.0	1.3	77.3	77.0	77.9	0.0	0.0	0.0
6	Region 17	0.0	0.0	0.0	2.0	0.9	2.9	0.6	0.1	1.2	78.5	77.0	79.7	0.2	0.0	0.7
6	Region 18	0.0	0.0	0.0	2.6	1.8	3.0	1.1	0.9	1.1	78.4	77.6	79.3	0.3	0.0	1.1
5	Region 19	0.0	0.0	0.0	2.7	2.5	2.9	0.8	0.5	1.1	76.7	75.9	77.8	0.5	0.0	1.1
3	Region 20	0.0	0.0	0.0	2.7	2.4	3.0	1.1	1.0	1.2	77.2	75.8	78.2	0.2	0.0	0.6
8	Region 21	0.0	0.0	0.0	2.2	1.3	3.0	0.8	0.0	1.2	77.4	73.9	80.1	0.0	0.0	0.3
12	Region 22	0.0	0.0	0.0	2.4	1.6	3.0	1.0	0.6	1.5	79.9	77.5	81.6	0.2	0.0	1.0
47	Region 23	0.0	0.0	0.0	2.5	1.6	3.0	1.1	0.6	2.0	79.1	75.6	81.5	0.2	0.0	0.9
35	Region 24	0.0	0.0	0.0	2.3	1.5	2.9	1.1	0.5	1.9	79.3	77.0	82.6	0.2	0.0	1.9
7	Region 25	0.0	0.0	0.0	2.3	1.6	3.0	1.1	0.7	1.4	76.1	73.4	80.2	0.3	0.0	1.0
10	Region 26	0.0	0.0	0.0	2.6	2.1	2.9	1.1	0.8	1.4	77.6	74.4	79.7	0.3	0.0	1.0
4	Region 27	0.0	0.0	0.0	2.7	2.4	3.0	1.2	1.0	1.4	78.2	76.6	79.8	0.6	0.0	1.7
10	Region 28	0.0	0.0	0.0	2.8	2.5	2.9	0.8	0.5	1.1	77.5	75.2	79.4	0.0	0.0	0.3
7	Region 29	0.0	0.0	0.0	2.6	1.8	3.0	1.1	0.8	1.2	78.5	77.9	79.0	0.0	0.0	0.0
1	Region 30	0.0	0.0	0.0	1.9	1.9	1.9	0.9	0.9	0.9	76.8	76.8	76.8	0.0	0.0	0.0
3	Region 32	0.0	0.0	0.0	2.6	2.3	3.0	1.1	0.9	1.1	78.2	77.5	78.7	0.0	0.0	0.0
22	Region 34	0.0	0.0	0.0	2.5	1.4	3.0	1.1	0.0	2.0	77.4	74.5	79.0	0.3	0.0	1.6
1	Region 35	0.0	0.0	0.0	3.0	3.0	3.0	1.0	1.0	1.0	79.7	79.7	79.7	0.0	0.0	0.0
2	Region 36	0.0	0.0	0.0	1.7	1.1	2.3	0.9	0.7	1.0	79.4	78.8	79.9	0.1	0.0	0.2
213	Ave US 1	0.0			2.4			1.0			78.4			0.2		
	Min US 1		0.0			0.7			0.0			73.4			0.0	
	Max US 1			0.0			3.0			2.0			82.6			1.9
GRADE: US 2																
3	Region 8	0.0	0.0	0.0	3.7	3.1	4.8	0.7	0.4	1.1	78.3	77.1	80.1	0.2	0.0	0.6
1	Region 11	0.0	0.0	0.0	1.3	1.3	1.3	2.2	2.2	2.2	81.1	81.1	81.1	0.4	0.4	0.4
1	Region 12	0.0	0.0	0.0	3.5	3.5	3.5	1.1	1.1	1.1	77.6	77.6	77.6	0.0	0.0	0.0
3	Region 13	0.0	0.0	0.0	3.6	3.1	4.3	1.0	0.7	1.2	77.6	76.3	78.5	1.0	0.0	2.0
12	Region 14	0.0	0.0	0.0	3.6	3.2	4.1	1.1	0.9	1.5	77.9	76.3	79.6	0.3	0.0	1.2
4	Region 15	0.0	0.0	0.0	3.9	3.1	4.9	1.1	0.9	1.3	79.0	78.5	79.7	0.2	0.0	0.9
9	Region 16	0.0	0.0	0.0	3.8	3.4	4.6	1.1	0.7	1.4	78.7	75.0	81.2	0.2	0.0	0.9
10	Region 17	0.0	0.0	0.0	3.8	3.1	4.8	1.0	0.1	1.7	78.1	76.2	79.6	0.4	0.0	1.2
9	Region 18	0.0	0.0	0.0	3.6	3.2	4.4	1.3	0.7	2.5	77.9	75.8	79.2	0.3	0.0	1.0
3	Region 19	0.0	0.0	0.0	3.9	3.6	4.4	1.0	0.9	1.1	78.5	77.9	79.7	0.0	0.0	0.0
5	Region 20	0.0	0.0	0.0	3.8	2.4	5.0	1.2	0.5	2.5	75.7	71.2	78.5	0.5	0.0	0.8
14	Region 21	0.0	0.0	0.0	3.9	3.2	4.8	0.9	0.0	2.2	77.9	75.4	79.7	0.2	0.0	1.1
19	Region 22	0.0	0.0	0.0	3.6	1.4	4.9	0.9	0.2	2.2	79.5	75.7	81.1	0.2	0.0	1.2
61	Region 23	0.0	0.0	0.0	3.8	1.4	5.0	1.4	0.6	2.9	79.0	71.6	81.7	0.2	0.0	1.2
22	Region 24	0.0	0.0	0.0	3.8	2.6	4.8	1.1	0.6	2.8	79.6	76.3	83.2	0.1	0.0	0.7
4	Region 25	0.0	0.0	0.0	3.0	2.0	4.1	1.7	0.9	2.7	76.2	74.7	77.2	0.3	0.0	0.7
7	Region 26	0.0	0.0	0.0	3.7	3.1	4.9	1.3	0.8	2.0	76.1	71.2	79.0	0.4	0.0	1.0
5	Region 27	0.0	0.0	0.0	3.8	3.1	4.7	1.0	0.7	1.3	78.7	77.1	80.3	0.1	0.0	0.3

TABLE 8: USA GRADING OF WHITE MAIZE (2003/04)
(continue)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Bushel weight kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
6	Region 28	0.0	0.0	0.0	3.9	3.2	4.8	1.0	0.7	1.3	78.2	75.7	79.4	0.7	0.0	2.0
2	Region 29	0.0	0.0	0.0	3.2	2.3	4.0	2.0	1.4	2.6	76.9	75.8	78.0	0.0	0.0	0.0
1	Region 30	0.0	0.0	0.0	4.3	4.3	4.3	1.8	1.8	1.8	75.0	75.0	75.0	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	4.3	4.3	4.3	1.1	1.1	1.1	77.1	77.1	77.1	0.4	0.0	0.4
19	Region 34	0.0	0.0	0.0	3.6	3.1	5.0	1.2	0.2	2.4	78.0	75.7	79.4	0.4	0.0	1.6
5	Region 35	0.0	0.0	0.0	3.3	3.1	3.6	1.0	0.9	1.2	77.2	76.5	78.1	0.0	0.0	0.0
5	Region 36	0.0	0.0	0.0	3.7	3.5	3.9	1.5	1.0	2.3	78.8	77.5	79.7	0.2	0.0	0.6
231	Ave US 2	0.0			3.7			1.2			78.5			0.2		
	Min US 2		0.0			1.3			0.0			71.2			0.0	
	Max US 2			0.0			5.0			2.9			83.2			2.0
GRADE: US 3																
1	Region 11	0.0	0.0	0.0	6.3	6.3	6.3	2.4	2.4	2.4	76.7	76.7	76.7	1.3	1.3	1.3
4	Region 12	0.0	0.0	0.0	6.2	6.0	6.7	1.3	0.8	1.9	77.9	76.1	79.8	0.5	0.0	1.9
2	Region 13	0.0	0.0	0.0	6.2	6.1	6.2	1.1	0.8	1.4	78.2	77.8	78.5	0.8	0.5	1.1
3	Region 14	0.0	0.0	0.0	5.9	5.3	6.6	1.3	0.8	1.8	78.8	77.5	79.6	0.5	0.0	1.1
1	Region 15	0.0	0.0	0.0	6.5	6.5	6.5	1.3	1.3	1.3	78.8	78.8	78.8	1.1	1.1	1.1
7	Region 17	0.0	0.0	0.0	5.9	5.1	6.7	0.7	0.4	1.5	77.7	74.7	79.7	0.4	0.0	0.9
6	Region 18	0.0	0.0	0.0	5.8	5.5	6.1	1.5	1.1	2.0	77.8	76.2	78.8	0.6	0.0	1.3
4	Region 19	0.0	0.0	0.0	5.8	5.2	6.6	1.3	1.1	1.4	75.9	74.9	76.5	1.2	1.0	1.5
3	Region 20	0.0	0.0	0.0	6.2	5.8	6.4	1.1	0.4	2.0	75.9	75.2	77.1	0.2	0.0	0.5
3	Region 21	0.0	0.0	0.0	4.5	2.7	7.0	2.6	0.9	3.5	76.5	75.0	78.3	0.0	0.0	0.0
8	Region 22	0.0	0.0	0.0	5.8	5.1	6.8	1.4	0.6	3.1	78.1	75.8	79.4	0.0	0.0	0.0
14	Region 23	0.0	0.0	0.0	5.5	2.2	7.0	1.5	0.6	3.7	79.5	77.1	81.0	0.1	0.0	0.7
8	Region 24	0.0	0.0	0.0	5.5	5.2	6.3	1.5	0.8	2.7	79.3	76.3	82.6	0.2	0.0	0.8
1	Region 25	0.0	0.0	0.0	5.2	5.2	5.2	1.6	1.6	1.6	76.8	76.8	76.8	0.7	0.7	0.7
2	Region 26	0.0	0.0	0.0	5.2	5.1	5.2	1.8	1.6	2.0	78.3	77.5	79.0	0.6	0.0	1.2
2	Region 27	0.0	0.0	0.0	6.3	5.9	6.7	1.0	0.9	1.1	78.4	77.5	79.2	0.4	0.4	0.4
1	Region 28	0.0	0.0	0.0	7.0	7.0	7.0	1.3	1.3	1.3	79.0	79.0	79.0	0.8	0.8	0.8
1	Region 29	0.0	0.0	0.0	5.1	5.1	5.1	1.8	1.8	1.8	77.2	77.2	77.2	0.7	0.7	0.7
1	Region 31	0.0	0.0	0.0	6.2	6.2	6.2	1.3	1.3	1.3	79.4	79.4	79.4	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	5.1	5.1	5.1	2.1	2.1	2.1	76.8	76.8	76.8	0.0	0.0	0.0
5	Region 34	0.0	0.0	0.0	5.4	3.0	6.8	2.1	1.3	3.4	76.9	72.3	79.8	0.3	0.0	1.0
1	Region 35	0.0	0.0	0.0	3.4	3.4	3.4	1.4	1.4	1.4	69.0	69.0	69.0	0.0	0.0	0.0
1	Region 36	0.0	0.0	0.0	6.4	6.4	6.4	3.8	3.8	3.8	79.4	79.4	79.4	0.0	0.0	0.0
80	Ave US 3	0.0			5.7			1.5			78.0			0.3		
	Min US 3		0.0			2.2			0.4			69.0			0.0	
	Max US 3			0.0			7.0			3.8			82.6			1.9
GRADE: US 4																
1	Region 12	0.0	0.0	0.0	7.4	7.4	7.4	0.8	0.8	0.8	79.9	79.9	79.0	0.0	0.0	0.0
3	Region 14	0.0	0.0	0.0	8.3	8.0	8.8	1.6	0.4	2.8	77.6	76.7	78.9	0.8	0.0	1.3
2	Region 15	0.0	0.0	0.0	8.6	7.2	9.9	1.8	1.8	1.9	79.0	78.1	79.9	0.0	0.0	0.0
1	Region 16	0.0	0.0	0.0	7.2	7.2	7.2	2.7	2.7	2.7	80.2	80.2	80.2	0.0	0.0	0.0
5	Region 18	0.0	0.0	0.0	8.5	7.2	9.5	2.1	1.4	3.3	75.6	74.4	78.1	0.7	0.0	1.3
1	Region 19	0.0	0.0	0.0	8.2	8.2	8.2	1.2	1.2	1.2	74.8	74.8	74.8	0.0	0.0	0.0
1	Region 20	0.0	0.0	0.0	8.8	8.8	8.8	1.8	1.8	1.8	74.4	74.4	74.4	0.0	0.0	0.0
2	Region 21	0.0	0.0	0.0	8.2	7.2	9.1	1.4	1.3	1.6	77.6	77.0	78.1	0.3	0.0	0.7
4	Region 22	0.0	0.0	0.0	7.6	7.1	8.0	1.5	0.8	2.5	77.2	75.0	79.4	0.6	0.0	1.2
12	Region 23	0.2	0.0	1.0	6.6	1.9	9.7	2.1	0.9	4.8	77.5	74.8	79.4	0.3	0.0	1.0

TABLE 8: USA GRADING OF WHITE MAIZE (2003/04)
(continue)

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Bushel weight kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
3	Region 24	0.0	0.0	0.0	8.4	7.6	9.0	0.9	0.8	1.0	76.6	73.8	79.2	0.3	0.0	0.8
2	Region 25	0.0	0.0	0.0	9.2	9.0	9.3	1.3	0.8	1.7	65.8	63.8	67.7	0.0	0.0	0.0
3	Region 28	0.0	0.0	0.0	7.6	7.1	8.4	2.8	1.7	4.8	76.5	74.7	78.5	0.3	0.0	0.9
3	Region 34	0.0	0.0	0.0	8.1	7.2	8.7	0.7	0.3	1.0	76.5	74.8	77.9	0.2	0.0	0.7
43	Ave US 4	0.1			7.8			1.7			76.6			0.3		
	Min US 4		0.0			1.9			0.3			63.8			0.0	
	Max US 4			1.0			9.9			4.8			80.2			1.3
GRADE: US 5																
1	Region 12	0.0	0.0	0.0	14.7	14.7	14.7	2.3	2.3	2.3	74.9	74.9	74.9	1.2	1.2	1.2
1	Region 13	0.0	0.0	0.0	13.7	13.7	13.7	1.3	1.3	1.3	75.2	75.2	75.2	1.8	1.8	1.8
2	Region 14	0.0	0.0	0.0	11.2	10.2	12.3	2.0	1.1	2.8	76.0	74.1	77.8	1.3	1.3	1.3
1	Region 17	2.1	2.1	2.1	9.9	9.9	9.9	2.4	2.4	2.4	76.6	76.6	76.6	1.0	1.0	1.0
2	Region 19	0.0	0.0	0.0	11.8	11.3	12.3	1.5	1.4	1.6	74.7	74.1	75.2	0.7	0.0	1.3
4	Region 20	0.0	0.0	0.0	12.9	10.9	14.8	2.0	0.9	3.1	72.9	66.9	75.4	0.9	0.0	2.0
1	Region 21	2.9	2.9	2.9	12.6	12.6	12.6	2.0	2.0	2.0	75.0	75.0	75.0	0.0	0.0	0.0
2	Region 22	0.0	0.0	0.0	11.8	10.3	13.3	1.4	1.3	1.5	75.7	73.8	77.6	0.0	0.0	0.0
4	Region 23	0.0	0.0	0.0	10.8	10.7	10.9	1.2	0.8	1.4	76.8	74.8	79.7	0.0	0.0	0.0
2	Region 24	0.0	0.0	0.0	11.4	11.3	11.5	1.2	0.9	1.6	78.5	78.5	78.5	0.2	0.0	0.4
1	Region 29	0.0	0.0	0.0	11.6	11.6	11.6	2.8	2.8	2.8	75.0	75.0	75.0	0.0	0.0	0.0
1	Region 30	0.0	0.0	0.0	13.4	13.4	13.4	1.0	1.0	1.0	74.8	74.8	74.8	0.0	0.0	0.0
22	Ave US 5	0.2			12.0			1.7			75.5			0.5		
	Min US 5		0.0			9.9			0.8			66.9			0.0	
	Max US 5			2.9			14.8			3.1			79.7			2.0
GRADE: MIXED GRADE																
1	Region 12	0.0	0.0	0.0	9.2	9.2	9.2	1.8	1.8	1.8	76.3	76.3	76.3	2.2	2.2	2.2
1	Region 21	0.0	0.0	0.0	2.7	2.7	2.7	1.4	1.4	1.4	76.7	76.7	76.7	2.1	2.1	2.1
1	Region 22	0.0	0.0	0.0	4.6	4.6	4.6	0.7	0.7	0.7	78.1	78.1	78.1	2.2	2.2	2.2
1	Region 23	0.0	0.0	0.0	2.5	2.5	2.5	1.9	1.9	1.9	79.2	79.2	79.2	5.7	5.7	5.7
4	Ave Mixed Grade	0.0			4.8			1.5			1.5			77.6		
	Min Mixed Grade		0.0			2.5			0.7			0.7			76.3	
	Max Mixed Grade			0.0			9.2			1.9			1.9			79.2
GRADE: SAMPLE GRADE																
1	Region 22	0.0	0.0	0.0	15.1	15.1	15.1	0.8	0.8	0.8	76.7	76.7	76.7	1.7	1.7	1.7
1	Region 23	6.5	6.5	6.5	27.2	27.2	27.2	17.2	17.2	17.2	75.6	75.6	75.6	0.0	0.0	0.0
1	Region 27	0.0	0.0	0.0	16.4	16.4	16.4	2.0	2.0	2.0	74.0	74.0	74.0	0.0	0.0	0.0
1	Region 29	0.0	0.0	0.0	3.6	3.6	3.6	8.4	8.4	8.4	77.6	77.6	77.6	0.4	0.4	0.4
	Region 34	0.0	0.0	0.0	9.6	9.6	9.6	3.6	3.6	3.6	77.2	77.2	77.2	0.4	0.4	0.4
6	Ave Sample Grade	1.1			13.6			6.0			76.4			0.5		
	Min Sample Grade		0.0			3.1			0.0			74.0			0.0	
	Max Sample Grade			6.5			27.2			17.2			78.4			1.7
599	Ave white maize	0.0			4.2			1.3			78.1			0.3		
	Min white maize		0.0			0.7			0.0			63.8			0.0	
	Max white maize			6.5			27.2			17.2			83.2			5.7
900	Ave maize	0.0			4.3			1.3			77.8			0.3		
	Min maize		0.0			0.7			0.0			63.8			0.0	
	Max maize			6.5			27.2			17.2			83.2			6.2

TABLE 9: USA GRADING OF YELLOW MAIZE (2003/04)

