

# SOUTH AFRICAN COMMERCIAL MAIZE QUALITY 2003/2004

## Acknowledgments

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## 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

