

No samples representing region 29 (Mpumalanga) were received for inclusion in this crop survey.

The contributions of the three main production areas made up 83% of the total maize production in the RSA.

See chart for the different provinces and the list of Grain Production regions, Grain Handlers and silos (pages 12 - 15).

3.1 Main production regions – summary of results

The quality of the maize produced in the three main maize production regions (North West, Free State and Mpumalanga) compared quite well overall. The figures given below are all weighted averages.

The Free State and Mpumalanga maize averaged hectolitre mass of 76.7 and 76.6 kg/hl respectively, North West maize averaged almost 1 kg/hl higher at 77.5 kg/hl. North West also had the highest 100 kernel mass of 33.9 g, followed by Mpumalanga with 33.5 g and the Free State with 33.0 g.

The percentage stress cracks observed in the three regions compared very well, with Mpumalanga and North West averaging 5 % and the Free State 6 %. The Free state had a breakage susceptibility of maize passing through the 6.35 mm sieve of 2.1 %, North West 1.7 % and Mpumalanga the lowest of 1.3 %.

North West had the largest kernel size with an average of 23.0 % of the maize having kernels larger than 10 mm (Free State 20.9 % and Mpumalanga 18.6 %).

The average milling index in Mpumalanga was 85.9, 86.8 in the Free State and 89.6 in North West. The % extraction of total meal on the Roff mill followed the same trend with 77.4 % in Mpumalanga, 78.4 % in the Free State and 78.7 % in North West.

The white maize from North West gave an average whiteness index of 30.6 (unsifted) and 22.7 (sifted). Mpumalanga had an average of 33.1 (unsifted) and 24.8 (sifted) and the Free State 31.4 (unsifted) and 22.2 (sifted).

With regards to grading, Mpumalanga had the lowest total deviations percentage of 5.1 %, followed by the Free State with 7.2 % and North West with 9.0 %.

In general there were no significant differences in the nutritional components. North West had the highest fat content of 4.0 %, followed by the Free

State with 3.9 % and Mpumalanga with 3.8 %. The protein content ranged from 7.8 % (Free State) to 8.0 % (North West), Mpumalanga averaged 7.9 %. North West and the Free State had similar starch contents of 73.7 % and 73.8 % respectively. Mpumalanga had the highest starch content of 74.1 %.

4. Imported Maize

Five imported maize samples have been received and analysed since the 1st of May 2011 to date. Three of these samples were from Argentina and two from the Ukraine. Three samples were graded YM2 and two samples YM3. The major downgrading factor of imported maize to YM2 and YM3, was the high percentage of defective kernels below the 6.35 mm sieve.

The imported maize had an average hectolitre mass of 72.7 kg/hl (Argentina) and 71.1 kg/hl (Ukraine). South African yellow maize of grades YM2 and YM3 had an average hectolitre mass of 75.4 kg/hl. The same grades RSA yellow maize had an average 100 kernel mass of 31.3 g compared to the 28.9 g of Argentinean maize and 28.7 g of Ukrainian maize.

The percentage stress cracks on imported maize was much higher (60 – 70 %) than on local maize (7 %) and as can be expected therefore also the breakage susceptibility. The imported maize kernels were on average smaller than locally produced maize.

South African maize had lower protein and fat contents than imported maize (7.9 % and 3.6 %) compared to 8.1 % and 4.2 % for Argentina and 8.2 % and 4.2 % for the Ukraine. Argentinean maize had a lower starch content 73.7 % than RSA grades YM2 and YM3 with 74.3 %. The maize from the Ukraine had the highest starch content of 74.8 %.

Mycotoxin and GMO analyses were done on two composite sample of maize, one comprising maize received from Argentina and the other Ukrainian maize. The sample from Argentina had a DON level of 307 µg/kg compared to the average of 47 µg/kg on RSA YM2 maize. 35 µg/kg T-2 Toxin was also detected, no T-2 Toxin was detected on the RSA maize. No mycotoxins were detected on the Ukrainian sample. Only the Ukrainian sample tested GM positive and also only for the Cry1Ab trait. South African yellow maize YM2 tested positive for both the Cry1Ab and Roundup Ready traits.

The quality of the imported maize are given on pages 61 – 62.