Number of samples	Region	Damaged kernels % Heat damaged ave.	min.	max.	Damaged kernels % Total damaged ave.	min.	max.	% Broken corn and foreign material ave.	min.	max.	Bushel weight kg/hl ave.	min.	max.	Other colour % ave.	min.	max.
	GRADE: US 1															
7	Region 10	0.0	0.0	0.0	1.1	0.9	1.2	0.5	0.4	0.8	79.0	78.5	79.7	0.0	0.0	0.1
18	Region 11	0.0	0.0	0.0	1.6	0.9	3.0	1.4	0.8	1.9	78.3	77.0	79.7	0.0	0.0	0.8
1	Region 12	0.0	0.0	0.0	3.0	3.0	3.0	0.9	0.9	0.9	76.8	76.8	76.8	0.0	0.0	0.0
2	Region 13	0.0	0.0	0.0	3.0	2.9	3.0	0.9	0.6	1.1	77.3	77.0	77.5	0.3	0.0	0.6
2	Region 17	0.0	0.0	0.0	2.7	2.5	3.0	0.9	0.7	1.1	77.1	76.3	77.9	0.2	0.0	0.4
1	Region 18	0.0	0.0	0.0	2.0	2.0	2.0	1.2	1.2	1.2	75.3	75.3	75.3	0.0	0.0	0.0
1	Region 19	0.0	0.0	0.0	3.0	3.0	3.0	1.1	1.1	1.1	73.9	73.9	73.9	0.0	0.0	0.0
1	Region 20	0.0	0.0	0.0	2.6	2.6	2.6	0.7	0.7	0.7	78.4	78.4	78.4	0.7	0.7	0.7
1	Region 21	0.0	0.0	0.0	1.7	1.7	1.7	1.6	1.6	1.6	79.4	79.4	79.4	0.2	0.2	0.2
2	Region 22	0.0	0.0	0.0	1.8	1.2	2.3	1.1	1.1	1.1	78.2	78.0	78.4	0.0	0.0	0.0
9	Region 23	0.0	0.0	0.0	2.3	1.3	3.0	1.2	0.7	1.6	76.9	76.5	77.9	0.4	0.0	1.0
7	Region 24	0.0	0.0	0.0	2.0	1.3	2.8	1.2	0.6	1.6	77.3	74.8	79.9	0.3	0.0	0.7
5	Region 25	0.0	0.0	0.0	2.2	1.9	2.5	1.1	0.7	1.3	76.2	74.3	77.8	0.2	0.0	0.6
4	Region 26	0.0	0.0	0.0	2.6	1.8	3.0	1.1	0.9	1.5	77.7	75.7	79.2	1.1	0.0	1.8
6	Region 27	0.0	0.0	0.0	2.4	1.9	2.8	1.1	0.8	1.7	77.5	76.3	78.8	0.2	0.0	0.6
4	Region 28	0.0	0.0	0.0	2.6	2.3	3.0	1.3	1.1	1.7	77.7	76.8	78.8	0.4	0.0	1.0
1	Region 29	0.0	0.0	0.0	2.8	2.8	2.8	1.0	1.0	1.0	77.5	77.5	77.5	0.0	0.0	0.0
4	Region 32	0.0	0.0	0.0	2.0	1.2	2.6	1.2	1.1	1.3	76.9	75.4	77.8	0.4	0.0	0.7
11	Region 34	0.0	0.0	0.0	2.2	1.2	2.9	1.2	0.8	1.8	76.7	74.7	78.1	0.5	0.0	2.4
1	Region 35	0.0	0.0	0.0	3.0	3.0	3.0	0.9	0.9	0.9	75.9	75.9	75.9	0.0	0.0	0.0
1	Region 36	0.0	0.0	0.0	1.3	1.3	1.3	0.8	0.8	0.8	77.9	77.9	77.9	0.0	0.0	0.0
89	**Ave US 1**	**0.0**			**2.1**			**1.1**			**77.5**			**0.3**		
	Min US 1		**0.0**			**0.9**			**0.4**			**73.9**			**0.0**	
	Max US 1			**0.0**			**3.0**			**1.9**			**79.9**			**2.4**
	GRADE: US 2															
1	Region 10	0.0	0.0	0.0	3.3	3.3	3.3	1.3	1.3	1.3	75.8	75.8	75.8	0.0	0.0	0.0
7	Region 11	0.0	0.0	0.0	3.4	1.6	4.0	1.3	1.0	2.1	78.1	77.0	79.6	0.0	0.0	0.3
4	Region 12	0.0	0.0	0.0	4.1	3.4	5.0	1.0	0.8	1.1	77.3	76.6	79.0	0.3	0.0	1.0
2	Region 13	0.0	0.0	0.0	3.8	3.2	4.5	1.0	0.7	1.2	76.6	76.2	77.0	0.4	0.0	0.9
6	Region 14	0.0	0.0	0.0	3.6	3.1	4.7	1.1	0.9	1.4	77.8	76.3	79.0	0.3	0.0	1.0
3	Region 15	0.0	0.0	0.0	3.7	3.2	4.4	1.2	1.1	1.4	78.2	77.4	78.8	0.0	0.0	0.0
1	Region 16	0.0	0.0	0.0	3.9	3.9	3.9	1.2	1.2	1.2	77.9	77.9	77.9	0.0	0.0	0.0
3	Region 17	0.0	0.0	0.0	3.8	3.4	4.5	0.9	0.6	1.2	76.7	75.0	77.6	0.0	0.0	0.0
10	Region 18	0.0	0.0	0.0	4.1	3.2	4.6	1.3	1.0	1.9	76.3	75.0	77.4	0.4	0.0	1.3
5	Region 19	0.0	0.0	0.0	4.3	4.1	4.8	1.2	1.0	1.4	77.4	76.1	78.1	0.1	0.0	0.7
1	Region 20	0.0	0.0	0.0	4.5	4.5	4.5	1.2	1.2	1.2	76.6	76.6	76.6	0.0	0.0	0.0
4	Region 22	0.0	0.0	0.0	3.6	3.3	3.9	1.0	0.7	1.2	77.8	74.3	79.4	0.5	0.0	0.0
8	Region 23	0.0	0.0	0.0	3.7	2.9	4.9	1.5	0.9	3.0	76.5	70.8	78.5	0.8	0.0	5.0
7	Region 24	0.0	0.0	0.0	3.4	1.6	4.8	1.4	0.8	2.7	77.4	75.7	78.8	0.3	0.0	0.8
10	Region 25	0.0	0.0	0.0	3.6	2.0	4.6	1.2	0.7	2.3	76.8	74.5	77.9	0.3	0.0	1.9
15	Region 26	0.0	0.0	0.0	3.7	2.6	5.0	1.4	0.4	2.2	77.9	73.8	79.2	0.3	0.0	1.3
4	Region 27	0.0	0.0	0.0	3.6	3.2	4.3	1.1	0.9	1.3	77.2	76.3	78.4	0.8	0.0	2.9
14	Region 28	0.0	0.0	0.0	3.8	3.2	4.8	1.3	0.6	2.2	77.2	75.0	79.4	0.2	0.0	1.0
11	Region 29	0.0	0.0	0.0	3.9	3.3	4.6	1.2	0.8	1.9	77.7	75.9	80.1	0.1	0.0	0.6
2	Region 30	0.0	0.0	0.0	4.4	3.9	4.9	1.2	1.1	1.2	77.7	76.5	78.9	0.0	0.0	0.0
2	Region 32	0.0	0.0	0.0	3.1	3.1	3.2	1.1	1.1	1.1	78.2	77.9	78.5	0.7	0.7	0.7
8	Region 34	0.0	0.0	0.0	2.9	1.0	4.9	1.5	0.8	2.2	77.8	76.3	78.9	0.6	0.0	1.1

TABLE 9: USA GRADING OF YELLOW MAIZE (2003/04)
(continue)

Number of samples	Region	Damaged kernels % Heat damaged			% Total damaged			% Broken corn and foreign material			Bushel weight kg/hl			Other colour %		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
5	Region 35	0.0	0.0	0.0	4.1	3.6	4.6	1.2	1.0	1.6	76.0	72.3	78.9	0.0	0.0	0.0
133	Ave US 2	0.0			3.7			1.3			77.3			0.3		
	Min US 2		0.0			1.0			0.4			70.8			0.0	
	Max US 2			0.0			5.0			3.0			80.1			5.0
GRADE: US 3																
1	Region 11	0.0	0.0	0.0	5.7	5.7	5.7	1.9	1.9	1.9	77.4	77.4	77.4	0.0	0.0	0.0
4	Region 12	0.0	0.0	0.0	6.0	5.1	6.8	1.1	0.8	1.4	78.7	77.9	79.7	0.0	0.0	0.0
1	Region 13	0.0	0.0	0.0	5.5	5.5	5.5	1.2	1.2	1.2	77.2	77.2	77.2	0.0	0.0	0.0
3	Region 14	0.0	0.0	0.0	5.5	5.3	5.8	1.5	1.2	2.0	76.2	74.8	77.6	1.0	0.0	1.7
2	Region 15	0.0	0.0	0.0	6.7	6.6	6.7	1.7	1.4	2.0	77.5	76.3	78.7	0.3	0.0	0.7
1	Region 16	0.0	0.0	0.0	6.4	6.4	6.4	1.6	1.6	1.6	77.5	77.5	77.5	0.0	0.0	0.0
2	Region 17	0.0	0.0	0.0	5.4	5.3	5.5	1.4	1.3	1.5	76.9	75.4	78.3	0.4	0.0	0.8
1	Region 19	0.0	0.0	0.0	6.4	6.4	6.4	2.0	2.0	2.0	73.9	73.9	73.9	0.0	0.0	0.0
2	Region 20	0.0	0.0	0.0	6.3	6.0	6.5	1.6	1.5	1.6	76.0	75.7	76.3	0.0	0.0	0.0
4	Region 23	0.0	0.0	0.0	6.0	5.2	6.8	1.6	1.1	2.2	77.9	76.7	79.0	0.4	0.0	1.3
1	Region 24	0.0	0.0	0.0	5.8	5.8	5.8	1.6	1.6	1.6	76.8	76.8	76.8	0.7	0.7	0.7
2	Region 26	0.0	0.0	0.0	5.8	5.3	6.3	1.9	1.6	2.2	77.2	76.5	77.8	0.0	0.0	0.0
2	Region 27	0.0	0.0	0.0	5.8	5.1	6.6	1.8	1.1	2.6	74.6	70.8	78.4	0.0	0.0	0.0
2	Region 28	0.0	0.0	0.0	6.0	5.2	6.7	1.9	1.2	2.5	76.1	73.6	78.5	0.0	0.0	0.0
1	Region 29	0.0	0.0	0.0	6.3	6.3	6.3	2.1	2.1	2.1	75.4	75.4	75.4	0.8	0.8	0.8
1	Region 30	0.0	0.0	0.0	6.5	6.5	6.5	1.2	1.2	1.2	75.7	75.7	75.7	0.0	0.0	0.0
1	Region 32	0.0	0.0	0.0	5.2	5.2	5.2	1.5	1.5	1.5	79.4	79.4	79.4	0.0	0.0	0.0
1	Region 35	0.0	0.0	0.0	4.1	4.1	4.1	1.4	1.4	1.4	69.1	69.1	69.1	0.0	0.0	0.0
32	Ave US 3	0.0			5.9			1.6			76.7			0.2		
	Min US 3		0.0			4.1			0.8			69.1			0.0	
	Max US 3			0.0			6.8			2.6			79.7			1.7
GRADE: US 4																
1	Region 12	0.0	0.0	0.0	8.1	8.1	8.1	2.1	2.1	2.1	75.0	75.0	75.0	0.7	0.7	0.7
1	Region 14	0.0	0.0	0.0	8.0	8.0	8.0	1.6	1.6	1.6	75.4	75.4	75.4	0.0	0.0	0.0
1	Region 16	0.0	0.0	0.0	9.7	9.7	9.7	1.0	1.0	1.0	74.5	74.5	74.5	0.0	0.0	0.0
4	Region 17	0.0	0.0	0.0	8.9	8.4	9.8	0.7	0.2	1.7	77.4	75.3	78.7	0.3	0.0	0.7
3	Region 18	0.0	0.0	0.0	8.3	7.6	9.0	1.9	1.6	2.2	74.1	73.2	75.7	0.0	0.0	0.0
1	Region 19	0.0	0.0	0.0	9.1	9.1	9.1	1.4	1.4	1.4	77.8	77.8	77.8	0.0	0.0	0.0
4	Region 20	0.0	0.0	0.0	7.9	7.2	8.4	1.3	0.7	2.2	74.2	68.0	77.5	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	8.4	8.4	8.4	1.5	1.5	1.5	77.9	77.9	77.9	0.0	0.0	0.0
1	Region 23	0.0	0.0	0.0	8.9	8.9	8.9	0.9	0.9	0.9	74.3	74.3	74.3	0.0	0.0	0.0
1	Region 24	0.0	0.0	0.0	1.9	1.9	1.9	4.7	4.7	4.7	75.0	75.0	75.0	0.0	0.0	0.0
3	Region 26	0.0	0.0	0.0	7.5	4.2	9.6	2.5	1.2	4.4	78.5	77.5	80.1	0.8	0.0	2.4
6	Region 28	0.0	0.0	0.0	8.1	7.5	9.8	1.9	1.0	4.8	77.0	76.2	77.9	0.5	0.0	1.6
1	Region 34	0.0	0.0	0.0	9.2	9.2	9.2	1.7	1.7	1.7	76.5	76.5	76.5	1.3	1.3	1.3
1	Region 36	0.0	0.0	0.0	6.6	6.6	6.6	4.6	4.6	4.6	78.5	78.5	78.5	0.0	0.0	0.0
29	Ave US 4	0.0			8.0			1.8			76.2			0.3		
	Min US 4		0.0			1.9			0.2			68.0			0.0	
	Max US 4			0.0			9.8			4.8			80.1			2.4
GRADE: US 5																
1	Region 12	0.0	0.0	0.0	12.0	12.0	12.0	2.0	2.0	2.0	72.8	72.8	72.8	1.0	1.0	1.0
1	Region 14	0.0	0.0	0.0	12.0	12.0	12.0	0.7	0.7	0.7	76.5	76.5	76.5	0.0	0.0	0.0
1	Region 15	0.0	0.0	0.0	10.8	10.8	10.8	3.0	3.0	3.0	76.3	76.3	76.3	0.0	0.0	0.0

Number of samples	Region	Damaged kernels						% Broken corn and foreign material			Bushel weight kg/hl			Other colour %		
		% Heat damaged			% Total damaged											
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
2	Region 17	0.0	0.0	0.0	10.4	10.2	10.7	1.6	1.3	1.8	75.1	73.9	76.3	1.3	1.2	1.3
1	Region 19	0.0	0.0	0.0	12.5	12.5	12.5	1.7	1.7	1.7	74.4	74.4	74.4	1.0	1.0	1.0
1	Region 24	0.0	0.0	0.0	11.4	11.4	11.4	1.1	1.1	1.1	77.2	77.2	77.2	0.8	0.8	0.8
1	Region 27	0.0	0.0	0.0	9.7	9.7	9.7	5.9	5.9	5.9	74.9	74.9	74.9	0.0	0.0	0.0
1	Region 28	0.0	0.0	0.0	10.9	10.9	10.9	2.4	2.4	2.4	73.5	73.5	73.5	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	10.3	10.3	10.3	0.0	0.0	0.0	76.6	76.6	76.6	0.0	0.0	0.0
10	Ave US 5	0.0			11.0			2.0			75.2			0.5		
	Min US 5		0.0			9.7			0.0			72.8			0.0	
	Max US 5			0.0			12.5			5.9			77.2			1.3
GRADE: MIXED GRADE																
1	Region 19	0.0	0.0	0.0	8.3	8.3	8.3	1.5	1.5	1.5	74.1	74.1	74.1	6.2	6.2	6.2
1	Ave Mixed Grade	0.0			8.3			1.5			74.1			6.2		
	Min Mixed Grade		0.0			8.3			1.5			74.1			6.2	
	Max Mixed Grade			0.0			8.3			1.5			74.1			6.2
GRADE: SAMPLE GRADE																
1	Region 12	0.0	0.0	0.0	21.9	21.9	21.9	2.5	2.5	2.5	74.9	74.9	74.9	0.0	0.0	0.0
1	Region 18	0.0	0.0	0.0	21.3	21.3	21.3	2.5	2.5	2.5	75.2	75.2	75.2	0.0	0.0	0.0
2	Region 20	0.0	0.0	0.0	19.2	15.3	23.0	1.8	1.8	1.8	72.9	70.4	75.4	0.0	0.0	0.0
1	Region 22	0.0	0.0	0.0	16.2	16.2	16.2	1.0	1.0	1.0	75.4	75.4	75.4	0.0	0.0	0.0
1	Region 28	0.0	0.0	0.0	16.0	16.0	16.0	3.9	3.9	3.9	76.2	76.2	76.2	0.0	0.0	0.0
1	Region 34	0.0	0.0	0.0	18.1	18.1	18.1	0.7	0.7	0.7	75.7	75.7	75.7	0.0	0.0	0.0
7	Ave Sample Grade	0.0			18.8			2.0			74.7			0.0		
	Min Sample Grade		0.0			15.3			0.7			70.4			0.0	
	Max Sample Grade			0.0			23.0			3.9			76.2			0.0
301	Ave yellow maize	0.0			4.5			1.4			77.0			0.3		
	Min yellow maize		0.0			0.9			0.0			68.0			0.0	
	Max yellow maize			0.0			23.0			5.9			80.1			6.2
900	Ave maize	0.0			4.3			1.3			77.8			0.3		
	Min maize		0.0			0.7			0.0			63.8			0.0	
	Max maize			6.5			27.2			17.2			83.2			6.2

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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

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.

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

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2003/04

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1										
3	Region 8	3.9	3.7	4.1	8.9	8.6	9.5	75.1	74.7	75.4
3	Region 10	3.8	3.7	3.8	9.0	8.8	9.3	75.8	75.5	75.9
8	Region 11	4.0	3.9	4.1	9.2	9.0	9.4	75.1	74.8	75.4
6	Region 12	3.9	3.8	4.0	9.2	8.8	9.7	75.2	74.9	75.5
4	Region 13	4.0	3.9	4.1	9.0	8.8	9.1	75.2	74.9	75.5
12	Region 14	3.9	3.7	4.0	9.1	8.8	9.5	75.2	74.8	75.7
6	Region 15	3.9	3.8	4.0	9.3	9.1	9.5	75.4	74.9	75.8
11	Region 16	4.0	3.8	4.2	9.2	8.9	9.6	75.2	74.8	75.7
13	Region 17	3.9	3.8	4.1	9.0	8.5	9.6	75.3	75.1	75.8
14	Region 18	3.9	3.9	4.1	9.0	8.8	9.3	75.1	74.8	75.3
8	Region 19	3.9	3.8	4.0	9.0	8.8	9.2	75.2	74.8	75.7
7	Region 20	4.0	3.9	4.1	8.9	8.8	9.0	75.2	74.7	75.6
21	Region 21	4.0	3.8	4.2	9.1	8.7	9.5	75.2	74.8	75.9
33	Region 22	4.0	3.7	4.1	9.2	8.9	9.8	75.1	74.6	75.8
97	Region 23	3.9	3.7	4.2	9.3	8.6	10.0	75.2	74.6	76.1
57	Region 24	4.0	3.7	4.3	9.2	8.7	9.7	75.3	74.8	76.3
10	Region 25	4.0	3.8	4.2	8.8	7.9	9.2	75.1	74.6	75.6
15	Region 26	4.0	3.9	4.3	9.0	8.6	9.5	75.3	74.8	75.7
10	Region 27	4.0	3.8	4.2	9.2	8.9	9.7	75.3	74.9	75.6
16	Region 28	3.9	3.8	4.1	9.0	8.8	9.2	75.2	74.6	75.7
7	Region 29	4.0	3.9	4.1	9.1	8.8	9.4	75.2	74.7	75.7
1	Region 30	3.9	3.9	3.9	9.0	9.0	9.0	74.9	74.9	74.9
4	Region 32	3.9	3.7	4.0	8.9	8.6	9.4	75.1	74.7	75.2
40	Region 34	4.0	3.7	4.1	9.0	8.7	9.7	75.1	74.3	75.7
7	Region 35	3.9	3.7	4.1	8.9	8.6	9.3	75.3	74.7	76.1
6	Region 36	4.0	3.8	4.1	9.0	8.7	9.3	75.1	74.2	75.5
419	Ave WM 1	4.0			9.1			75.2		
	Min WM 1		3.7			7.9			74.2	
	Max WM 1			4.3			10.0			76.3

TABLE 13: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2003/04

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 1										
8	Region 10	3.8	3.5	3.9	8.8	8.6	8.9	75.2	74.8	75.8
25	Region 11	3.7	3.6	3.9	8.9	8.6	9.2	75.4	74.6	76.3
8	Region 12	4.1	3.9	4.3	9.4	9.1	9.9	75.0	74.7	75.4
5	Region 13	4.0	4.0	4.1	9.1	8.9	9.3	74.9	74.7	75.3
7	Region 14	4.0	3.8	4.1	9.2	8.7	9.7	75.1	74.9	75.4
3	Region 15	3.9	3.6	4.1	9.1	8.7	9.4	75.5	74.8	76.3
1	Region 16	4.1	4.1	4.1	9.1	9.1	9.1	74.8	74.8	74.8
4	Region 17	3.9	3.6	4.3	9.1	8.9	9.7	75.1	74.5	75.7
8	Region 18	3.9	3.7	4.1	9.0	8.8	9.1	74.9	74.6	75.6
5	Region 19	4.0	3.8	4.2	9.0	8.8	9.2	74.8	74.2	75.2
3	Region 20	4.0	4.0	4.1	9.0	8.9	9.2	75.1	75.0	75.1
1	Region 21	3.7	3.7	3.7	9.0	9.0	9.0	75.3	75.3	75.3
6	Region 22	4.0	3.6	4.2	9.5	9.1	9.8	75.0	74.6	75.7
18	Region 23	4.0	3.8	4.2	9.1	8.9	9.4	75.1	74.7	75.8
13	Region 24	3.9	3.5	4.2	9.0	8.4	9.4	75.2	74.6	76.1
15	Region 25	3.9	3.6	4.0	8.9	8.5	9.3	75.0	74.3	75.2
18	Region 26	4.1	3.8	4.3	9.1	8.4	9.6	75.0	74.5	75.4
10	Region 27	4.0	3.7	4.2	9.0	8.8	9.3	75.0	74.7	75.5
19	Region 28	3.9	3.7	4.1	9.1	8.7	9.7	75.1	74.5	75.7
12	Region 29	4.0	3.7	4.2	9.0	8.6	9.4	75.0	74.7	75.6
3	Region 30	3.9	3.8	4.1	9.2	9.1	9.5	74.8	74.8	74.9
7	Region 32	4.0	3.9	4.1	9.1	8.9	9.6	74.9	74.7	75.3
18	Region 34	4.0	3.8	4.2	9.1	8.7	9.4	74.9	74.5	75.6
7	Region 35	3.8	3.6	4.1	8.8	8.3	9.1	75.3	74.4	76.6
1	Region 36	3.6	3.6	3.6	8.8	8.8	8.8	75.3	75.3	75.3
225	Ave YM 1	3.9			9.0			75.1		
	Min YM 1		3.5			8.3			74.2	
	Max YM 1			4.3			9.9			76.6

