

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.