

Maize quality (Summary)

Overall

The white and yellow maize graded similarly with regards to the sample percentage per grade. White maize had an average hectolitre mass of 78,2 kg/hl compared to the 76,7 kg/hl of yellow maize. Yellow maize kernels were smaller than white kernels.

Yellow maize had a slightly lower fat content (3,6 % (db)) than white maize (4,0 % (db)), while the starch content in yellow maize (72,3 % (db)) were slightly higher than in white maize (71,9 % (db)). The average protein content in white maize was 8,6 % (db) and in yellow maize 8,4 % (db).

Main production regions

The maize quality of the three main maize producing provinces differed in some aspects.

Free State

This province produced 38 % of all the commercial maize in South Africa, of which 60 % was white maize and 40 % yellow maize.

The weighted average percentage total defective kernels for the Free State was 3,4 %. North West averaged 3,1 % and Mpumalanga 4,1 %.

The maize produced in the Free State averaged a hectolitre mass of 77,6 kg/hl. (North West 77,9 kg/hl and Mpumalanga 77,1 kg/hl.) The white maize in the Free State averaged 77,9 kg/hl and the yellow maize 76,7 kg/hl.

The 100 kernel mass for the Free State averaged 33,0 g, with the white maize averaging 34,0 g and the yellow maize 31,7 g. (Mpumalanga and North West both averaged 33,7 g.)

Stress cracks were the highest in the Free State (3 %), then Mpumalanga with 4 %, and North West had 3 %.

The average milling index in the Free State was 95,3, in North West 99,9 and in Mpumalanga 98,4.

The Free State gave the highest average protein of 8,8 % (db), followed by North West (8,7 %) and Mpumalanga (8,4 %).

Mpumalanga

This province produced 23 % of the total commercial maize production in South Africa, of which 53 % was white maize and 47 % yellow maize.

In all three provinces white maize averaged about 1,2 g higher 100 kernel mass than yellow maize, while the hectolitre mass of white maize averaged about 1 kg/hl 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 the Free State and North West had averages of 1,9 g and 1,4 g respectively passing through the 6,35 mm sieve.

All three provinces gave an average fat content between 3,8 % and 3,9 %. The starch content in these three regions averaged between 71,8 % and 72,0 %.

North West

This province produced 22 % of all the commercial maize grown in South Africa, of which 78 % was white maize and 22 % yellow maize.

The average defective kernels for North West above the 6,35 mm sieve averaged the lowest with 2,2 %, the Free State averaged 2,6 % and Mpumalanga had the highest average of 3,9 %. The average defective kernels below the 6.35 mm sieve for all three regions were more or less the same.

This province had the “largest” kernel size with an average of 22,6 % of the maize having kernels > 10mm. (Mpumalanga 21,0 % and the Free State 20,2 %.)

The white maize from North West gave an average whiteness index of 20,1 (sifted 87:13). The Free State had an average of 20,4 and Mpumalanga 17,0.