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2003/04 (continue)

Number of samples	Region	% (db) Fat ave.	min.	max.	% (db) Protein ave.	min.	max.	% (db) Starch ave.	min.	max.
GRADE: WM 2										
1	Region 11	4.1	4.1	4.1	9.4	9.4	9.4	74.9	74.9	74.9
7	Region 12	4.0	3.8	4.2	9.4	9.0	10.2	75.1	74.5	75.7
3	Region 13	3.9	3.9	4.0	9.0	8.9	9.1	75.3	75.1	75.5
7	Region 14	3.9	3.8	4.1	9.1	8.8	9.6	75.1	74.4	75.5
2	Region 15	3.9	3.9	4.0	9.3	9.2	9.3	75.3	75.1	75.4
1	Region 16	4.0	4.0	4.0	9.3	9.3	9.3	75.7	75.7	75.7
7	Region 17	3.9	3.8	4.1	9.0	8.7	9.2	75.2	75.1	75.6
11	Region 18	3.9	3.7	4.0	9.0	8.6	10.1	75.1	74.8	75.6
5	Region 19	3.8	3.7	3.9	9.1	8.9	9.2	75.1	74.9	75.4
5	Region 20	3.9	3.9	4.0	8.8	8.7	8.9	75.1	74.7	75.5
7	Region 21	3.9	3.8	4.1	9.2	8.8	9.5	75.2	74.9	75.6
10	Region 22	3.9	3.8	4.1	9.2	8.8	9.7	75.2	74.8	75.7
40	Region 23	3.9	3.8	4.2	9.3	8.9	9.9	75.2	74.5	76.2
12	Region 24	4.0	3.7	4.6	9.0	8.5	9.4	75.1	74.7	75.7
4	Region 25	3.9	3.7	4.2	8.8	8.5	9.0	75.2	74.9	75.5
4	Region 26	4.0	4.0	4.1	9.3	8.8	9.6	75.2	74.9	75.5
1	Region 27	3.9	3.9	3.9	8.8	8.8	8.8	75.3	75.3	75.3
4	Region 28	4.0	3.9	4.0	9.2	8.9	9.4	75.2	74.9	75.4
2	Region 29	3.9	3.8	4.0	8.8	8.7	8.9	75.1	74.8	75.3
1	Region 30	4.0	4.0	4.0	9.1	9.1	9.1	75.1	75.1	75.1
1	Region 31	4.1	4.1	4.1	9.4	9.4	9.4	75.1	75.1	75.1
1	Region 32	3.8	3.8	3.8	9.0	9.0	9.0	75.3	75.3	75.3
10	Region 34	4.0	3.9	4.2	9.1	8.6	9.3	75.1	74.5	76.1
2	Region 36	3.9	3.9	3.9	8.7	8.6	8.8	75.0	74.9	75.0
148	Ave WM 2	3.9			9.2			75.2		
	Min WM 2		3.7			8.5			74.4	
	Max WM 2			4.6			10.2			76.2

TABLE 13: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2003/04 (continue)

Number of samples	Region	% (db) Fat ave.	min.	max.	% (db) Protein ave.	min.	max.	% (db) Starch ave.	min.	max.
GRADE: YM 2										
1	Region 11	3.7	3.7	3.7	8.8	8.8	8.8	75.4	75.4	75.4
3	Region 12	4.0	3.9	4.2	9.0	8.8	9.2	74.9	74.7	75.1
3	Region 14	4.0	3.9	4.1	8.8	8.7	8.9	75.0	74.7	75.2
3	Region 15	3.9	3.8	4.1	9.1	8.8	9.4	75.1	74.7	75.4
2	Region 16	4.0	4.0	4.1	8.9	8.8	9.0	75.0	74.8	75.1
9	Region 17	4.0	3.9	4.2	9.2	8.8	9.5	74.9	74.6	75.3
6	Region 18	4.0	3.8	4.2	9.0	8.9	9.2	74.7	74.3	75.0
4	Region 19	4.0	3.7	4.3	9.1	8.9	9.4	74.9	74.8	75.0
4	Region 20	4.0	3.9	4.0	9.0	8.8	9.2	74.9	74.6	75.0
2	Region 22	4.0	4.0	4.1	9.1	9.0	9.2	74.6	74.5	74.6
4	Region 23	4.1	3.8	4.4	9.0	8.2	9.4	75.0	74.4	75.3
4	Region 24	4.0	3.7	4.2	8.7	8.4	8.9	74.9	74.5	75.3
6	Region 26	3.9	3.6	4.1	9.1	8.8	9.5	74.9	74.3	75.5
3	Region 27	4.1	3.9	4.3	9.3	9.0	9.5	75.0	74.8	75.1
8	Region 28	4.0	3.9	4.2	9.0	8.8	9.2	74.9	74.5	75.2
1	Region 29	4.1	4.1	4.1	8.7	8.7	8.7	74.3	74.3	74.3
4	Region 34	3.9	3.8	4.1	9.0	8.9	9.2	74.9	74.8	75.0
1	Region 36	3.7	3.7	3.7	8.4	8.4	8.4	75.2	75.2	75.2
68	Ave YM 2	4.0			9.0			74.9		
	Min YM 2		3.6			8.2			74.3	
	Max YM 2			4.4			9.5			75.5

TABLE 12: NUTRITIONAL VALUES OF WHITE MAIZE ACCORDING TO GRADE 2003/04 (continue)

Number of samples	Region	Fat % (db) ave.	min.	max.	Protein % (db) ave.	min.	max.	Starch % (db) ave.	min.	max.
	GRADE: WM 3									
1	Region 13	3.9	3.9	3.9	8.8	8.8	8.8	75.4	75.4	75.4
2	Region 14	3.9	3.9	3.9	9.0	9.0	9.0	75.3	75.1	75.4
1	Region 15	3.7	3.7	3.7	9.2	9.2	9.2	75.4	75.4	75.4
1	Region 16	3.8	3.8	3.8	9.0	9.0	9.0	75.1	75.1	75.1
3	Region 17	3.9	3.8	4.0	9.0	8.9	9.2	75.3	75.0	75.5
1	Region 18	3.9	3.9	3.9	9.1	9.1	9.1	75.1	75.1	75.1
2	Region 19	4.0	3.9	4.2	8.9	8.8	9.0	74.9	74.8	75.0
3	Region 20	3.9	3.8	4.1	9.1	8.9	9.4	75.0	74.7	75.2
1	Region 21	4.1	4.1	4.1	9.5	9.5	9.5	75.0	75.0	75.0
4	Region 22	3.9	3.8	4.0	9.2	8.9	9.4	75.3	75.0	75.5
2	Region 23	3.9	3.8	4.0	9.2	9.1	9.2	75.1	75.0	75.2
1	Region 24	4.0	4.0	4.0	9.6	9.6	9.6	75.4	75.4	75.4
1	Region 27	3.8	3.8	3.8	8.8	8.8	8.8	75.1	75.1	75.1
3	Region 29	4.0	3.9	4.1	8.9	8.7	9.3	74.9	74.6	75.2
1	Region 30	4.1	4.1	4.1	9.1	9.1	9.1	74.8	74.8	74.8
1	Region 34	3.8	3.8	3.8	9.1	9.1	9.1	74.9	74.9	74.9
28	Ave WM 3	3.9			9.1			75.1		
	Min WM 3		3.7			8.7			74.6	
	Max WM 3			4.2			9.6			75.5
	GRADE: COM									
1	Region 12	3.7	3.7	3.7	8.8	8.8	8.8	74.8	74.8	74.8
1	Region 17	3.9	3.9	3.9	9.1	9.1	9.1	74.9	74.9	74.9
1	Region 20	3.8	3.8	3.8	8.6	8.6	8.6	75.4	75.4	75.4
1	Region 23	3.8	3.8	3.8	9.1	9.1	9.1	74.6	74.6	74.6
4	Ave COM	3.8			8.9			74.9		
	Min COM		3.7			8.6			74.6	
	Max COM			3.9			9.1			75.4
599	Ave White	4.0			9.1			75.2		
	Min White		3.7			7.9			74.2	
	Max White			4.6			10.2			76.3
900	Ave Maize	4.0			9.1			75.1		
	Min Maize		3.5			7.9			74.2	
	Max Maize			4.6			10.2			76.6

TABLE 13: NUTRITIONAL VALUES OF YELLOW MAIZE ACCORDING TO GRADE 2003/04 (continue)

Number of samples	Region	Fat % (db) ave.	min.	max.	Protein % (db) ave.	min.	max.	Starch % (db) ave.	min.	max.
	GRADE: YM 3									
1	Region 12	3.9	3.9	3.9	9.1	9.1	9.1	74.5	74.5	74.5
1	Region 14	4.1	4.1	4.1	9.2	9.2	9.2	75.0	75.0	75.0
1	Region 18	4.0	4.0	4.0	8.9	8.9	8.9	74.6	74.6	74.6
2	Region 20	4.0	4.0	4.1	9.2	9.1	9.2	75.0	74.8	75.1
1	Region 28	3.9	3.9	3.9	8.9	8.9	8.9	74.9	74.9	74.9
6	Ave WM 3	4.0			9.1			74.8		
	Min WM 3		3.9			8.9			74.5	
	Max WM 3			4.1			9.2			75.1
	GRADE: COM									
1	Region 19	4.0	4.0	4.0	9.0	9.0	9.0	75.1	75.1	75.1
1	Region 20	3.9	3.9	3.9	8.8	8.8	8.8	75.0	75.0	75.0
2	Ave COM	4.0			8.9			75.1		
	Min COM		3.9			8.8			75.0	
	Max COM			4.0			9.0			75.1
301	Ave Yellow	4.0			9.0			75.0		
	Min Yellow		3.5			8.2			74.2	
	Max Yellow			4.4			9.9			76.6
900	Ave Maize	4.0			9.1			75.1		
	Min Maize		3.5			7.9			74.2	
	Max Maize			4.6			10.2			76.6

TABLE 14: NUTRITIONAL VALUES OF WHITE MAIZE 2003/2004

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	WHITE									
3	Region 8	3.9	3.7	4.1	8.9	8.6	9.5	75.1	74.7	75.4
3	Region 10	3.8	3.7	3.8	9.0	8.8	9.3	75.8	75.5	75.9
9	Region 11	4.0	3.9	4.1	9.2	9.0	9.4	75.1	74.8	75.4
14	Region 12	3.9	3.7	4.2	9.3	8.8	10.2	75.1	74.5	75.7
8	Region 13	3.9	3.9	4.1	9.0	8.8	9.1	75.3	74.9	75.5
21	Region 14	3.9	3.7	4.1	9.1	8.8	9.6	75.2	74.4	75.7
9	Region 15	3.9	3.7	4.0	9.3	9.1	9.5	75.4	74.9	75.8
13	Region 16	4.0	3.8	4.2	9.2	8.9	9.6	75.3	74.8	75.7
24	Region 17	3.9	3.8	4.1	9.0	8.5	9.6	75.2	74.9	75.8
26	Region 18	3.9	3.7	4.1	9.0	8.6	10.1	75.1	74.8	75.6
15	Region 19	3.9	3.7	4.2	9.0	8.8	9.2	75.1	74.8	75.7
16	Region 20	3.9	3.8	4.1	8.9	8.6	9.4	75.1	74.7	75.6
29	Region 21	4.0	3.8	4.2	9.1	8.7	9.5	75.2	74.8	75.9
47	Region 22	4.0	3.7	4.1	9.2	8.8	9.8	75.1	74.6	75.8
140	Region 23	3.9	3.7	4.2	9.3	8.6	10.0	75.2	74.5	76.2
70	Region 24	4.0	3.7	4.6	9.2	8.5	9.7	75.3	74.7	76.3
14	Region 25	4.0	3.7	4.2	8.8	7.9	9.2	75.2	74.6	75.6
19	Region 26	4.0	3.9	4.3	9.1	8.6	9.6	75.2	74.8	75.7
12	Region 27	3.9	3.8	4.2	9.1	8.8	9.7	75.3	74.9	75.6
20	Region 28	3.9	3.8	4.1	9.1	8.8	9.4	75.2	74.6	75.7
12	Region 29	4.0	3.8	4.1	9.0	8.7	9.4	75.1	74.6	75.7
3	Region 30	4.0	3.9	4.1	9.1	9.0	9.1	74.9	74.8	75.1
1	Region 31	4.1	4.1	4.1	9.4	9.4	9.4	75.1	75.1	75.1
5	Region 32	3.9	3.7	4.0	8.9	8.6	9.4	75.1	74.7	75.3
51	Region 34	4.0	3.7	4.2	9.0	8.6	9.7	75.1	74.3	76.1
7	Region 35	3.9	3.7	4.1	8.9	8.6	9.3	75.3	74.7	76.1
8	Region 36	3.9	3.8	4.1	8.9	8.6	9.3	75.0	74.2	75.5
599	Ave white	4.0			9.1			75.2		
	Min white		3.7			7.9			74.2	
	Max white			4.6			10.2			76.3

TABLE 15: NUTRITIONAL VALUES OF YELLOW MAIZE 2003/2004

Number of samples	Region	% (db) Fat			% (db) Protein			% (db) Starch		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	YELLOW									
8	Region 10	3.8	3.5	3.9	8.8	8.6	8.9	75.2	74.8	75.8
26	Region 11	3.7	3.6	3.9	8.9	8.6	9.2	75.4	74.6	76.3
12	Region 12	4.1	3.9	4.3	9.3	8.8	9.9	75.0	74.5	75.4
5	Region 13	4.0	4.0	4.1	9.1	8.9	9.3	74.9	74.7	75.3
11	Region 14	4.0	3.8	4.1	9.1	8.7	9.7	75.1	74.7	75.4
6	Region 15	3.9	3.6	4.1	9.1	8.7	9.4	75.3	74.7	76.3
3	Region 16	4.1	4.0	4.1	9.0	8.8	9.1	74.9	74.8	75.1
13	Region 17	4.0	3.6	4.3	9.1	8.8	9.7	75.0	74.5	75.7
15	Region 18	4.0	3.7	4.2	9.0	8.8	9.2	74.8	74.3	75.6
10	Region 19	4.0	3.7	4.3	9.0	8.8	9.4	74.9	74.2	75.2
10	Region 20	4.0	3.9	4.1	9.0	8.8	9.2	75.0	74.6	75.1
1	Region 21	3.7	3.7	3.7	9.0	9.0	9.0	75.3	75.3	75.3
8	Region 22	4.0	3.6	4.2	9.4	9.0	9.8	74.9	74.5	75.7
22	Region 23	4.0	3.8	4.4	9.1	8.2	9.4	75.1	74.4	75.8
17	Region 24	3.9	3.5	4.2	8.9	8.4	9.4	75.2	74.5	76.1
15	Region 25	3.9	3.6	4.0	8.9	8.5	9.3	75.0	74.3	75.2
24	Region 26	4.0	3.6	4.3	9.1	8.4	9.6	75.0	74.3	75.5
13	Region 27	4.0	3.7	4.3	9.1	8.8	9.5	75.0	74.7	75.5
28	Region 28	4.0	3.7	4.2	9.0	8.7	9.7	75.0	74.5	75.7
13	Region 29	4.0	3.7	4.2	8.9	8.6	9.4	75.0	74.3	75.6
3	Region 30	3.9	3.8	4.1	9.2	9.1	9.5	74.8	74.8	74.9
7	Region 32	4.0	3.9	4.1	9.1	8.9	9.6	74.9	74.7	75.3
22	Region 34	4.0	3.8	4.2	9.1	8.7	9.4	74.9	74.5	75.6
7	Region 35	3.8	3.6	4.1	8.8	8.3	9.1	75.3	74.4	76.6
2	Region 36	3.6	3.6	3.7	8.6	8.4	8.8	75.3	75.2	75.3
301	Ave yellow	4.0			9.0			75.0		
	Min yellow		3.5			8.2			74.2	
	Max yellow			4.4			9.9			76.6

TABLE 16: AVERAGE NUTRITIONAL VALUES OF SOUTH AFRICAN MAIZE OVER THE PAST TEN MARKETING SEASONS (PERCENTAGE ON A DRY BASIS)

Season	White maize			Yellow maize		
	Fat	Protein	Starch	Fat	Protein	Starch
1994/95	4.1	8.6	74.5	4.4	8.8	73.8
1995/96	3.8	9.9	73.6	4.2	9.9	73.2
1996/97	3.9	8.7	74.1	4.2	8.7	71.8
1997/98	4.0	8.9	73.6	4.1	9.0	74.2
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	74.2	4.2	8.7	74.5
2001/02	4.2	8.9	75.4	4.1	8.9	75.7
2002/03	4.1	9.2	75.4	4.1	9.2	76.0
2003/04	4.0	9.1	75.2	4.0	9.0	75.1
Average	**4.0**	**8.9**	**74.0**	**4.2**	**9.0**	**73.8**

TABLE 17: AVERAGE NUTRITIONAL VALUES OF SOUTH AFRICAN MAIZE (1994/95 - 2003/04)

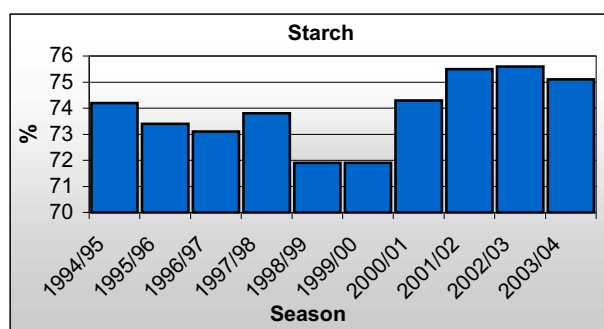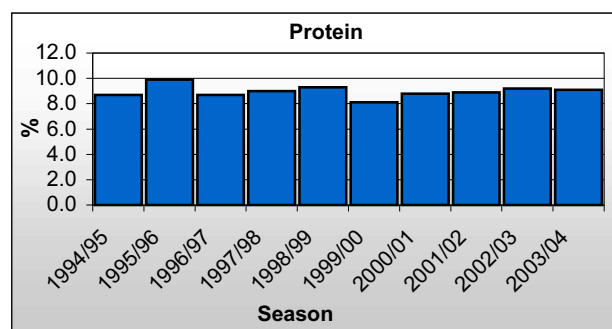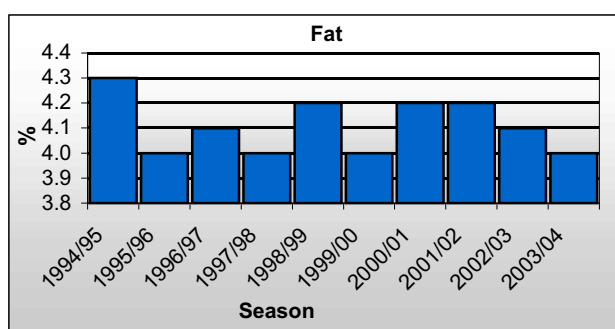| Season	Fat %	Protein %	Starch %
1994/95	4.3	8.7	74.2
1995/96	4.0	9.9	73.4
1996/97	4.1	8.7	73.1
1997/98	4.0	9.0	73.8
1998/99	4.2	9.3	71.9
1999/00	4.0	8.1	71.9
2000/01	4.2	8.8	74.3
2001/02	4.2	8.9	75.5
2002/03	4.1	9.2	75.6
2003/04	4.0	9.1	75.1

