

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, while grading and nutritional values compared well.

Free State

This province produced 32 % of all the commercial maize in South Africa, of which 66 % was white maize and 34 % yellow maize.

The average percentage total defective kernels for Free State was 8,2 %. North West also averaged 8,2% and Mpumalanga 6,5 %.

The maize produced in the Free State averaged a hectolitre mass of 76,0 kg/hl. (North West was 75,7 kg/hl and Mpumalanga 76,2 kg/hl.) The white maize in the Free State averaged 76,4 kg/hl and the yellow maize 75,4 kg/hl.

The 100 kernel weight for Free State averaged 33,2 g, with the white maize averaging 33,9 g and the yellow maize 31,9 g. (Mpumalanga and North West averaged 33,0 g and 32,1 g respectively.)

This province had the largest kernel size with an average of 27,5 % of the maize having kernels > 10mm. (Mpumalanga was 24,9 % and North West 24,4%.)

Stress cracks were the highest in the Free State with 4,9 %, Mpumalanga had 4,1 % and the North West the lowest percentage with 3,4.

The average milling index was the lowest in the Free State (89,5 %), closely followed by North West with 90,9 % and Mpumalanga with 92,7 %.

The average Fumonisin content was the lowest of the three provinces at 0,50 ppm but averaged the highest Deoxynivalenol content of 3,02 ppm.

Mpumalanga

This province produced 25 % of the total commercial maize production in South Africa,

of which 62 % was white maize and 38 % yellow maize.

In all three provinces white maize averaged a 2 % higher 100 kernel weight than yellow maize while the hectolitre mass of white maize averaged about 1 % higher than yellow maize.

The maize kernels produced in Mpumalanga had an average breakage susceptibility of 1,8 g passing through the 6,35 mm sieve while Free State and Mpumalanga both had an average of 2,4 g passing through the 6,35 mm sieve.

In all three provinces the maize gave an average fat content between 3,9 % and 4,0 %. The starch content in these three regions averaged between 71,2 % to 71,4 %.

Mpumalanga had an average Fumonisin content of 1,2 ppm and an average Deoxynivalenol content of 2,16 ppm.

North West

This province produced 24 % of all the commercial maize grown in South Africa, of which 80 % was white maize and 20 % yellow maize.

The average defective kernels for North West above the 6,35 mm sieve averaged 6,4 %, the Free State followed with 6,3 % and Mpumalanga with 4,3 %. The average defective kernels below the 6.35 mm sieve for all three regions were more or less the same.

The North West gave the highest average protein of 8,5 % (db), followed by the Free State (8,4 %) and Mpumalanga (8,2 %).

The white maize from North West gave the highest average whiteness index of 19,9 (sifted 87:13). (The Free State had an average of 18,8 and Mpumalanga 19,0). The average milling index was 90,9 for North West.

The average Fumonisin content was 1,0 ppm and the average Deoxynivalenol content was 2,75 ppm for North West.