South African

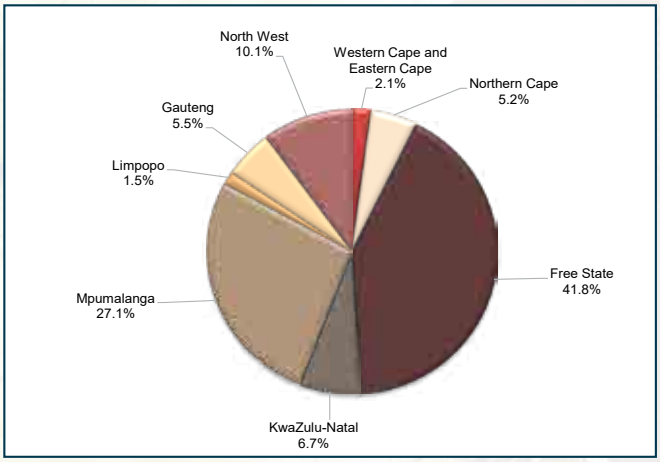
Commercial Maize Quality for the 2023/2024 season

Acknowledgments
With gratitude to:

- The Maize Trust for financial support in conducting this survey.
- Agbiz Grain and its members for providing the samples to make this survey possible.
- The Crop Estimates Committee (CEC) of the Department of Agriculture (NDA) for providing production related figures.
- South African Grain Information Service (SAGIS) for providing supply and demand figures relating to maize and maize products.

Introduction

During the 2024 harvesting season, a representative sample of each delivery of maize at the various grain intake points was taken according to the prescribed grading regulation. The sampling procedure for the samples used in this survey is described on page 115. A total of 1 000 composite samples, representing white and yellow maize of each production region, were received and analysed to determine the quality. The samples consisted of 518 white and 482 yellow maize samples.



Graph 1: Provincial contribution to the production of the 2023/24 maize crop

Figures provided by the CEC.

The quality attributes tested, include:
RSA grading: Samples were graded according to the following factors, as defined in the South African grading regulation: defective kernels above and below the 6.35 mm sieve, total defective kernels, foreign matter, other colour kernels and combined deviations.

USA grading: Samples were graded according to the American grading regulations to determine the following factors: Test weight per bushel (pounds), heat damaged kernels, total damaged kernels, broken corn and foreign matter (BCFM) and other colour.

Nutritional values: Moisture, crude protein, crude fat, crude fibre and starch.
Physical quality factors: Test weight (kg/hl), 100 kernel mass, kernel size, breakage susceptibility, stress cracks, milling index and grit yield.
All white maize samples were milled on the Bühler MCKA maize mill, while 50% of the samples were also milled on the Roff laboratory maize mill for comparison purposes. The whiteness index of all the milled maize meal samples were determined.

Mycotoxin analyses were performed on 350 samples representative of white and yellow maize produced per region.

Please refer to pages 115 - 119 for the methodologies followed.

The maize crop quality survey is performed annually by the Southern African Grain Laboratory NPC (SAGL). SAGL was established in 1997 on request of the Grain Industry. SAGL is an ISO 17025 accredited testing laboratory and participates in a number of proficiency testing schemes, both nationally and internationally, as part of our ongoing quality assurance procedures to demonstrate technical competency and international comparability.

The results of this, the 27th survey, as well as previous years' surveys are available on the SAGL website (www.sagl.co.za). The report, in an easy to page format, is also available on the website. Hard copy reports are distributed to industry stakeholders and interested parties.

In addition to the quality information, production figures (obtained from the Crop Estimates Committee (CEC)) relating to hectares planted, tons produced and yields obtained on a national as well as provincial basis, over an eleven season period, are provided in this report. SAGIS (South African Grain Information Service) supply and demand figures over several years are provided in table and graph format, also import and export data. Information on maize processed per province as well as the manufacture, import and export of maize products is also included in this report. The national grading regulations as published in Government Gazettes of 16 February 2024 as well as 1 March 2024, are provided on pages 124 to 134.

The long-term goal of this crop quality survey is the annual determination of the quality of the commercial maize crop on a national level. This valuable data set reveals general tendencies, highlights quality differences in the commercial maize produced in different local production regions for local market requirements and provides important information on the quality of commercial maize intended for export. During seasons when maize is imported for domestic use, the quality of the imported maize can be compared to that of locally produced maize.

The quality data generated is also referred to by various role players in the maize industry, adds value to research projects and serves as the basis for discussions when maize grading regulations have to be revised.

With funding from the Maize Trust, a data mining project on thirteen season's crop quality data was conducted and the results transferred to a Geographic Information System (GIS) map system, reflecting all the maize producing areas of South Africa. These maps are updated annually.

Production

The final figure for the 2023/24 season's commercial maize crop as overseen by the National Crop Estimates Liaison Committee (CELC) and shown in Graph 2, is 12 850 000 tons. This figure represents a year-on-year decrease of almost 22% and is also almost 6% lower than the 10-year crop average (13 610 350 tons). White maize's contribution to the total production was 6 055 000 tons (47.1%) and that of yellow maize 6 795 000 tons (52.9%).

The national Crop Estimates Committee's (CEC) estimated total production figures were revised, using the South African Grain Information Services' (SAGIS) published figures of actual deliveries as basis for the calculations. Figures from the maize utilisation survey, conducted by the Department of Agriculture, Land Reform and Rural Development (DALLRD) to determine on-farm usage and retentions as well as the telephonic survey conducted by the National Crop Statistics Consortium (NCSC), were added to the SAGIS delivery figures to calculate the final crop production figures.