Fat

Protein

Starch

29

TABLE 18: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2003/2004

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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																									
3	Region 8	78.3	77.1	80.1	33.2	27.5	41.5	17.8	17.0	49.2	50.0	45.2	56.4	32.3	2.5	53.1	1.1	0.4	1.6	0.6	0.2	0.9	8	6	9
3	Region 10	80.4	79.7	81.0	32.8	31.9	33.6	4.0	2.5	6.7	66.9	56.9	78.0	29.1	15.3	40.6	1.0	0.5	1.9	0.7	0.2	1.5	3	0	6
8	Region 11	78.8	77.5	81.1	36.8	31.0	41.3	32.2	9.2	47.8	51.8	44.9	60.3	16.0	4.9	40.7	1.0	0.5	2.1	0.8	0.3	1.5	6	4	10
6	Region 12	78.4	77.1	80.2	35.4	32.6	38.4	27.5	20.6	33.7	63.7	58.2	70.9	8.8	5.3	12.3	1.1	0.1	1.7	0.8	0.1	1.4	5	1	8
4	Region 13	78.1	76.7	78.9	34.3	30.9	37.8	30.7	29.4	33.8	60.7	59.2	62.8	8.6	6.9	11.1	1.2	0.6	1.6	0.9	0.5	1.1	4	2	6
12	Region 14	77.9	76.3	79.6	35.3	31.0	38.4	32.3	19.5	45.4	58.8	46.9	63.5	8.9	3.5	17.0	1.6	0.5	2.9	1.2	0.4	2.6	5	1	9
6	Region 15	79.2	78.5	79.7	35.0	32.3	42.9	24.1	11.2	32.3	57.5	54.4	60.8	18.5	6.9	28.9	1.0	0.5	1.7	0.8	0.4	1.3	4	0	13
11	Region 16	78.1	75.0	81.2	38.5	30.9	58.8	32.3	18.0	41.7	59.8	48.4	67.3	8.0	3.1	14.7	1.0	0.2	1.7	0.7	0.1	1.3	3	2	4
13	Region 17	78.0	76.2	79.7	35.9	30.6	39.5	29.8	4.7	42.7	61.7	51.5	74.1	8.6	2.2	21.2	1.0	0.3	2.0	0.7	0.2	1.4	7	2	26
14	Region 18	78.1	75.8	79.3	37.1	33.2	39.6	34.0	22.9	45.1	59.5	49.5	67.5	6.5	3.9	9.6	1.1	0.5	2.1	0.8	0.2	1.4	6	3	12
8	Region 19	77.4	75.9	79.7	35.1	30.0	42.4	28.5	15.1	34.3	62.5	58.5	72.9	9.0	5.1	13.4	1.4	0.1	2.6	1.1	0.0	2.1	5	2	13
7	Region 20	75.9	71.2	78.5	37.5	35.2	41.7	37.3	32.0	51.9	57.9	46.0	63.4	4.8	2.1	7.3	1.2	0.4	1.9	0.9	0.3	1.6	4	1	7
21	Region 21	77.9	73.9	80.1	36.7	32.0	54.2	27.9	16.3	43.0	61.9	49.8	67.9	10.2	1.3	17.6	1.6	0.5	3.3	1.2	0.5	2.7	7	2	26
33	Region 22	79.7	77.5	81.6	38.5	32.4	51.1	34.0	21.0	41.2	58.3	38.1	68.6	7.7	3.5	12.7	0.9	0.2	2.7	0.6	0.1	1.5	6	0	18
97	Region 23	79.2	75.6	81.7	37.0	24.0	50.5	30.2	2.5	52.8	58.8	42.1	74.6	11.0	1.5	34.6	1.1	0.2	4.0	0.8	0.0	3.1	6	0	19
57	Region 24	79.5	76.3	83.2	36.1	26.9	44.2	27.6	0.4	65.5	56.2	33.4	71.6	16.1	1.0	64.9	1.1	0.1	5.6	0.8	0.0	5.4	6	0	58
10	Region 25	76.3	73.4	80.2	32.8	29.0	38.0	19.1	5.5	40.9	64.2	48.5	72.8	16.7	10.6	30.8	1.4	0.4	3.3	0.9	0.4	1.9	11	3	37
15	Region 26	77.1	71.2	79.7	34.1	29.6	39.9	20.4	3.6	34.5	66.4	57.3	75.5	13.1	7.1	20.9	1.4	0.6	3.6	0.9	0.3	2.2	8	4	18
10	Region 27	78.6	76.6	80.3	36.8	34.2	40.0	26.6	18.4	34.5	65.2	60.1	73.6	8.2	5.4	10.8	1.2	0.4	2.5	0.9	0.1	2.0	8	3	28
16	Region 28	77.8	75.2	79.4	36.2	31.9	40.6	37.6	15.4	57.1	53.5	36.8	70.8	8.9	2.5	24.4	1.9	0.3	5.3	1.3	0.2	3.7	8	2	23
7	Region 29	78.3	77.9	78.7	37.3	30.4	39.2	27.4	16.7	44.1	63.5	51.2	71.9	9.1	4.7	17.6	0.8	0.3	1.3	0.5	0.2	1.0	7	3	14
1	Region 30	76.8	76.8	76.8	35.3	35.3	35.3	34.6	34.6	34.6	59.5	59.5	59.5	5.9	5.9	5.9	0.9	0.9	0.9	0.8	0.8	0.8	2	2	2
4	Region 32	77.9	77.1	78.7	36.3	33.5	38.7	34.0	23.3	42.0	58.7	53.9	65.5	7.3	4.1	11.2	0.8	0.2	1.2	0.5	0.0	0.8	5	4	6
40	Region 34	77.7	74.5	79.8	37.0	23.9	44.5	33.6	16.6	65.5	58.3	33.0	70.7	8.1	1.5	16.7	1.0	0.0	1.7	0.7	0.0	1.5	8	1	16
7	Region 35	76.4	69.0	79.7	34.9	29.0	41.2	27.4	16.9	41.1	60.6	54.7	69.6	12.0	2.2	28.4	1.5	0.9	2.1	1.1	0.6	1.5	4	1	7
6	Region 36	78.9	77.5	79.9	33.9	30.3	39.2	16.1	4.7	28.9	61.0	52.4	67.7	22.9	6.8	42.9	2.7	1.3	8.0	1.8	0.7	5.3	11	4	30
419	Ave WM 1	78.5			36.4			29.6			59.1			11.2			1.2			0.9			7		
	Min WM 1		69.0			23.9			0.4			33.0			1.0			0.0			0.0			0	
	Max WM 1			83.2			58.8			65.5			78.0			64.9			8.0			5.4			58

TABLE 18: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2																									
1	Region 11	76.7	76.7	76.7	35.4	35.4	35.4	33.5	33.5	33.5	55.4	55.4	55.4	11.1	11.1	11.1	2.1	2.1	2.1	1.8	1.8	1.8	8	8	8
7	Region 12	78.0	76.1	79.9	36.1	29.6	41.0	32.8	16.1	48.4	59.0	46.6	69.1	8.2	4.5	16.7	2.5	1.2	1.9	1.8	0.9	3.7	6	3	16
3	Region 13	77.5	76.3	78.5	36.3	34.3	39.6	26.1	20.5	32.6	64.5	59.1	69.7	9.3	8.3	9.9	1.6	0.9	2.3	1.3	0.8	1.7	4	2	5
7	Region 14	78.2	76.7	79.6	35.9	30.9	41.7	30.6	19.6	53.5	60.9	43.2	70.5	8.5	3.3	12.6	1.4	0.8	1.2	1.2	0.8	1.8	4	0	10
2	Region 15	78.5	78.1	78.8	33.4	32.5	34.2	30.6	29.4	31.7	59.8	59.4	60.1	9.7	8.2	11.2	0.9	0.6	0.6	0.6	0.5	0.7	6	1	11
1	Region 16	80.3	80.3	80.3	37.8	37.8	37.8	32.5	32.5	32.5	60.7	60.7	60.7	6.8	6.8	6.8	0.6	0.6	1.9	0.6	0.6	0.6	5	5	5
7	Region 17	78.5	76.8	79.7	37.2	33.3	40.1	30.0	22.1	36.5	62.5	57.5	67.3	7.5	5.2	12.0	1.0	0.0	6.0	0.8	0.0	1.5	5	1	9
11	Region 18	77.1	74.4	78.8	36.1	29.6	39.6	30.9	15.2	43.9	60.9	52.5	70.5	8.1	3.5	14.3	1.9	0.8	2.8	1.6	0.8	4.9	5	1	14
5	Region 19	75.7	74.8	76.5	35.6	32.4	37.8	32.8	13.9	42.8	60.6	51.8	70.1	7.1	4.4	16.0	2.1	1.2	2.8	1.6	0.9	2.1	5	1	10
5	Region 20	76.2	74.4	78.2	34.5	30.5	36.5	33.5	26.0	41.1	59.7	53.9	64.6	6.7	5.0	9.4	1.6	0.7	3.9	1.2	0.6	2.3	4	1	6
7	Region 21	76.7	75.0	78.3	35.9	32.8	40.7	34.1	26.3	52.9	58.8	44.3	64.9	7.1	2.8	8.8	2.0	0.9	4.2	1.3	0.6	2.1	11	4	26
10	Region 22	77.5	75.0	79.4	36.7	32.8	40.8	35.1	21.4	49.7	57.6	46.7	69.8	7.4	3.6	10.5	1.8	0.5	3.3	1.3	0.4	3.2	5	1	9
40	Region 23	78.1	71.6	81.4	36.6	27.4	42.6	32.9	2.4	63.2	55.7	33.9	69.9	11.4	2.0	50.9	1.4	0.5	13.1	1.0	0.4	2.5	7	3	17
12	Region 24	78.1	73.8	80.3	34.9	28.9	39.6	25.5	0.4	60.7	54.6	33.8	66.4	19.9	4.4	61.2	2.2	0.1	7.7	1.5	0.1	8.3	10	1	47
4	Region 25	70.8	63.8	76.8	29.0	23.7	36.3	18.6	8.7	30.4	66.6	61.3	71.3	14.8	8.3	23.7	3.8	1.1	2.4	2.7	1.0	4.9	7	4	9
4	Region 26	77.1	75.2	79.0	34.1	31.0	36.9	17.2	14.0	19.6	67.2	63.9	71.5	15.6	11.1	18.8	1.4	0.4	2.0	0.9	0.3	1.8	6	2	10
1	Region 27	77.5	77.5	77.5	36.8	36.8	36.8	38.3	38.3	38.3	55.0	55.0	55.0	6.7	6.7	6.7	2.0	2.0	15.0	1.4	1.4	1.4	8	8	8
4	Region 28	77.1	74.7	79.0	35.2	31.6	40.6	29.7	19.1	44.4	60.9	49.7	74.1	9.5	5.9	13.4	5.3	1.2	1.5	3.5	1.0	9.5	19	3	57
2	Region 29	76.5	75.8	77.2	35.3	33.8	36.8	33.8	33.4	34.2	58.7	58.4	58.9	7.6	6.9	8.2	1.3	1.1	0.7	0.9	0.8	1.0	6	2	9
1	Region 30	75.0	75.0	75.0	34.7	34.7	34.7	29.8	29.8	29.8	62.2	62.2	62.2	8.0	8.0	8.0	0.7	0.7	0.3	0.5	0.5	0.5	3	3	3
1	Region 31	79.4	79.4	79.4	41.7	41.7	41.7	64.6	64.6	64.6	31.0	31.0	31.0	4.4	4.4	4.4	0.3	0.3	1.3	0.0	0.0	0.0	8	8	8
1	Region 32	76.8	76.8	76.8	33.9	33.9	33.9	21.9	21.9	21.9	69.2	69.2	69.2	8.9	8.9	8.9	1.3	1.3	3.2	1.0	1.0	1.0	6	6	6
10	Region 34	76.8	72.3	79.0	35.6	28.3	40.4	29.7	7.0	48.3	59.5	47.7	75.1	10.8	4.0	23.1	1.2	0.2	2.1	0.9	0.2	2.2	6	2	17
2	Region 36	79.3	79.2	79.4	31.7	29.1	34.2	8.3	4.4	12.1	54.8	48.5	61.0	37.0	26.9	47.1	1.8	1.5	98.5	1.0	0.7	1.3	3	2	4
148	Ave WM 2	77.4			35.8			30.7			58.6			10.8			1.8			1.3			7		
	Min WM 2		63.8			23.7			0.4			31.0			2.0			0.0			0.0			0	
	Max WM 2			81.4			42.6			64.6			75.1			61.2			15.0			9.5			57

TABLE 18: PHYSICAL QUALITY FACTORS OF WHITE MAIZE ACCORDING TO GRADE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3																									
1	Region 13	75.2	75.2	75.2	33.5	33.5	33.5	21.5	21.5	21.5	68.1	68.1	68.1	10.4	10.4	10.4	1.7	1.7	1.7	1.4	1.4	1.4	3	3	3
2	Region 14	76.0	74.1	77.8	32.1	31.2	32.9	27.2	20.5	33.8	63.1	56.4	69.7	9.8	9.8	9.8	2.5	2.2	2.7	1.8	1.4	2.2	6	1	11
1	Region 15	79.9	79.9	79.9	37.2	37.2	37.2	46.2	46.2	46.2	49.5	49.5	49.5	4.3	4.3	4.3	1.9	1.9	1.9	1.5	1.5	1.5	7	7	7
1	Region 16	80.2	80.2	80.2	38.6	38.6	38.6	35.8	35.8	35.8	58.9	58.9	58.9	5.3	5.3	5.3	1.9	1.9	1.9	1.3	1.3	1.3	7	7	7
3	Region 17	76.7	74.7	78.8	36.8	34.3	38.3	35.0	23.7	45.3	58.8	51.4	70.7	6.1	3.3	9.5	1.2	1.0	1.4	0.9	0.7	1.2	5	4	7
1	Region 18	74.8	74.8	74.8	34.9	34.9	34.9	28.6	28.6	28.6	62.7	62.7	62.7	8.7	8.7	8.7	5.1	5.1	5.1	3.9	3.9	3.9	23	23	23
2	Region 19	74.7	74.1	75.2	37.2	34.9	39.5	24.7	19.7	29.6	68.5	61.9	75.1	6.9	5.2	8.5	1.0	0.9	1.1	0.8	0.6	1.0	4	3	4
3	Region 20	74.9	74.5	75.4	33.8	33.1	34.7	26.2	15.8	39.0	63.6	55.0	69.3	10.2	6.0	17.6	2.6	2.2	3.2	1.8	1.5	2.0	4	3	5
1	Region 21	75.0	75.0	75.0	31.7	31.7	31.7	22.6	22.6	22.6	65.9	65.9	65.9	11.5	11.5	11.5	2.3	2.3	2.3	1.7	1.7	1.7	7	7	7
4	Region 22	76.3	73.8	77.6	38.3	34.4	40.5	37.0	29.1	47.1	56.9	46.3	65.3	6.1	5.6	6.6	1.5	0.7	2.2	1.2	0.6	1.6	6	1	11
2	Region 23	77.3	77.1	77.4	38.2	36.5	39.8	34.5	33.7	35.3	59.1	58.9	59.3	6.4	5.4	7.4	1.4	1.1	1.7	0.9	0.8	1.1	6	6	6
1	Region 24	78.5	78.5	78.5	33.2	33.2	33.2	13.0	13.0	13.0	69.6	69.6	69.6	17.4	17.4	17.4	0.7	0.7	0.7	0.5	0.5	0.5	2	2	2
1	Region 27	74.0	74.0	74.0	32.0	32.0	32.0	14.8	14.8	14.8	68.8	68.8	68.8	16.4	16.4	16.4	4.0	4.0	4.0	2.3	2.3	2.3	5	5	5
3	Region 29	77.2	75.0	79.0	38.2	35.3	41.1	29.6	19.9	37.7	63.0	56.2	71.9	7.4	6.1	8.2	1.7	1.1	2.2	1.1	0.7	1.4	6	4	8
1	Region 30	74.8	74.8	74.8	39.2	39.2	39.2	12.7	12.7	12.7	77.7	77.7	77.7	9.6	9.6	9.6	1.8	1.8	1.8	1.6	1.6	1.6	0	0	0
1	Region 34	75.9	75.9	75.9	36.6	36.6	36.6	27.4	27.4	27.4	65.6	65.6	65.6	7.0	7.0	7.0	1.6	1.6	1.6	1.2	1.2	1.2	4	4	4
28	Ave WM 3	76.3			36.1			29.1			62.6			8.3			1.9			1.4			6		
	Min WM 3		73.8			31.2			12.7			46.3			3.3			0.7			0.5			0	
	Max WM 3			80.2			41.1			47.1			77.7			17.6			5.1			3.9			23
GRADE: COM																									
1	Region 12	74.9	74.9	74.9	31.4	31.4	31.4	27.1	27.1	27.1	63.9	63.9	63.9	9.0	9.0	9.0	4.2	4.2	4.2	3.1	3.1	3.1	4	4	4
1	Region 17	79.3	79.3	79.3	36.6	36.6	36.6	23.6	23.6	23.6	65.1	65.1	65.1	11.3	11.3	11.3	2.5	2.5	2.5	2.5	2.5	2.5	3	3	3
1	Region 20	66.9	66.9	66.9	35.1	35.1	35.1	24.0	24.0	24.0	66.4	66.4	66.4	9.6	9.6	9.6	0.8	0.8	0.8	0.6	0.6	0.6	3	3	3
1	Region 23	75.6	75.6	75.6	38.4	38.4	38.4	46.4	46.4	46.4	49.7	49.7	49.7	3.9	3.9	3.9	2.6	2.6	2.6	2.4	2.4	2.4	2	2	2
4	Ave COM	74.2			35.4			30.3			61.3			8.5			2.5			2.2			3		
	Min COM		66.9			31.4			23.6			49.7			3.9			0.8			0.6			2	
	Max COM			79.3			38.4			46.4			66.4			11.3			4.2			3.1			4
599 Ave white maize		78.1			36.2			29.9			59.2			11.0			1.4			1.0			6		
Min white maize			63.8			23.7			0.4			31.0			1.0			0.0			0.0			0	
Max white maize				83.2			58.8			65.5			78.0			64.9			15.0			9.5			58
900 Ave maize		77.8			35.5			26.6			61.3			12.1			1.5			1.1			7		
Min maize			63.8			23.7			0.4			31.0			0.8			0.0			0.0			0	
Max maize				83.2			62.9			65.5			79.4			64.9			22.0			21.5			60

TABLE 18: PHYSICAL QUALITY FACTORS OF WHITE MAIZE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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																								
3	Region 8	78.3	77.1	80.1	33.2	27.5	41.5	17.8	1.7	49.2	50.0	45.2	56.4	32.3	2.5	53.1	1.1	0.4	1.6	0.6	0.2	0.9	8	6	9
3	Region 10	80.4	79.7	81.0	32.8	31.9	33.6	4.0	2.5	6.7	66.9	56.9	78.0	29.1	15.3	40.6	1.0	0.5	1.9	0.7	0.2	1.5	3	0	6
9	Region 11	78.6	76.7	81.1	36.7	31.0	41.3	32.3	9.2	47.8	52.2	44.9	60.3	15.5	4.9	40.7	1.2	0.5	2.1	0.9	0.3	1.8	6	4	10
14	Region 12	77.9	74.9	80.2	35.4	29.6	41.0	30.1	16.1	48.4	61.4	46.6	70.9	8.5	4.5	16.7	2.0	0.1	5.8	1.5	0.1	3.7	5	1	16
8	Region 13	77.5	75.2	78.9	34.9	30.9	39.6	27.9	20.5	33.8	63.1	59.1	69.7	9.1	6.9	11.1	1.4	0.6	1.9	1.1	0.5	1.7	4	2	6
21	Region 14	77.8	74.1	79.6	35.2	30.9	41.7	31.2	19.5	53.5	59.9	43.2	70.5	8.9	3.3	17.0	1.6	0.5	2.9	1.3	0.4	2.6	5	0	11
9	Region 15	79.1	78.1	79.9	34.8	32.3	42.9	28.0	11.2	46.2	57.1	49.5	60.8	14.9	4.3	28.9	1.1	0.5	1.9	0.8	0.4	1.5	5	0	13
13	Region 16	78.5	75.0	81.2	38.4	30.9	58.8	32.5	18.0	41.7	59.8	48.4	67.3	7.7	3.1	14.7	1.0	0.2	1.9	0.7	0.1	1.3	3	2	7
24	Region 17	78.0	74.7	79.7	36.4	30.6	40.1	30.2	4.7	45.3	61.7	51.4	74.1	8.1	2.2	21.2	1.1	0.0	2.5	0.8	0.0	2.5	6	1	26
26	Region 18	77.5	74.4	79.3	36.6	29.6	39.6	32.5	15.2	45.1	60.2	49.5	70.5	7.3	3.5	14.3	1.6	0.5	6.0	1.2	0.2	4.9	6	1	23
15	Region 19	76.4	74.1	79.7	35.5	30.0	42.4	29.3	13.9	42.8	62.7	51.8	75.1	8.1	4.4	16.0	1.6	0.1	2.8	1.2	0.0	2.1	5	1	13
16	Region 20	75.2	66.9	78.5	35.7	30.5	41.7	33.2	15.8	51.9	60.1	46.0	69.3	6.7	2.1	17.6	1.6	0.4	3.2	1.1	0.3	2.3	4	1	7
29	Region 21	77.5	73.9	80.1	36.4	31.7	54.2	29.2	16.3	52.9	61.3	44.3	67.9	9.5	1.3	17.6	1.7	0.5	3.9	1.2	0.5	2.7	8	2	26
47	Region 22	78.9	73.8	81.6	38.1	32.4	51.1	34.5	21.0	51.2	58.0	38.1	69.8	7.5	3.5	12.7	1.2	0.2	4.2	0.8	0.1	3.2	6	0	18
140	Region 23	78.9	71.6	81.7	36.9	24.0	50.5	31.1	2.4	63.2	57.9	33.9	74.6	11.0	1.5	50.9	1.2	0.2	4.0	0.9	0.0	3.1	6	0	19
70	Region 24	79.2	73.8	83.2	35.8	26.9	44.2	27.1	0.4	65.5	56.1	33.4	71.6	16.8	1.0	64.9	1.3	0.1	13.1	0.9	0.0	8.3	7	0	58
14	Region 25	74.7	63.8	80.2	31.8	23.7	38.0	19.0	5.5	40.9	64.9	48.5	72.8	16.2	8.3	30.8	2.0	0.4	7.7	1.4	0.4	4.9	10	3	37
19	Region 26	77.1	71.2	79.7	34.1	29.6	39.9	19.7	3.6	34.5	66.6	57.3	75.5	13.7	7.1	20.9	1.4	0.4	3.6	0.9	0.3	2.2	8	2	18
12	Region 27	78.1	74.0	80.3	36.4	32.0	40.0	26.6	14.8	38.3	64.7	55.0	73.6	8.8	5.4	16.4	1.5	0.4	4.0	1.1	0.1	2.3	8	3	28
20	Region 28	77.6	74.7	79.4	36.0	31.6	40.6	36.0	15.4	57.1	55.0	36.8	74.1	9.0	2.5	24.4	2.6	0.3	15.0	1.7	0.2	9.5	10	2	57
12	Region 29	77.7	75.0	79.0	37.2	30.4	41.1	29.0	16.7	44.1	62.6	51.2	71.9	8.4	4.7	17.6	1.1	0.3	2.2	0.7	0.2	1.4	6	2	14
3	Region 30	75.5	74.8	76.8	36.4	34.7	39.2	25.7	12.7	34.6	66.5	59.5	77.7	7.8	5.9	9.6	1.1	0.7	1.8	1.0	0.5	1.6	2	0	3
1	Region 31	79.4	79.4	79.4	41.7	41.7	41.7	64.6	64.6	64.6	31.0	31.0	31.0	4.4	4.4	4.4	0.3	0.3	0.3	0.0	0.0	0.0	8	8	8
5	Region 32	77.7	76.8	78.7	35.8	33.5	38.7	31.6	21.9	42.0	60.8	53.9	69.2	7.6	4.1	11.2	0.9	0.2	1.3	0.6	0.0	1.0	5	4	6
51	Region 34	77.5	72.3	79.8	36.7	23.9	44.5	32.7	7.0	65.5	58.6	33.0	75.1	8.6	1.5	23.1	1.1	0.0	3.2	0.8	0.0	2.2	8	1	17
7	Region 35	76.4	69.0	79.7	34.9	29.0	41.2	27.4	16.9	41.1	60.6	54.7	69.6	12.0	2.2	28.4	1.5	0.9	2.1	1.1	0.6	1.5	4	1	7
8	Region 36	79.0	77.5	79.9	33.4	29.1	39.2	14.1	4.4	28.9	59.4	48.5	67.7	26.5	6.8	47.1	2.4	1.3	8.0	1.6	0.7	5.3	9	2	30
599	Ave white	78.1			36.2			29.9			59.2			11.0			1.4			1.0			6		
	Min white		63.8			23.7			0.4			31.0			1.0			0.0			0.0			0	
	Max white			83.2			58.8			65.5			78.0			64.9			15.0			9.5			58

TABLE 19: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2003/2004

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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																									
8	Region 10	78.6	75.8	79.7	34.5	32.1	36.0	9.4	5.5	15.7	67.9	62.1	72.4	22.7	18.0	29.1	1.7	0.6	2.9	1.3	0.6	2.3	6	1	14
25	Region 11	78.2	77.0	79.7	34.4	28.0	38.4	9.5	3.8	19.7	70.8	62.3	79.4	19.7	12.0	26.5	1.5	0.4	2.8	1.1	0.3	1.8	6	2	15
8	Region 12	77.8	76.6	79.7	33.0	28.6	37.8	22.1	10.4	32.1	65.6	56.1	71.4	12.4	7.1	19.4	1.7	1.0	2.8	1.3	0.6	1.9	5	0	7
5	Region 13	77.0	76.2	77.5	33.5	31.2	37.0	18.7	13.7	26.5	67.4	62.6	71.3	13.9	7.3	21.4	1.3	0.9	1.5	0.9	0.7	1.2	6	3	8
7	Region 14	77.5	76.1	79.0	31.6	29.9	36.0	17.8	13.1	24.1	68.9	62.8	76.6	13.3	10.0	18.1	4.3	0.4	22.0	3.9	0.3	21.5	5	3	9
3	Region 15	78.2	77.4	78.8	31.4	30.9	32.1	17.0	6.6	24.7	64.7	60.8	68.5	18.3	14.5	24.9	1.7	0.7	3.2	1.3	0.6	2.3	10	4	21
1	Region 16	77.9	77.9	77.9	37.5	37.5	37.5	30.2	30.2	30.2	63.6	63.6	63.6	6.2	6.2	6.2	1.5	1.5	1.5	0.9	0.9	0.9	6	6	6
4	Region 17	76.7	75.0	78.3	36.0	32.5	43.1	20.1	6.3	39.8	67.6	57.2	75.6	12.3	3.0	18.1	1.4	0.8	1.9	1.0	0.5	1.3	7	4	14
8	Region 18	76.4	75.3	77.4	33.4	31.1	35.8	21.6	12.7	30.8	67.3	62.9	72.8	11.1	6.1	19.3	1.7	0.9	4.6	1.2	0.3	2.9	6	3	10
5	Region 19	76.6	73.9	78.1	33.7	29.3	35.5	22.6	17.6	27.0	64.0	60.8	66.3	13.4	9.6	21.6	2.0	1.0	3.5	1.5	0.9	3.3	7	5	9
3	Region 20	77.1	76.3	78.4	34.7	33.0	37.1	32.2	27.4	39.2	62.9	56.6	68.0	4.9	4.2	5.9	0.9	0.5	1.4	0.7	0.3	1.1	4	2	6
1	Region 21	79.4	79.4	79.4	35.9	35.9	35.9	7.6	7.6	7.6	77.9	77.9	77.9	14.5	14.5	14.5	0.8	0.8	0.8	0.6	0.6	0.6	6	6	6
6	Region 22	77.9	74.3	79.4	35.7	32.5	38.7	20.1	5.5	28.4	66.8	62.9	74.8	13.1	8.0	19.7	1.2	0.4	1.6	0.8	0.4	1.1	9	3	23
18	Region 23	76.8	70.8	78.9	34.1	30.1	37.9	25.0	4.8	46.8	63.2	46.2	71.9	11.8	2.8	30.8	1.4	0.5	5.4	1.1	0.2	4.1	7	3	12
13	Region 24	77.4	74.8	79.9	33.6	27.5	37.5	17.3	2.3	30.6	64.5	48.0	73.7	18.2	5.4	49.7	1.6	0.6	5.2	1.1	0.6	2.1	9	0	23
15	Region 25	76.6	74.3	77.9	33.9	28.3	45.8	18.3	5.3	36.2	63.0	55.5	70.8	18.7	8.1	30.2	1.4	0.5	7.5	0.9	0.1	4.3	11	0	60
18	Region 26	77.8	73.8	79.2	34.7	28.1	38.3	21.4	4.5	33.5	65.8	57.3	71.3	12.8	6.0	29.7	1.6	0.5	8.6	1.0	0.4	4.9	11	2	30
10	Region 27	77.6	76.3	78.8	34.2	32.0	37.3	20.6	12.1	28.1	66.9	57.2	73.1	12.6	8.8	22.1	1.5	0.4	2.5	0.9	0.3	1.7	11	1	34
19	Region 28	77.4	75.0	79.4	34.3	30.6	37.8	20.9	7.3	32.1	64.1	57.6	75.4	14.9	8.4	24.8	1.7	0.3	4.2	1.2	0.3	2.4	13	4	34
12	Region 29	77.7	75.9	80.1	35.5	32.5	38.4	26.4	8.6	40.3	62.0	51.9	69.5	11.6	4.0	24.6	1.2	0.4	2.0	0.8	0.3	1.2	8	3	14
3	Region 30	77.0	75.7	78.9	38.8	35.5	42.9	49.3	43.5	59.8	43.1	35.8	52.9	7.6	3.6	14.9	0.5	0.4	0.7	0.4	0.3	0.5	4	1	7
7	Region 32	77.6	75.4	79.4	37.2	34.9	38.9	33.2	26.6	36.9	59.8	55.0	64.1	7.0	3.5	9.3	0.8	0.2	1.7	0.6	0.1	1.6	5	2	6
18	Region 34	77.3	74.7	78.9	35.1	30.3	48.9	22.7	10.3	34.4	63.3	54.9	69.7	14.0	5.7	29.2	1.0	0.3	3.0	0.7	0.2	2.8	5	2	10
7	Region 35	75.0	69.1	78.9	32.5	28.4	38.1	16.6	7.7	23.3	67.5	60.4	72.6	15.9	7.7	22.9	2.6	0.7	6.8	2.3	0.5	6.8	4	1	12
1	Region 36	77.9	77.9	77.9	31.0	31.0	31.0	6.7	6.7	6.7	68.8	68.8	68.8	24.5	24.5	24.5	1.0	1.0	1.0	0.7	0.7	0.7	9	9	9
225	Ave YM 1	77.4			34.3			20.2			65.2			14.6			1.5			1.1			8		
	Min YM 1		69.1			27.5			2.3			35.8			2.8			0.2			0.1			0	
	Max YM 1			80.1			48.9			59.8			79.4			49.7			22.0			21.5			60

TABLE 19: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: YM 2																									
1	Region 11	77.4	77.4	77.4	35.7	35.7	35.7	5.7	5.7	5.7	69.7	69.7	69.7	24.6	24.6	24.6	2.8	2.8	2.8	1.9	1.9	1.9	5	5	5
3	Region 12	75.3	72.8	78.1	33.6	32.9	34.6	21.9	20.0	24.7	65.2	63.7	66.3	12.8	9.6	16.3	2.3	1.4	4.1	1.7	0.9	3.1	8	5	14
3	Region 14	76.7	75.4	78.1	30.9	29.7	32.4	15.0	9.1	20.4	70.0	65.6	74.3	15.0	9.4	25.3	2.0	1.5	2.2	1.5	1.4	1.7	4	3	4
3	Region 15	77.1	76.3	78.7	31.8	30.8	33.6	23.6	19.7	30.8	64.0	59.3	69.6	12.5	9.9	17.3	1.2	0.4	2.0	0.6	0.3	1.3	8	5	13
2	Region 16	76.0	74.5	77.5	30.7	28.7	32.7	17.6	8.9	26.3	66.4	62.6	70.1	16.1	11.1	21.0	1.6	1.1	2.0	1.1	0.9	1.3	5	3	6
9	Region 17	76.8	73.9	78.7	33.1	30.3	36.3	22.6	12.8	38.1	65.8	61.1	71.0	11.6	0.8	16.2	1.7	0.6	4.5	1.1	0.3	2.7	7	3	21
6	Region 18	74.8	73.2	75.9	34.5	32.1	37.6	22.8	17.0	33.1	66.1	58.3	69.8	11.2	7.1	14.8	1.9	1.1	3.5	1.4	0.9	2.6	10	6	16
4	Region 19	76.0	73.9	78.0	32.6	31.6	33.8	24.9	20.6	31.3	66.3	57.8	72.6	8.8	6.8	10.9	1.0	0.7	1.4	0.8	0.6	1.1	5	3	9
4	Region 20	76.1	75.4	77.5	34.1	33.1	35.0	30.4	20.4	38.9	62.9	55.6	72.8	6.7	5.5	7.8	1.4	0.7	2.4	0.9	0.6	1.4	5	2	8
2	Region 22	76.7	75.4	77.9	37.0	35.8	38.2	24.5	22.7	26.2	64.9	64.1	65.6	10.7	8.2	13.2	1.6	1.5	1.6	1.2	1.1	1.3	9	4	13
4	Region 23	76.7	74.3	79.0	29.8	27.3	31.5	11.4	2.6	19.0	61.1	43.5	72.8	27.5	13.6	53.9	2.0	0.8	5.2	1.4	0.6	3.5	8	1	24
4	Region 24	76.5	75.0	77.2	38.6	26.7	62.9	11.7	0.9	19.6	63.7	52.2	68.4	24.7	14.6	46.9	2.9	2.3	3.6	1.9	1.7	2.3	9	2	26
6	Region 26	78.2	76.5	80.1	34.4	31.1	35.9	15.3	5.1	38.5	70.1	52.2	77.6	14.6	9.3	21.3	1.7	0.9	2.7	1.1	0.6	1.8	10	5	17
3	Region 27	74.0	70.8	76.3	33.0	30.7	34.2	19.1	13.6	22.4	68.6	65.2	73.3	12.3	11.5	13.1	3.3	3.2	3.3	1.9	1.8	2.0	10	5	16
8	Region 28	76.1	73.5	77.9	32.7	30.4	36.0	22.6	8.1	44.5	64.9	51.0	73.2	12.5	4.5	18.7	3.0	2.1	4.9	1.9	1.3	3.0	9	4	13
1	Region 29	75.4	75.4	75.4	32.8	32.8	32.8	14.5	14.5	14.5	71.0	71.0	71.0	14.5	14.5	14.5	2.5	2.5	2.5	1.7	1.7	1.7	7	7	7
4	Region 34	76.1	75.4	76.6	34.0	31.1	35.7	27.6	23.5	30.4	62.2	59.2	65.2	10.2	7.2	12.8	1.3	0.8	1.8	1.0	0.5	1.6	5	1	9
1	Region 36	78.5	78.5	78.5	34.9	34.9	34.9	6.7	6.7	6.7	76.4	76.4	76.4	16.9	16.9	16.9	2.3	2.3	2.3	1.7	1.7	1.7	5	5	5
68	Ave YM 2	76.3			33.5			20.4			65.8			13.8			2.0			1.3			8.0		
	Min YM 2		70.8			26.7			0.9			43.5			0.8			0.4			0.3			1.0	
	Max YM 2			80.1			62.9			44.5			77.6			53.9			5.2			3.5			26.0

TABLE 19: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE ACCORDING TO GRADE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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	74.9	74.9	74.9	34.5	34.5	34.5	22.4	22.4	22.4	69.7	69.7	69.7	7.9	7.9	7.9	5.4	5.4	5.4	3.8	3.8	3.8	3	3	3
1	Region 14	74.8	74.8	74.8	25.6	25.6	25.6	14.6	14.6	14.6	65.3	65.3	65.3	20.1	20.1	20.1	5.1	5.1	5.1	3.1	3.1	3.1	8	8	8
1	Region 18	75.2	75.2	75.2	30.9	30.9	30.9	21.5	21.5	21.5	68.3	68.3	68.3	10.2	10.2	10.2	3.2	3.2	3.2	2.0	2.0	2.0	4	4	4
2	Region 20	71.7	68.0	75.4	33.5	32.9	34.1	26.3	26.1	26.4	65.2	65.0	65.3	8.6	8.6	8.6	1.6	0.8	2.4	1.0	0.7	1.3	4	2	6
1	Region 28	76.2	76.2	76.2	29.1	29.1	29.1	21.0	21.0	21.0	64.2	64.2	64.2	14.8	14.8	14.8	2.0	2.0	2.0	1.4	1.4	1.4	11	11	11
6	Ave YM 3	74.1			31.2			22.0			66.3			11.7			3.2			2.1			6		
	Min YM 3		68.0			25.6			14.6			64.2			7.9			0.8			0.7			2	
	Max YM 3			76.2			34.5			26.4			69.7			20.1			5.4			3.8			11
GRADE: COM																									
1	Region 19	74.1	74.1	74.1	30.6	30.6	30.6	21.8	21.8	21.8	69.6	69.6	69.6	8.6	8.6	8.6	2.0	2.0	2.0	1.5	1.5	1.5	6	6	6
1	Region 20	70.4	70.4	70.4	25.5	25.5	25.5	8.2	8.2	8.2	66.3	66.3	66.3	25.5	25.5	25.5	1.8	1.8	1.8	1.4	1.4	1.4	9	9	9
2	Ave COM	72.3			28.1			15.0			68.0			17.1			1.9			1.5			8		
	Min COM		70.4			25.5			8.2			66.3			8.6			1.8			1.4			6	
	Max COM			74.1			30.3			21.8			69.6			25.5			2.0			1.5			9
301	Ave yellow maize	77.0			34.0			20.2			65.4			14.4			1.7			1.2			8		
	Min yellow maize		68.0			25.5			0.9			35.8			0.8			0.2			0.1			0	
	Max yellow maize			80.1			62.9			59.8			79.4			53.9			22.0			21.5			60
900	Ave maize	77.8			35.5			26.6			61.3			12.1			1.5			1.1			7		
	Min maize		63.8			23.7			0.4			31.0			0.8			0.0			0.0			0	
	Max maize			83.2			62.9			65.5			79.4			64.9			22.0			21.5			60

TABLE 19: PHYSICAL QUALITY FACTORS OF YELLOW MAIZE 2003/2004
(continue)

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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																								
8	Region 10	78.6	75.8	79.7	34.5	32.1	36.0	9.4	5.5	15.7	67.9	62.1	72.4	22.7	18.0	29.1	1.7	0.6	2.9	1.3	0.6	2.3	6	1	14
26	Region 11	78.2	77.0	79.7	34.5	28.0	38.4	9.3	3.8	19.7	70.8	62.3	79.4	19.9	12.0	26.5	1.5	0.4	2.8	1.1	0.3	1.9	6	2	15
12	Region 12	77.0	72.8	79.7	33.3	28.6	37.8	22.1	10.4	32.1	65.8	56.1	71.4	12.1	7.1	19.4	2.2	1.0	5.4	1.6	0.6	3.8	5	0	14
5	Region 13	77.0	76.2	77.5	33.5	31.2	37.0	18.7	13.7	26.5	67.4	62.6	71.3	13.9	7.3	21.4	1.3	0.9	1.5	0.9	0.7	1.2	6	3	8
11	Region 14	77.0	74.8	79.0	30.9	25.6	36.0	16.7	9.1	24.1	68.9	62.8	76.6	14.4	9.4	25.3	3.8	0.4	22.0	3.2	0.3	21.5	5	3	9
6	Region 15	77.7	76.3	78.8	31.6	30.8	33.6	20.3	6.6	30.8	64.3	59.3	69.6	15.4	9.9	24.9	1.5	0.4	3.2	1.0	0.3	2.3	9	4	21
3	Region 16	76.6	74.5	77.9	33.0	28.7	37.5	21.8	8.9	30.2	65.4	62.6	70.1	12.8	6.2	21.0	1.5	1.1	2.0	1.0	0.9	1.3	5	3	6
13	Region 17	76.8	73.9	78.7	34.0	30.3	43.1	21.8	6.3	39.8	66.4	57.2	75.6	11.8	0.8	18.1	1.6	0.6	4.5	1.0	0.3	2.7	7	3	21
15	Region 18	75.7	73.2	77.4	33.6	30.9	37.6	22.1	12.7	33.1	66.9	58.3	72.8	11.1	6.1	19.3	1.9	0.9	4.6	1.3	0.3	2.9	7	3	16
10	Region 19	76.1	73.9	78.1	32.9	29.3	35.5	23.4	17.6	31.3	65.5	57.8	72.6	11.1	6.8	21.6	1.6	0.7	3.5	1.3	0.6	3.3	6	3	9
10	Region 20	75.0	68.0	78.4	33.3	25.5	37.1	27.9	8.2	39.2	63.7	55.6	72.8	8.4	4.2	25.5	1.3	0.5	2.4	0.9	0.3	1.4	5	2	9
1	Region 21	79.4	79.4	79.4	35.9	35.9	35.9	7.6	7.6	7.6	77.9	77.9	77.9	14.5	14.5	14.5	0.8	0.8	0.8	0.6	0.6	0.6	6	6	6
8	Region 22	77.6	74.3	79.4	36.0	32.5	38.7	21.2	5.5	28.4	66.3	62.9	74.8	12.5	8.0	19.7	1.3	0.4	1.6	0.9	0.4	1.3	9	3	23
22	Region 23	76.8	70.8	79.0	33.3	27.3	37.9	22.5	2.6	46.8	62.8	43.5	72.8	14.7	2.8	53.9	1.5	0.5	5.4	1.1	0.2	4.1	7	1	24
17	Region 24	77.2	74.8	79.9	34.8	26.7	62.9	16.0	0.9	30.6	64.3	48.0	73.7	19.7	5.4	49.7	1.9	0.6	5.2	1.3	0.6	2.3	9	0	26
15	Region 25	76.6	74.3	77.9	33.9	28.3	45.8	18.3	5.3	36.2	63.0	55.5	70.8	18.7	8.1	30.2	1.4	0.5	7.5	0.9	0.1	4.3	11	0	60
24	Region 26	77.9	73.8	80.1	34.6	28.1	38.3	19.8	4.5	38.5	66.9	52.2	77.6	13.3	6.0	29.7	1.6	0.5	8.6	1.0	0.4	4.9	11	2	30
13	Region 27	76.8	70.8	78.8	33.9	30.7	37.3	20.2	12.1	28.1	67.3	57.2	73.3	12.5	8.8	22.1	1.9	0.4	3.3	1.1	0.3	2.0	11	1	34
28	Region 28	77.0	73.5	79.4	33.6	29.1	37.8	21.4	7.3	44.5	64.4	51.0	75.4	14.2	4.5	24.8	2.1	0.3	4.9	1.4	0.3	3.0	12	4	34
13	Region 29	77.5	75.4	80.1	35.3	32.5	38.4	25.5	8.6	40.3	62.7	51.9	71.0	11.8	4.0	24.6	1.3	0.4	2.5	0.9	0.3	1.7	8	3	14
3	Region 30	77.0	75.7	78.9	38.8	35.5	42.9	49.3	43.5	59.8	43.1	35.8	52.9	7.6	3.6	14.9	0.5	0.4	0.7	0.4	0.3	0.5	4	1	7
7	Region 32	77.6	75.4	79.4	37.2	34.9	38.9	33.2	26.6	36.9	59.8	55.0	64.1	7.0	3.5	9.3	0.8	0.2	1.7	0.6	0.1	1.6	5	2	6
22	Region 34	77.0	74.7	78.9	34.9	30.3	48.9	23.6	10.3	34.4	63.1	54.9	69.7	13.3	5.7	29.2	1.1	0.3	3.0	0.7	0.2	2.8	5	1	10
7	Region 35	75.0	69.1	78.9	32.5	28.4	38.1	16.6	7.7	23.3	67.5	60.4	72.6	15.9	7.7	22.9	2.6	0.7	6.8	2.3	0.5	6.8	4	1	12
2	Region 36	78.2	77.9	78.5	33.0	31.0	34.9	6.7	6.7	6.7	72.6	68.8	76.4	20.7	16.9	24.5	1.7	1.0	2.3	1.2	0.7	1.7	7	5	9
301	Ave yellow	77.0			34.0			20.2			65.4			14.4			1.7			1.2			8		
	Min yellow		68.0			25.5			0.9			35.8			0.8			0.2			0.1			0	
	Max yellow			80.1			62.9			59.8			79.4			53.9			22.0			21.5			60

TABLE 20: PHYSICAL QUALITY FACTORS OF WHITE AND YELLOW MAIZE 2003/2004

Number of samples	Region	Hectolitre mass kg/hl			100 kernel mass (g)			Kernel size (%) Above 10 mm sieve			Above 8mm sieve			Below 8 mm sieve			Breakability (g) < 6.3mm sieve			< 4.75mm sieve			Stress cracks (%)		
		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																									
3	Region 8	78.3	77.1	80.1	33.2	27.5	41.5	17.8	1.7	49.2	50.0	45.2	56.4	32.3	2.5	53.1	1.1	0.4	1.6	0.6	0.2	0.9	8	6	9
11	Region 10	79.1	75.8	81.0	34.0	31.9	36.0	7.9	2.5	15.7	67.6	56.9	78.0	24.4	15.3	40.6	1.5	0.5	2.9	1.2	0.2	2.3	5	0	14
35	Region 11	78.3	76.7	81.1	35.0	28.0	41.3	15.2	3.8	47.8	66.0	44.9	79.4	18.8	4.9	40.7	1.4	0.4	2.8	1.1	0.3	1.9	6	2	15
26	Region 12	77.5	72.8	80.2	34.4	28.6	41.0	26.4	10.4	48.4	63.4	46.6	71.4	10.2	4.5	19.4	2.1	0.1	5.8	1.5	0.1	3.8	5	0	16
13	Region 13	77.3	75.2	78.9	34.4	30.9	39.6	24.3	13.7	33.8	64.7	59.1	71.3	10.9	6.9	21.4	1.3	0.6	1.9	1.0	0.5	1.7	4	2	8
32	Region 14	77.5	74.1	79.6	33.7	25.6	41.7	26.2	9.1	53.5	63.0	43.2	76.6	10.8	3.3	25.3	2.3	0.4	22.0	1.9	0.3	21.5	5	0	11
15	Region 15	78.5	76.3	79.9	33.6	30.8	42.9	24.9	6.6	46.2	60.0	49.5	69.6	15.1	4.3	28.9	1.2	0.4	3.2	0.9	0.3	2.3	6	0	21
16	Region 16	78.1	74.5	81.2	37.4	28.7	58.8	30.5	8.9	41.7	60.8	48.4	70.1	8.6	3.1	21.0	1.1	0.2	2.0	0.8	0.1	1.3	4	2	7
37	Region 17	77.6	73.9	79.7	35.6	30.3	43.1	27.3	4.7	45.3	63.3	51.4	75.6	9.4	0.8	21.2	1.3	0.0	4.5	0.9	0.0	2.7	6	1	26
41	Region 18	76.9	73.2	79.3	35.5	29.6	39.6	28.7	12.7	45.1	62.7	59.5	72.8	8.7	3.5	19.3	1.7	0.5	6.0	1.3	0.2	4.9	7	1	23
25	Region 19	76.3	73.9	79.7	34.5	29.3	42.4	26.9	13.9	42.8	63.8	51.8	75.1	9.3	4.4	21.6	1.6	0.1	3.5	1.2	0.0	3.3	5	1	13
26	Region 20	75.1	66.9	78.5	34.8	25.5	41.7	31.2	8.2	51.9	61.5	46.0	72.8	7.4	2.1	25.5	1.5	0.4	3.2	1.1	0.3	2.3	4	1	9
30	Region 21	77.5	73.9	80.1	36.3	31.7	54.2	28.5	7.6	52.9	61.8	44.3	77.9	9.7	1.3	17.6	1.7	0.5	3.9	1.2	0.5	2.7	8	2	26
55	Region 22	78.7	73.8	81.6	37.8	32.4	51.1	32.5	5.5	51.2	59.2	38.1	74.8	8.2	3.5	19.7	1.2	0.2	4.2	0.8	0.1	3.2	6	0	23
162	Region 23	78.6	70.8	81.7	36.4	24.0	50.5	30.0	2.4	53.2	58.6	33.9	74.6	11.5	1.5	53.9	1.3	0.2	5.4	0.9	0.0	4.1	6	0	24
87	Region 24	78.8	73.8	83.2	35.6	26.7	62.9	24.9	0.4	65.5	57.7	33.4	73.7	17.4	1.0	64.9	1.4	0.1	13.1	1.0	0.0	8.3	7	0	58
29	Region 25	75.7	63.8	80.2	32.9	23.7	45.8	18.6	5.3	40.9	63.9	48.5	72.8	17.5	8.1	30.8	1.7	0.4	7.7	1.1	0.1	4.9	10	0	60
43	Region 26	77.6	71.2	80.1	34.4	28.1	39.9	19.8	3.6	38.5	66.8	52.2	77.6	13.4	6.0	29.7	1.5	0.4	8.6	1.0	0.3	4.9	9	2	30
25	Region 27	77.4	70.8	80.3	35.1	30.7	40.0	23.3	12.1	38.3	66.0	55.0	73.6	10.7	5.4	22.1	1.7	0.4	4.0	1.1	0.1	2.3	9	1	34
48	Region 28	77.2	73.5	79.4	34.6	29.1	40.6	27.5	7.3	57.1	60.5	36.8	75.4	12.0	2.5	24.8	2.3	0.3	15.0	1.5	0.2	9.5	11	2	57
25	Region 29	77.6	75.0	80.1	36.2	30.4	41.1	27.2	8.6	44.1	62.6	51.2	71.9	10.2	4.0	24.6	1.2	0.3	2.5	0.8	0.2	1.7	7	2	14
6	Region 30	76.3	74.8	78.9	37.6	34.7	42.9	37.5	12.7	59.8	54.8	35.8	77.7	7.7	3.6	14.9	0.8	0.4	1.8	0.7	0.3	1.6	3	0	7
1	Region 31	79.4	79.4	79.4	41.7	41.7	41.7	64.6	64.6	64.6	31.0	31.0	31.0	4.4	4.4	4.4	0.3	0.3	0.3	0.0	0.0	0.0	8	8	8
12	Region 32	77.7	75.4	79.4	36.6	33.5	38.9	32.6	21.9	42.0	60.2	53.9	69.2	7.3	3.5	11.2	0.8	0.2	1.7	0.6	0.0	1.6	5	2	6
73	Region 34	77.4	72.3	79.8	36.2	23.9	48.9	30.0	7.0	65.5	60.0	33.0	75.1	10.0	1.5	29.2	1.1	0.0	3.2	0.8	0.0	2.8	7	1	17
14	Region 35	75.7	69.0	79.7	33.7	28.4	41.2	22.0	7.7	41.1	64.1	54.7	72.6	14.0	2.2	28.4	2.1	0.7	6.8	1.7	0.5	6.8	4	1	12
10	Region 36	78.8	77.5	79.9	33.3	29.1	39.2	12.6	4.4	28.9	62.1	48.5	76.4	25.3	6.8	47.1	2.3	1.0	8.0	1.5	0.7	5.3	8	2	30
900	Ave w & y	77.8			35.5			26.6			61.3			12.1			1.5			1.1			7		
	Min white & yellow		63.8			23.7			0.4			31.0			0.8			0.0			0.0			0	
	Max white & yellow			83.2			62.9			65.5			79.4			64.9			22.0			21.5			60

TABLE 21: MILLING- AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2003/2004)

Number of samples	Region	Milling index			Whiteness index unsifted			Whiteness index sifted 87:13			Number of samples	Region	Milling index			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.
GRADE: WHITE											**GRADE: WM 1**										
3	Region 8	107.6	98.1	122.9	26.1	25.1	28.1	18.4	16.5	19.8	3	Region 8	107.6	98.1	122.9	26.1	25.1	28.1	18.4	16.5	19.8
3	Region 10	117.9	114.5	123.2	26.2	23.4	28.8	17.5	15.4	19.3	3	Region 10	117.9	114.5	123.2	26.2	23.4	28.8	17.5	15.4	19.3
9	Region 11	114.4	110.7	120.0	26.6	21.3	33.4	16.1	10.6	23.7	8	Region 11	114.5	110.7	120.0	26.2	21.3	33.4	16.8	13.7	23.7
14	Region 12	109.3	91.3	122.0	24.9	18.4	30.9	16.8	8.2	20.3	6	Region 12	112.4	104.1	121.4	26.7	22.5	30.9	19.1	16.9	20.3
8	Region 13	102.3	91.1	112.9	26.1	21.7	34.2	16.3	11.6	19.8	4	Region 13	107.2	100.5	112.9	27.9	24.1	34.2	18.4	17.3	19.8
21	Region 14	108.3	97.4	118.0	26.2	20.1	31.0	17.8	13.4	23.0	12	Region 14	109.2	97.4	118.0	26.6	22.7	31.0	18.5	13.8	23.0
9	Region 15	108.3	92.8	114.5	25.5	21.4	30.0	17.9	12.5	25.5	6	Region 15	110.8	106.8	113.8	25.2	21.8	29.4	18.7	12.5	25.5
13	Region 16	110.8	97.4	116.0	26.4	21.5	37.5	16.9	12.6	23.1	11	Region 16	111.0	97.4	116.0	26.6	21.5	37.5	17.1	12.6	23.1
24	Region 17	107.1	96.3	126.2	26.6	20.7	33.2	17.7	13.0	29.0	13	Region 17	107.0	96.3	126.2	28.3	21.6	33.2	18.6	13.0	29.0
26	Region 18	108.0	90.6	116.0	27.1	20.3	33.3	16.6	3.8	24.6	14	Region 18	109.8	105.2	114.7	28.2	22.5	33.3	17.1	11.3	24.6
15	Region 19	103.8	88.3	118.0	25.1	21.5	30.7	17.2	12.2	21.4	8	Region 19	108.5	101.1	118.0	26.2	21.5	30.7	18.2	12.2	21.4
16	Region 20	102.4	89.2	113.3	26.2	19.9	32.3	16.9	10.2	20.5	7	Region 20	104.8	98.1	113.2	26.8	22.8	32.3	17.9	15.2	20.2
29	Region 21	105.9	93.9	118.3	27.4	16.7	37.6	17.5	10.0	21.4	21	Region 21	106.5	95.5	115.8	27.4	16.7	37.6	17.6	11.0	21.4
47	Region 22	109.8	90.5	122.3	25.2	16.1	38.9	15.8	7.1	24.0	33	Region 22	112.1	90.5	122.3	26.2	18.1	34.3	16.4	7.3	20.1
140	Region 23	112.5	92.1	125.1	26.9	5.9	39.0	16.8	-3.6	24.3	97	Region 23	113.3	101.3	125.1	27.8	20.4	39.0	17.3	10.4	24.3
70	Region 24	109.4	64.4	123.0	25.3	19.7	35.2	16.1	10.2	24.7	57	Region 24	111.0	98.2	123.0	25.5	19.7	35.2	16.1	10.2	21.6
14	Region 25	96.9	66.1	127.0	31.9	24.6	39.1	17.3	12.4	24.3	10	Region 25	102.5	86.6	127.0	30.2	24.6	37.4	16.4	12.4	19.7
19	Region 26	106.7	79.5	118.3	28.0	18.9	36.3	15.8	9.9	22.0	15	Region 26	106.1	79.5	118.3	28.8	18.9	36.3	16.0	11.7	22.0
12	Region 27	106.9	89.5	114.0	24.5	14.7	32.1	14.9	8.4	17.6	10	Region 27	108.8	103.1	114.0	24.0	14.7	32.1	14.9	8.4	17.6
20	Region 28	105.6	95.0	118.0	24.8	14.4	31.1	15.4	2.7	21.1	16	Region 28	105.0	95.0	113.2	24.6	14.4	31.1	15.3	2.7	21.1
12	Region 29	109.9	94.7	121.4	28.3	18.8	34.1	16.5	13.5	20.7	7	Region 29	112.6	108.0	121.4	28.3	22.9	34.1	15.7	13.5	18.4
3	Region 30	105.7	99.6	112.4	30.2	27.5	32.1	18.7	13.7	21.4	1	Region 30	112.4	112.4	112.4	32.1	32.1	32.1	20.9	20.9	20.9
1	Region 31	116.2	116.2	116.2	21.4	21.4	21.4	11.7	11.7	11.7	4	Region 32	109.0	105.2	114.3	32.3	29.9	35.4	16.1	13.2	18.4
5	Region 32	108.5	105.2	114.3	32.1	29.9	35.4	17.3	13.2	22.0	40	Region 34	110.0	95.8	129.4	28.4	18.0	36.4	17.2	11.7	23.1
51	Region 34	109.0	88.5	129.4	27.9	18.0	36.4	16.7	11.0	23.1	7	Region 35	102.7	95.1	115.5	30.6	24.6	34.0	19.5	16.1	25.6
7	Region 35	102.7	95.1	115.5	30.6	24.6	34.0	19.5	16.1	25.6	6	Region 36	109.7	101.9	114.7	27.8	23.9	30.4	18.0	15.5	20.9
8	Region 36	108.6	101.9	114.7	28.6	23.9	33.5	17.4	15.5	20.9											
599	Ave white	108.8			26.7			16.7			419	Ave WM 1	110.2			27.2			17.0		
	Min white		64.4			5.9			-3.6			Min WM 1		79.5			14.4			2.7	
	Max white			129.4			39.1			29.0		Max WM 1			129.4			39.0			29.0

TABLE 21: MILLING- AND WHITENESS INDEX OF WHITE MAIZE ACCORDING TO GRADE (2003/2004) (continue)

Number of samples	Region	Milling index			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 2										
1	Region 11	114.1	114.1	114.1	29.8	39.8	29.8	10.6	10.6	10.6
7	Region 12	109.3	96.7	122.0	23.5	18.4	27.9	15.1	8.2	19.2
3	Region 13	99.3	97.3	102.1	22.8	21.7	24.1	14.4	11.6	17.3
7	Region 14	108.4	97.7	114.2	26.6	22.2	29.6	17.5	13.4	20.2
2	Region 15	108.5	102.5	114.5	28.4	26.8	30.0	17.8	15.7	20.0
1	Region 16	110.5	110.5	110.5	26.6	26.6	26.6	15.9	15.9	15.9
7	Region 17	108.0	98.1	113.1	24.0	20.7	26.9	17.2	13.3	23.7
11	Region 18	105.8	90.6	116.0	26.3	21.8	29.6	15.7	3.8	23.5
5	Region 19	101.2	97.1	103.2	23.9	21.8	26.7	15.9	13.5	18.3
5	Region 20	100.4	89.2	109.5	25.7	21.6	28.4	17.0	14.8	19.0
7	Region 21	103.8	93.9	118.3	27.5	19.8	33.7	18.4	15.2	21.3
10	Region 22	103.9	92.1	110.5	24.4	18.0	38.9	16.1	11.5	24.0
40	Region 23	111.1	92.1	123.7	25.5	5.9	33.3	16.1	1.6	24.1
12	Region 24	102.1	64.4	111.6	24.5	19.8	32.2	15.7	11.4	24.7
4	Region 25	82.7	66.1	105.8	36.2	31.0	39.1	19.6	16.4	24.3
4	Region 26	108.7	99.1	114.0	24.7	21.2	27.8	15.0	9.9	20.0
1	Region 27	104.6	104.6	104.6	28.4	28.4	28.4	15.9	15.9	15.9
4	Region 28	107.9	101.1	118.0	25.6	23.6	27.9	15.9	13.8	18.2
2	Region 29	103.6	99.7	107.5	30.6	30.6	30.7	17.4	14.1	20.7
1	Region 30	105.2	105.2	105.2	21.4	21.4	21.4	11.7	11.7	11.7
1	Region 31	116.2	116.2	116.2	30.9	30.9	30.9	21.4	21.4	21.4
1	Region 32	106.6	106.6	106.6	31.1	31.1	31.1	22.0	22.0	22.0
10	Region 34	105.2	88.5	115.6	26.4	19.0	33.8	15.7	11.4	19.7
2	Region 36	105.4	102.5	108.2	30.7	27.9	33.5	15.6	15.5	15.6
148	Ave WM 2	106.3			25.9			16.3		
	Min WM 2		64.4			5.9			1.6	
	Max WM 2			123.7			39.1			24.7

Number of samples	Region	Milling index			Whiteness index unsifted			Whiteness index sifted 87:13		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 3										
1	Region 13	91.1	91.1	91.1	29.3	29.3	29.3	13.7	13.7	13.7
2	Region 14	101.8	101.1	102.5	22.9	20.1	25.7	15.1	14.1	16.1
1	Region 15	92.8	92.8	92.8	21.4	21.4	21.4	13.3	13.3	13.3
1	Region 16	109.1	109.1	109.1	23.5	23.5	23.5	16.0	16.0	16.0
3	Region 17	103.7	97.6	108.4	25.5	23.7	28.8	15.9	14.6	17.3
1	Region 18	106.8	106.8	106.8	20.3	20.3	20.3	18.8	18.8	18.8
2	Region 19	91.8	88.3	95.3	24.2	23.3	25.0	16.6	15.6	17.5
3	Region 20	102.2	95.2	113.3	25.5	19.9	29.5	15.7	10.2	20.5
1	Region 21	106.9	106.9	106.9	27.3	27.3	27.3	10.0	10.0	10.0
4	Region 22	105.7	96.7	112.0	18.6	16.1	22.4	10.8	7.1	17.5
2	Region 23	103.5	102.7	104.2	25.7	25.5	25.8	13.5	13.4	13.7
1	Region 24	107.1	107.1	107.1	25.0	25.0	25.0	18.0	18.0	18.0
1	Region 27	89.5	89.5	89.5	25.9	25.9	25.9	13.5	13.5	13.5
3	Region 29	107.9	94.7	117.1	26.7	18.8	33.7	17.6	15.9	19.7
1	Region 30	99.6	99.6	99.6	27.5	27.5	27.5	13.7	13.7	13.7
1	Region 34	104.8	104.8	104.8	21.6	21.6	21.6	11.0	11.0	11.0
28	Ave WM 3	91.8			24.2			16.6		
	Min WM 3		88.3			23.3			15.6	
	Max WM 3			95.3			25.0			17.5
GRADE: COM										
1	Region 12	91.3	91.3	91.3	23.9	23.9	23.9	15.0	15.0	15.0
1	Region 17	112.2	112.2	112.2	25.3	25.3	25.3	15.4	15.4	15.4
1	Region 20	96.9	96.9	96.9	26.3	26.3	26.3	13.4	13.4	13.4
1	Region 23	101.3	101.3	101.3	8.3	8.3	8.3	-3.6	-3.7	-3.8
4	Ave COM	100.4			20.9			10.0		
	Min COM		91.3			8.3			-3.6	
	Max COM			112.2			26.3			15.4
	Ave white maize	108.8			26.7			16.7		
	Min white maize		64.4			5.9			-3.6	
	Max white maize			129.4			39.1			29.0

TABLE 22: MILLING INDEX OF YELLOW MAIZE ACCORDING TO GRADE (2003/2004)

Number of samples	Region	Milling index ave.	min.	max.	Number of samples	Region	Milling index ave.	min.	max.	Number of samples	Region	Milling index ave.	min.	max.	Number of samples	Region	Milling index ave.	min.	max.
GRADE: YM 1					**GRADE: YM 2**					**GRADE: YM 3**					**GRADE: COM**				
8	Region 10	102.3	88.1	110.9		Region 10													
25	Region 11	101.4	92.2	109.9	1	Region 11	100.7	100.7	100.7	1	Region 12	70.9	70.9	70.9	1	Region 19	92.9	92.9	92.9
8	Region 12	110.2	104.1	112.8	3	Region 12	106.0	93.2	119.2	1	Region 14	104.7	104.7	104.7	1	Region 20	74.7	74.7	74.7
5	Region 13	103.5	99.5	109.3	3	Region 14	97.5	94.0	99.9	1	Region 18	95.1	95.1	95.1					
7	Region 14	106.5	99.2	116.4	3	Region 15	102.3	98.9	105.0	2	Region 20	98.6	97.5	99.6					
3	Region 15	104.7	91.6	112.9	2	Region 16	95.2	93.5	96.9	1	Region 28	104.5	104.5	104.5					
1	Region 16	107.0	107.0	107.0	9	Region 17	101.3	86.1	110.5										
4	Region 17	100.8	89.4	106.3	6	Region 18	104.2	96.5	111.7										
8	Region 18	101.9	96.6	106.2	4	Region 19	105.9	93.3	115.3										
5	Region 19	103.7	90.4	113.3	4	Region 20	101.3	96.1	108.1										
3	Region 20	105.4	102.6	107.2	2	Region 22	102.5	97.7	107.3										
1	Region 21	93.3	93.3	93.3	4	Region 23	100.8	88.3	108.3										
6	Region 22	107.8	98.3	114.7	4	Region 24	95.0	82.8	101.6										
18	Region 23	106.5	79.0	117.3	6	Region 26	106.3	95.6	115.0										
13	Region 24	101.4	81.0	119.3	3	Region 27	99.5	88.8	107.4										
15	Region 25	101.3	80.5	110.8	8	Region 28	101.7	90.2	109.7										
18	Region 26	107.5	89.1	120.9	1	Region 29	114.5	114.5	114.5										
10	Region 27	104.6	95.7	111.7	4	Region 34	97.3	90.9	104.3										
19	Region 28	104.3	84.7	115.4	1	Region 36	82.2	82.2	82.2										
12	Region 29	105.7	91.0	118.7															
3	Region 30	105.7	103.2	109.2															
7	Region 32	104.5	99.4	110.2															
18	Region 34	107.0	97.7	115.9															
7	Region 35	88.0	53.7	104.6															
1	Region 36	93.4	93.4	93.4															
225	**Ave YM 1**	103.9			68	**Ave YM 2**	101.5			6	**Ave YM 3**	95.4			2	**Ave COM**	83.8		
	Min YM 1		53.7			**Min YM 2**		82.2			**Min YM 3**		70.9			**Min COM**		74.7	
	Max YM 1			120.9		**Max YM 2**			119.2		**Max YM 3**			104.7		**Max COM**			92.9

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TABLE 23: MILLING INDEX OF WHITE AND YELLOW MAIZE (2003/2004)

Number of samples	Region	Milling index ave.	min.	max.	Number of samples	Region	Milling index ave.	min.	max.	Number of samples	Region	Milling index ave.	min.	max.
WHITE					**YELLOW**					**WHITE & YELLOW**				
3	Region 8	107.0	98.1	122.9		Region 8				3	Region 8	107.6	98.1	122.9
3	Region 10	117.9	114.5	123.2	8	Region 10	102.3	88.1	110.9	11	Region 10	106.6	88.1	123.2
9	Region 11	114.4	110.7	120.0	26	Region 11	101.4	92.2	109.9	35	Region 11	104.8	92.2	120.0
14	Region 12	109.3	91.3	122.0	12	Region 12	105.9	70.9	119.2	26	Region 12	107.7	70.9	122.0
8	Region 13	102.3	91.1	112.9	5	Region 13	103.5	99.5	109.3	13	Region 13	102.7	91.1	112.9
21	Region 14	108.3	97.4	118.0	11	Region 14	103.9	94.0	116.4	32	Region 14	106.7	94.0	118.0
9	Region 15	108.3	92.8	114.5	6	Region 15	103.5	91.6	112.9	15	Region 15	106.3	91.6	114.5
13	Region 16	110.8	97.4	116.0	3	Region 16	99.1	93.5	107.0	16	Region 16	108.6	93.5	116.0
24	Region 17	107.1	96.3	126.2	13	Region 17	101.2	86.1	110.5	37	Region 17	105.0	86.1	126.2
26	Region 18	108.0	90.6	116.0	15	Region 18	102.4	95.1	111.7	41	Region 18	105.9	90.6	116.0
15	Region 19	103.8	88.3	118.0	10	Region 19	103.5	90.4	115.3	25	Region 19	103.7	88.3	118.0
16	Region 20	102.4	89.2	113.3	10	Region 20	99.3	74.7	108.1	26	Region 20	101.2	74.7	113.3
29	Region 21	105.9	93.9	118.3	1	Region 21	93.3	93.3	93.3	30	Region 21	105.5	93.3	118.3
47	Region 22	109.8	90.5	122.3	8	Region 22	106.4	97.7	114.7	55	Region 22	109.3	90.5	122.3
140	Region 23	112.5	92.1	125.1	22	Region 23	105.5	79.0	117.3	162	Region 23	111.5	79.0	125.1
70	Region 24	109.4	64.4	123.0	17	Region 24	99.9	81.0	119.3	87	Region 24	107.6	64.4	123.0
14	Region 25	96.9	66.1	127.0	15	Region 25	101.3	80.5	110.8	29	Region 25	99.2	66.1	127.0
19	Region 26	106.7	79.5	118.3	24	Region 26	107.2	89.1	120.9	43	Region 26	107.0	79.5	120.9
12	Region 27	106.9	89.5	114.0	13	Region 27	103.4	88.8	111.7	25	Region 27	105.1	88.8	114.0
20	Region 28	105.6	95.0	118.0	28	Region 28	103.6	84.7	115.4	48	Region 28	104.4	84.7	118.0
12	Region 29	109.9	94.7	121.4	13	Region 29	106.4	91.0	118.7	25	Region 29	108.1	91.0	121.4
3	Region 30	105.7	99.6	112.4	3	Region 30	105.7	103.2	109.2	6	Region 30	105.7	99.6	112.4
1	Region 31	116.2	116.2	116.2		Region 31				1	Region 31	116.2	116.2	116.2
5	Region 32	108.5	105.2	114.3	7	Region 32	104.5	99.4	110.2	12	Region 32	106.2	99.4	114.3
51	Region 34	109.0	88.5	129.4	22	Region 34	105.2	90.9	115.9	73	Region 34	107.9	88.5	129.4
7	Region 25	102.7	95.1	115.5	7	Region 25	88.0	53.7	104.6	14	Region 25	95.4	53.7	115.5
8	Region 36	108.6	101.9	114.7	2	Region 36	87.8	82.2	93.4	10	Region 36	104.4	82.2	114.7
599	**Ave white**	**108.8**			**301**	**Ave yellow**	**103.1**			**900**	**Ave w & y**	**106.9**		
	Min white		**64.4**			**Min yellow**		**53.7**			**Min w & y**		**53.7**	
	Max white			**129.4**		**Max yellow**			**120.9**		**Max w & y**			**129.4**

TABLE 24: ROFF MILLING OF WHITE MAIZE (2003/2004)

Number of samples	Region	Roff Milling															Extraction, % (Total meal)		
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %					
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WHITE																			
3	Region 8	13.3	9.9	15.7	10.7	9.9	11.1	25.0	23.8	25.8	29.3	26.6	33.1	21.7	20.9	22.8	78.3	77.2	79.1
3	Region 10	11.7	10.2	12.8	10.2	9.8	10.4	25.9	25.1	26.3	31.2	28.9	33.3	21.0	19.8	21.7	79.0	78.3	80.2
9	Region 11	11.4	10.7	12.3	10.9	9.9	14.1	25.9	24.3	28.1	31.4	30.2	33.7	20.3	18.1	22.2	79.7	77.8	81.9
14	Region 12	11.3	9.1	13.8	10.3	9.6	11.7	25.0	23.0	26.7	32.1	27.8	35.2	21.3	19.4	24.4	77.0	54.4	80.6
8	Region 13	12.0	10.8	14.0	10.5	9.9	11.9	24.7	23.7	25.8	31.3	28.0	33.5	21.4	19.3	22.9	78.6	77.1	80.7
21	Region 14	11.5	9.5	13.6	10.3	9.6	10.9	24.8	23.4	26.5	31.9	29.3	35.8	21.5	18.8	23.6	78.5	76.4	81.2
9	Region 15	11.3	10.1	11.7	10.4	9.5	11.7	25.8	23.4	27.2	31.5	30.6	32.9	21.0	19.4	24.7	79.0	75.3	80.6
13	Region 16	11.2	9.9	12.9	10.1	9.5	10.6	25.2	22.9	26.7	32.2	29.6	35.4	21.3	18.2	25.2	78.7	74.8	81.8
24	Region 17	11.9	8.9	13.3	10.3	9.4	11.1	24.9	23.1	27.0	31.5	29.3	35.3	21.4	19.1	23.3	78.6	76.7	80.9
26	Region 18	12.0	9.9	14.0	10.8	9.9	15.3	25.4	23.6	27.7	31.3	28.7	34.5	20.5	18.7	23.6	79.5	76.4	81.3
15	Region 19	12.2	10.3	13.9	10.5	9.9	11.2	25.1	23.3	26.5	30.9	28.9	34.8	21.3	18.8	24.3	78.7	75.7	81.2
16	Region 20	12.4	9.8	14.5	10.4	8.8	11.1	24.4	22.9	27.0	30.8	27.7	33.2	22.0	18.5	24.7	78.0	75.3	81.5
29	Region 21	11.9	9.8	13.6	10.3	9.8	11.0	25.0	21.6	27.1	31.1	28.5	33.9	21.6	17.8	27.3	78.4	72.7	82.2
47	Region 22	11.0	8.7	13.0	10.1	9.3	11.0	25.4	22.6	27.7	32.8	28.9	36.0	20.7	18.6	24.8	79.3	75.2	81.4
140	Region 23	10.9	9.0	13.3	10.0	9.1	11.7	25.5	22.5	29.1	32.8	28.9	35.7	20.9	17.7	25.0	79.1	75.0	82.3
70	Region 24	11.3	9.0	16.7	10.0	7.1	11.3	25.7	21.5	28.4	32.5	24.1	36.7	20.5	17.7	26.4	79.5	73.6	82.3
14	Region 25	14.2	11.7	18.9	10.6	9.6	12.1	23.7	20.1	26.1	28.6	21.5	33.0	22.9	19.0	29.8	77.1	70.2	81.0
19	Region 26	11.7	9.8	14.3	10.2	9.6	10.8	24.6	22.8	26.2	32.0	27.0	35.9	21.5	19.0	24.0	78.5	76.0	81.0
12	Region 27	11.7	9.0	14.0	10.1	9.0	10.9	25.4	23.4	26.9	31.6	29.1	34.6	21.2	19.4	24.0	78.8	76.0	80.6
20	Region 28	12.0	10.5	13.9	10.4	9.8	10.9	25.1	23.5	26.9	31.1	28.9	32.2	21.4	18.9	23.1	78.6	76.9	81.1
12	Region 29	12.6	11.0	14.1	10.5	10.0	10.9	24.6	22.8	26.0	30.7	26.4	33.4	21.5	18.7	24.4	78.5	75.6	81.3
3	Region 30	12.0	11.3	12.8	10.8	10.3	11.1	24.1	23.5	24.6	30.7	29.6	32.9	22.4	21.2	23.0	77.6	77.0	78.8
1	Region 31	10.8	10.8	10.8	9.9	9.9	9.9	25.9	25.9	25.9	33.4	33.4	33.4	20.0	20.0	20.0	80.0	80.0	80.0
5	Region 32	12.3	11.5	13.6	10.6	10.3	11.0	24.8	23.3	26.6	30.8	29.6	32.2	21.5	19.5	22.4	78.5	77.6	80.5
51	Region 34	12.2	9.1	15.6	10.4	9.8	11.8	24.9	23.1	28.2	31.0	26.8	34.9	21.5	18.6	23.5	78.5	76.5	81.4
7	Region 35	12.5	10.8	13.8	10.3	9.9	10.8	24.4	23.5	25.9	30.5	29.2	32.2	22.3	20.6	23.5	77.7	76.5	79.4
8	Region 36	12.4	9.8	13.8	10.5	9.7	11.3	24.8	23.9	25.7	30.2	28.3	33.0	22.2	20.1	23.9	77.8	76.1	79.9
599	Ave white	11.6			10.3			25.2			31.8			21.2			78.8		
	Min white		8.7			7.1			20.1			21.5			17.7			54.4	
	Max white			18.9			15.3			29.1			36.7			29.8			82.3

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TABLE 24: ROFF MILLING OF WHITE MAIZE (2003/2004)
(continue)

Number of samples	Region	Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, % (Total meal)		
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
GRADE: WM 1																			
3	Region 8	13.3	9.9	15.7	10.7	9.9	11.1	25.0	23.8	25.8	29.3	26.6	33.1	21.7	20.9	22.8	78.3	77.2	79.1
3	Region 10	11.7	10.2	12.8	10.2	9.8	10.4	25.9	25.1	26.3	31.2	28.9	33.3	21.0	19.8	21.7	79.0	78.3	80.2
8	Region 11	11.3	10.7	12.3	11.0	9.9	14.1	26.1	24.3	28.1	31.5	30.2	33.7	20.1	18.1	22.2	79.9	77.8	81.9
6	Region 12	10.9	9.4	12.1	10.2	9.7	10.7	24.8	23.3	26.3	32.9	31.1	34.8	21.3	19.4	24.2	74.7	54.4	80.6
4	Region 13	11.6	10.8	12.4	10.6	9.9	11.9	24.8	24.2	25.8	31.6	30.3	33.5	21.4	20.9	21.9	78.6	78.1	79.1
12	Region 14	11.6	10.2	13.6	10.3	9.8	10.9	25.0	23.7	26.5	31.7	29.3	34.4	21.4	19.6	23.6	78.6	76.4	80.4
6	Region 15	11.4	11.1	11.7	10.3	10.0	10.5	26.1	25.7	26.6	31.6	30.8	32.9	20.5	19.4	21.5	79.5	78.5	80.6
11	Region 16	11.3	9.9	12.9	10.1	9.5	10.6	25.1	22.9	26.7	32.2	29.6	35.4	21.4	18.2	25.2	78.6	21.5	37.5
13	Region 17	12.0	8.9	13.3	10.3	9.4	10.9	24.7	23.1	26.6	31.5	29.3	35.3	21.5	19.8	23.3	78.5	76.7	80.2
14	Region 18	11.9	10.9	12.6	10.6	10.0	11.7	25.5	23.7	27.7	31.8	29.4	33.3	20.1	18.7	22.3	79.9	77.7	81.3
8	Region 19	11.9	10.3	12.9	10.3	9.9	10.7	25.2	24.4	26.5	31.3	29.1	34.8	21.2	18.8	22.9	78.8	77.1	81.2
7	Region 20	12.1	11.4	13.0	10.4	9.8	10.8	24.7	22.9	26.0	31.6	31.1	32.1	21.3	19.3	24.2	78.7	75.8	80.7
21	Region 21	12.0	10.5	13.6	10.3	9.8	11.0	24.8	21.6	27.1	31.1	28.5	33.9	21.8	17.8	27.3	78.2	72.7	82.2
33	Region 22	10.9	8.7	12.9	10.0	9.3	11.0	25.5	23.3	27.3	33.3	29.2	36.0	20.4	18.6	21.9	79.6	78.1	81.4
97	Region 23	10.8	9.0	13.3	10.1	9.1	11.7	25.5	22.5	29.1	32.8	28.9	35.3	20.8	17.7	25.0	79.2	75.0	82.3
57	Region 24	11.1	9.0	14.0	10.0	7.1	10.9	25.8	22.5	28.4	32.8	30.2	36.7	20.4	17.7	24.0	79.6	76.0	82.3
10	Region 25	13.3	11.7	15.7	10.4	9.6	11.0	23.6	20.1	26.1	29.5	26.9	33.0	23.1	19.7	29.8	76.9	70.2	80.3
15	Region 26	12.0	9.9	14.3	10.3	9.6	10.8	24.8	22.8	26.2	31.5	27.0	35.9	21.4	19.0	24.0	78.6	76.0	81.0
10	Region 27	11.2	9.0	12.3	10.0	9.0	10.6	25.4	23.4	26.9	32.0	30.9	34.6	21.4	19.4	24.0	78.6	76.0	80.6
16	Region 28	12.0	10.5	13.9	10.4	9.8	10.9	25.2	23.5	26.9	31.1	28.9	32.2	21.3	18.9	23.1	78.7	76.9	81.1
7	Region 29	12.2	11.0	13.1	10.4	10.0	10.8	24.8	23.7	26.0	31.4	29.9	33.4	21.1	18.7	23.5	78.9	76.5	81.3
1	Region 30	11.3	11.3	11.3	10.3	10.3	10.3	24.2	24.2	24.2	32.9	32.9	32.9	21.2	21.2	21.2	78.8	78.8	78.8
4	Region 32	12.3	11.5	13.6	10.6	10.3	11.0	24.7	23.3	26.6	30.5	29.6	32.1	22.0	21.7	22.4	78.0	77.6	78.3
40	Region 34	12.1	9.1	13.9	10.4	9.8	10.9	24.8	23.3	27.3	31.2	28.9	34.9	21.5	18.9	23.5	78.5	76.5	81.1
7	Region 35	12.5	10.8	13.8	10.3	9.9	10.8	24.4	23.5	25.9	30.5	29.2	32.2	22.3	20.6	23.5	77.7	76.5	79.4
6	Region 36	12.0	9.8	13.2	10.4	9.7	11.3	24.8	23.9	25.7	30.6	28.7	33.0	22.2	20.1	23.9	77.8	76.1	79.9
419	Ave WM 1	11.5			10.2			25.2			32.0			21.1			78.9		
	Min WM 1		8.7			7.1			20.1			26.6			17.7			54.4	
	Max WM 1			15.7			14.1			29.1			36.7			29.8			82.3

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TABLE 24: ROFF MILLING OF WHITE MAIZE (2003/2004)
(continue)

Number of samples	Region	Roff Milling																	
		Break 1, %			Break 2, %			Break 3, %			Grits, %			Bran/Germ, %			Extraction, %		(Total meal)
		ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.	ave.	min.	max.
	GRADE: WM 2																		
1	Region 11	12.2	12.2	12.2	10.1	10.1	10.1	24.8	24.8	24.8	31.0	31.0	31.0	21.8	21.8	21.8	78.2	78.2	78.2
7	Region 12	11.3	9.1	13.3	10.4	9.6	11.7	25.4	24.4	26.7	32.1	29.0	35.2	20.9	19.6	22.7	79.1	77.3	80.4
3	Region 13	12.0	11.3	12.6	10.4	10.3	10.5	24.6	23.7	25.8	32.1	31.0	33.3	20.9	19.3	22.9	79.1	77.1	80.7
7	Region 14	11.2	9.5	12.8	10.2	9.6	10.8	24.3	23.4	25.3	32.7	29.8	35.8	21.6	18.8	23.2	78.4	76.8	81.2
2	Region 15	11.6	11.6	11.6	11.0	10.4	11.7	25.8	24.4	27.2	31.0	30.6	31.5	20.5	20.2	20.8	79.5	79.2	79.8
1	Region 16	11.6	11.6	1.6	10.1	10.1	10.1	25.9	25.9	25.9	31.6	31.6	31.6	20.8	20.8	20.8	79.2	79.2	79.2
7	Region 17	11.9	11.2	13.3	10.4	10.0	11.1	25.2	23.6	27.0	31.6	29.7	33.0	20.9	19.1	22.3	79.1	77.7	80.9
11	Region 18	12.0	9.9	14.0	11.0	9.9	15.3	25.3	23.6	26.9	30.8	28.7	34.5	21.0	18.7	23.6	79.0	76.4	81.3
5	Region 19	12.1	11.2	12.9	10.5	10.3	10.8	25.0	23.3	25.8	30.8	28.9	32.9	21.6	19.8	24.3	78.4	75.7	80.2
5	Region 20	12.7	11.9	13.1	10.7	10.5	10.9	24.4	23.1	27.0	30.5	29.4	31.1	21.8	18.5	23.4	78.2	76.6	81.5
7	Region 21	11.7	9.8	13.6	10.3	9.9	10.7	25.6	24.2	26.1	31.3	29.7	33.7	21.1	19.9	23.8	78.9	76.2	80.1
10	Region 22	11.6	9.6	13.0	10.2	9.5	10.7	25.2	22.6	27.0	31.4	28.9	35.9	21.6	19.1	24.8	78.4	75.2	80.9
40	Region 23	10.9	9.2	12.5	10.0	9.3	10.9	25.4	22.7	27.2	32.6	29.9	35.7	21.1	18.8	24.0	78.9	76.0	81.2
12	Region 24	12.2	10.2	16.7	10.3	9.3	11.3	25.4	21.5	27.5	31.1	24.1	33.7	21.0	17.7	26.4	79.0	73.6	82.3
4	Region 25	16.3	12.6	18.9	11.2	10.5	12.1	23.7	21.4	26.0	26.3	21.5	31.9	22.5	19.0	26.1	77.5	73.9	81.0
4	Region 26	10.6	9.8	11.7	9.9	9.6	10.3	23.8	23.2	24.9	33.8	31.7	35.8	21.8	20.9	22.5	78.2	77.5	79.1
1	Region 27	13.7	13.7	13.7	10.7	10.7	10.7	26.4	26.4	26.4	29.1	29.1	29.1	20.2	20.2	20.2	79.8	79.8	79.8
4	Region 28	11.7	11.3	12.3	10.2	10.1	10.3	24.9	23.9	25.5	31.4	30.4	32.0	21.8	21.1	23.1	78.2	76.9	78.9
2	Region 29	13.8	13.6	14.1	10.6	10.5	10.8	23.4	22.8	23.9	29.4	28.4	30.3	22.8	21.7	23.9	77.2	76.1	78.3
1	Region 30	11.8	11.8	11.8	10.9	10.9	10.9	24.6	24.6	24.6	29.8	29.8	29.8	22.9	22.9	22.9	77.1	77.1	80.0
1	Region 31	10.8	10.8	10.8	9.9	9.9	9.9	25.9	25.9	25.9	33.4	33.4	33.4	20.0	20.0	20.0	80.0	80.0	80.0
1	Region 32	12.5	12.5	12.5	10.6	10.6	10.6	25.1	25.1	25.1	32.2	32.2	32.2	19.5	19.5	19.5	80.5	80.5	80.5
10	Region 34	12.8	10.5	15.6	10.5	10.0	11.8	25.2	23.1	28.2	30.2	26.8	33.1	21.4	18.6	23.3	78.6	76.7	81.4
2	Region 36	13.6	13.5	13.8	10.6	10.4	10.8	24.9	24.6	25.1	28.8	28.3	29.3	22.1	21.6	22.5	77.9	77.5	78.4
148	Ave WM 2	11.8			10.3			25.1			31.5			21.3			78.7		
	Min WM 2		9.1			9.3			21.4			21.5			17.7			73.6	
	Max WM 2			18.9			15.3			28.2			35.9			26.4			82.3

TABLE 24: ROFF MILLING OF WHITE MAIZE (2003/2004)
(continue)

Number of samples	Region	Roff Milling Break 1, % ave.	min.	max.	Break 2, % ave.	min.	max.	Break 3, % ave.	min.	max.	Grits, % ave.	min.	max.	Bran/Germ, % ave.	min.	max.	Extraction, % ave.	min.	(Total meal) max.
GRADE: WM 3																			
1	Region 13	14.0	14.0	14.0	10.7	10.7	10.7	24.6	24.6	24.6	28.0	28.0	28.0	22.7	22.7	22.7	77.3	77.3	77.3
2	Region 14	12.2	12.1	12.2	10.4	10.2	10.6	25.3	24.9	25.7	30.5	30.4	30.6	21.6	21.6	21.6	78.4	78.4	78.4
1	Region 15	10.1	10.1	10.1	9.5	9.5	9.5	23.4	23.4	23.4	32.1	32.1	32.1	24.7	24.7	24.7	75.3	75.3	75.3
1	Region 16	10.3	10.3	10.3	10.0	10.0	10.0	26.5	26.5	26.5	32.6	32.6	32.6	20.6	20.6	20.6	79.4	79.4	79.4
3	Region 17	11.5	10.7	12.7	10.0	9.9	10.2	24.6	23.5	25.6	31.4	30.3	32.3	22.4	22.1	22.9	77.6	77.1	77.9
1	Region 18	12.9	12.9	12.9	11.8	11.8	11.8	25.1	25.1	25.1	30.7	30.7	30.7	19.6	19.6	19.6	80.4	80.4	80.4
2	Region 19	13.7	13.5	13.9	11.0	10.8	11.2	25.1	24.8	25.4	29.5	29.1	29.9	20.7	20.5	20.8	79.3	79.2	79.5
3	Region 20	11.9	9.8	13.1	9.9	8.8	10.7	23.6	23.5	24.0	30.7	29.2	33.2	23.8	23.3	24.7	76.2	75.3	76.7
1	Region 21	11.8	11.8	11.8	10.1	10.1	10.1	25.3	25.3	25.3	31.2	31.2	31.2	21.5	21.5	21.5	78.5	78.5	78.5
4	Region 22	11.1	10.1	12.7	10.1	9.8	10.3	25.8	23.2	27.7	31.6	30.4	32.8	21.5	19.0	24.2	78.5	75.8	81.0
2	Region 23	10.9	10.8	11.1	10.2	10.2	10.3	25.8	24.7	27.0	32.3	32.0	32.5	20.7	19.6	21.8	79.3	78.2	80.4
1	Region 24	11.0	11.0	11.0	10.2	10.2	10.2	26.5	26.5	26.5	33.4	33.4	33.4	19.0	19.0	19.0	81.0	81.0	81.0
1	Region 27	14.0	14.0	14.0	10.9	10.9	10.9	24.4	24.4	24.4	30.3	30.3	30.3	20.4	20.4	20.4	79.6	79.6	79.6
3	Region 29	12.8	11.6	14.0	10.8	10.4	10.9	25.0	24.2	25.9	29.8	26.4	32.1	21.6	20.0	24.4	78.4	75.6	80.0
1	Region 30	12.8	12.8	12.8	11.1	11.1	11.1	23.5	23.5	23.5	29.6	29.6	29.6	23.0	23.0	23.0	77.0	77.0	77.0
1	Region 34	13.1	13.1	13.1	10.4	10.4	10.4	24.3	24.3	24.3	30.4	30.4	30.4	21.8	21.8	21.8	78.2	78.2	78.2
28	**Ave WM 3**	12.0			10.4			25.0			30.9			21.7			78.3		
	Min WM 3		9.8			8.8			23.2			26.4			19.0			75.3	
	Max WM 3			14.0			11.8			27.7			33.4			24.7			81.0
GRADE: COM																			
1	Region 12	13.8	13.8	13.8	10.9	10.9	10.9	23.0	23.0	23.0	27.8	27.8	27.8	24.4	24.4	24.4	75.6	75.6	75.6
1	Region 17	11.3	11.3	11.3	10.4	10.4	10.4	26.6	26.6	26.6	31.8	31.8	31.8	20.0	20.0	20.0	80.0	80.0	80.0
1	Region 20	14.5	14.5	14.5	11.1	11.1	11.1	24.0	24.0	24.0	27.7	27.7	27.7	22.7	22.7	22.7	77.3	77.3	77.3
1	Region 23	12.0	12.0	12.0	9.6	9.6	9.6	22.8	22.8	22.8	31.6	31.6	31.6	24.0	24.0	24.0	76.0	76.0	76.0
4	**Ave COM**	12.9			10.5			24.1			29.7			22.8			77.2		
	Min COM		11.3			9.6			22.8			27.7			20.0			75.6	
	Max COM			14.5			11.1			26.6			31.8			24.4			80.0
	Ave white maize	11.6			10.3			25.2			31.8			21.2			78.8		
	Min white maize		8.7			7.1			20.1			21.5			17.7			54.4	
	Max white maize			18.9			15.3			29.1			36.7			29.8			82.3

Genetic modification

Ten percent of this crop survey samples (90 samples) randomly selected were tested for the presence of the Cry 1 Ab protein (Bt gene) and Roundup Ready (RUR). The Mon 810 Cry1Ab maize limit of detection of the methodology used is 0,15 %.

Eighty-two percent of the samples tested positive for the Bt gene of which 57 % had values >1,0 %.

NK 603 RUR maize limit of detection of the methodology used is 0,25 %. Only one sample tested higher than the detection limit.

TABLE 25: PRESENCE OF GENETICALLY MODIFIED MAIZE

Region	Grade	% Bt gene	RUR	Region	Grade	% Bt gene	RUR
10	YM1	0.38	0.08	23	WM1	0.38	0.03
10	WM1	1.31	0.07	23	WM2	5.15	0.02
11	YM1	6.96	0.00	23	YM1	7.12	0.08
11	YM1	7.85	0.02	23	WM2	3.01	0.03
11	WM1	7.37	0.00	23	WM2	0.35	0.01
11	WM1	6.54	0.08	24	YM1	3.96	0.05
11	YM1	7.44	0.06	24	WM1	7.08	0.08
12	WM3	0.16	0.00	24	WM1	0.04	0.06
13	YM1	0.00	0.00	24	WM2	6.42	0.03
13	WM2	0.00	0.00	24	WM2	6.02	0.08
14	YM2	0.01	0.00	25	WM1	3.47	0.05
14	WM2	0.10	0.00	25	YM1	0.11	0.11
14	WM2	0.00	0.00	25	WM1	4.78	0.05
15	YM1	7.57	0.00	25	YM1	3.52	0.10
15	WM1	5.30	0.00	26	WM1	2.38	0.10
15	WM1	3.41	0.00	26	YM1	6.35	0.05
16	WM3	6.23	0.08	26	WM2	0.00	0.03
16	WM1	0.00	0.05	27	WM1	0.33	0.05
17	WM2	0.10	0.08	27	YM1	0.00	0.08
17	YM2	0.66	0.11	27	YM2	0.09	0.14
17	WM3	4.90	0.00	27	WM1	5.32	0.04
17	WM1	1.03	0.03	28	WM1	1.19	0.00
17	YM1	7.50	0.05	28	YM1	4.39	0.00
18	YM1	7.32	0.00	28	YM1	6.21	0.26
18	WM1	1.68	0.00	28	WM1	1.52	0.00
18	WM2	0.10	0.00	28	YM1	5.29	0.00
18	WM2	0.21	0.02	29	WM1	0.00	0.00
18	YM2	1.71	0.03	29	WM3	1.49	0.10
19	YM2	5.56	0.00	29	YM1	0.00	0.00
19	WM1	0.64	0.00	30	WM3	0.33	0.02
19	WM2	0.58	0.00	30	YM1	0.00	0.03
20	WM2	5.57	0.00	32	WM1	0.16	0.02
20	YM2	0.78	0.00	32	YM1	0.01	0.02
20	WM1	0.00	0.00	32	YM1	0.00	0.09
21	WM1	0.03	0.05	32	WM1	0.85	0.09
21	YM1	7.34	0.20	34	WM1	0.00	0.00
21	WM1	1.31	0.04	34	WM1	0.00	0.03
21	WM2	0.00	0.06	34	WM2	0.00	0.05
22	YM1	0.23	0.02	34	YM1	0.00	0.05
22	WM1	8.00	0.09	35	YM1	6.57	0.00
22	WM1	6.17	0.04	35	WM1	4.24	0.00
22	WM1	3.47	0.02	35	YM1	7.23	0.00
22	WM1	5.93	0.03	35	WM1	3.70	0.00
22	WM1	1.38	0.05	36	YM2	7.56	0.08
22	WM1	2.88	0.02	36	WM2	7.10	0.09

TABLE 26: MYCOTOXIN RESULTS 2003/2004

Region	Grade	Aflatoxin ppb	Fumonisin ppm	Deoxynivalenol ppm	Zearalenone ppm	Ochratoxin ppb
10	WM1	0	1.80	0	<0.1	<2
10	YM1	0	1.80	1.3	<0.1	<2
11	WM1	0	0.57	0	21.0	0
11	WM1	0	2.40	0	13.0	0
11	YM1	0	2.30	0	17.0	0
11	YM1	0	1.50	0	26.0	0
11	YM1	0	0.89	0.6	11.0	2.3
12	COM	0	0.62	0.7	<0.1	<2
13	WM2	0	2.20	<0.5	<0.1	2.9
13	YM1	0	5.60	1.1	<0.1	<2
14	WM2	0	0.46	0	<0.1	2.6
14	WM3	0	1.80	0	<0.1	4.2
14	YM2	0	0.96	<0.5	<0.1	<2
15	WM1	0	0.53	0	<0.1	<2
15	WM1	0	1.10	0	<0.1	2.9
15	YM1	0	0.41	0	<0.1	<2
16	WM1	0	2.20	0	24.0	0.5
16	WM3	0	2.10	0	0	<2
17	WM1	0	2.30	0.3	36.0	0
17	WM2	0	2.20	0	<0.1	<2
17	WM3	0	0.57	<0.5	<0.1	<2
17	YM1	0	4.50	0.4	0.1	0
17	YM2	0	3.70	0	<0.1	<2
18	WM1	0	3.90	0	<0.1	0
18	WM2	0	0.51	0.7	0.1	<2
18	WM2	0	3.90	0	0.1	1.0
18	YM1	0	2.40	0	0.1	3.7
18	YM2	0	1.70	0	17.0	1.1
19	WM1	0	0.17	0.6	0.1	2.7
19	WM2	0	1.50	0.5	<0.1	<2
19	YM2	0	4.60	<0.5	<0.1	<2
20	WM1	0	0.65	0.7	0.2	0
20	WM2	0	0.62	<0.5	1.0	<2
20	YM2	0	0.33	<0.5	0.1	<2
21	WM1	0	2.70	0.9	28.0	0.3
21	WM1	0	2.40	1.2	0.1	0.8
21	WM2	0	0.78	0.2	83.0	0
21	YM1	0	0.64	0	1.0	0.7
22	WM1	0	0.80	0	0.2	0
22	WM1	0	1.10	0	68.0	0.1
22	WM1	0	0.71	0.2	75.0	0
22	WM1	0	1.40	0	33.0	0
22	WM1	0	0.67	0.5	1.0	0
22	WM2	0	1.00	0	34.0	0
22	YM1	0	0.81	0	0.1	<2
23	WM1	0	1.20	0	4.0	0
23	WM2	0	1.40	0	0	0
23	WM2	0	1.30	0	0	0.5

TABLE 26: MYCOTOXIN RESULTS 2003/2004 (continue)

Region	Grade	Aflatoxin ppb	Fumonisin ppm	Deoxynivalenol ppm	Zearalenone ppm	Ochratoxin ppb
23	WM2	0	0.29	0	0	0.6
23	YM1	0	0.61	0	0	0
24	WM1	0	1.10	0	0	0
24	WM1	0	1.10	0.2	0	0
24	WM2	0	1.20	1.9	0.1	0
24	WM2	0	1.10	0	0	0.5
24	YM1	0	0.28	0	0	0
25	WM1	0	0.58	0	0	0
25	WM1	0	2.20	0	0.2	0
25	YM1	0	1.70	0	0	0
25	YM1	0	0.75	0	0	0
26	WM1	0	0.60	0	0	0
26	WM2	0	0.92	0	0	0
26	YM1	0	1.00	0	0	0
27	WM1	0	2.80	0	0	0
27	WM1	0	1.70	0	0	2.5
27	YM1	0	2.10	0	0	0.3
27	YM2	0	0.97	0	0	0.6
28	WM1	0	0.55	0	0	<2.0
28	WM1	0	0.75	1.7	0.1	<2.0
28	YM1	0	0.67	0.6	0	2.7
28	YM1	0	0.16	0	0	2.1
28	YM1	0	0.24	0	<0.1	2.5
29	WM1	0	0.76	0	0.3	0
29	WM3	0	0.54	0	0	0
29	YM1	0	0.26	0	0	0
30	WM3	0	0.86	13.0	1.2	0
30	YM1	0	1.50	3.0	0	0
32	WM1	0	1.10	0.8	0	<2.0
32	WM1	0	0.66	0	0	0
32	YM1	0	4.20	1.3	0	0
32	YM1	0	0.41	0.0	0	0.2
34	WM1	0	0.70	1.0	0.1	0
34	WM1	0	1.10	0	0	0
34	WM2	0	0.62	0	0.5	0.2
34	YM1	0	0.25	0	0	2.7
35	WM1	0	1.40	0	<0.1	<2.0
35	WM1	0	1.60	0	<0.1	0
35	YM1	0	0.92	0	<0.1	5.7
35	YM1	0	0.84	0	<0.1	2.5
36	WM2	0	0.32	<0.5	<0.1	<2.0
36	YM2	0	2.30	0	<0.1	<2.0
N = 90	Average	0	1.14	0.2	0.0	0.6
2002/2003		0	0.73	<0.5	<0.1	<2.0
2001/2002		0	0.76	0.6	<0.1	<2.0
2000/2001		0	1.67	0.7	<0.1	<2.0
1999/2000		0	0.64	-	-	-

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. 19131of 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 F*usarium 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 and 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 through 5 and 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
Test weight per bushel is the weight of grain required to fill a level Winchester bushel. Bushel weight is multiplied by the factor 1.2872 to get the hectolitre mass.
Bushel weight is done according to the Federal Grain Inspection Services' (FGIS) Grain Inspection Handbook II, Chapter 1, Section 1.11.

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) (ICC standard no. 123, 1976 - Revised 1994).

These sets of calibration samples were used to calibrate the Infratec 1241 Grain Analyzer (NIT).

3. Physical characteristics

Hectolitre mass
Hectolitre mass (grain density or bushel weight) 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 as well as to the dry milling 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 kernels for each sample through both 8 mm and 10 mm round-hole grading sieves, normally used in the seed industry.

Breakability - 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 6.3 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 the calibration of 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 meal.

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 roll nip - 0.08 mm. These settings are according to the specifications in the method developed by the ARC Grain Crops Institute (GCI). 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 are combined and then weighed

Break 1, 2 and 3 meal are combined to get the % extraction total meal.
Break 1, 2 and 3 meal are combined to get the % 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.

Fungi	Toxin	Method reference
Aspergillus flavus	Aflatoxin	Vicam Aflatest Instruction Manual May 5, 1999
Aspergillus ochraceus and several species of *Penicillium sp*.	Ochratoxin	Vicam Ochratest Instruction Manual May 4, 1999
Fusarium moniliforme	Fumonisin	Vicam Fumonitest Instruction Manual Nov 15, 2002
Fusarium graminearum	Zearalenone	Vicam Zearalatest Instruction Manual Nov 19, 1998
Fusarium graminearum	Deoxynivalenol (DON)	Vicam DONtest TAG Instruction Manual Apr 4, 2000

5. GMO (Genetically Modified Organisms)

90 samples of the 900 maize crop samples were tested for Bt and RUR Modified maize. Quantitative analyses for Bt maize were done using the ELISA Method, AACC Method 11 - 10 November 8, 2000. 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.