

Main maize producing provinces – comparison of results

The quality of the maize produced in the three main maize production provinces, namely Mpumalanga (regions 29 to 33), the Free State (regions 21 to 28) and North West (regions 12 to 20) are compared below, the figures provided are all weighted averages.

The average test weights expressed in kilogram per hectoliter, varied little between the three provinces. Mpumalanga averaged 72.4 kg/hl, followed by North West with 72.2 kg/hl and the Free State with 72.0 kg/hl. The 100 kernel mass values ranged from 31.5 g in Mpumalanga to 31.9 g in the Free State, North West averaged 31.6 g. In 2014/2015, the averages varied between 28.9 g and 30.9 g.

The kernel sizes, as indicated by the percentage of sample above a 10 mm sieve as well as the percentage below a 8 mm sieve, were smaller than the ten year average. Small kernel sizes, also observed on the previous crop, can be attributed to the drought conditions. Last season, the average kernel sizes above the 10 mm sieve ranged from 10.8 % to 13.5%. The largest kernel size with regards to percentage of kernels above the 10 mm sieve this season, was again found in the Free State (16.1%). Mpumalanga had the smallest kernel sizes namely 13.7%, North West averaged 14.7%.

Little variation was observed with regards to breakage susceptibility and stress cracks between the provinces. North West, with 1.1% had the highest percentage of maize passing through the 6.35 mm sieve, the Free State and North West both with 0.9%, followed closely. This indicates that the maize in the North West was slightly more susceptible to breakage. The percentage stress cracks varied from 4% in both Mpumalanga and North West, to 6% in the Free State. The maize kernels from North West and Mpumalanga both averaged 5% stress cracks and the Free State 6%. These percentages compared well with the previous season.

The percentage total defective kernels is the sum total of the defective kernels that remained above the 6.35 mm sieve and the defective kernels which passed through the 6.35 mm sieve. Defective kernels includes amongst others, mouldy, discoloured, insect damaged and small kernels that can pass through the 6.35 mm round hole sieve. Averages ranged from a low of 4.1% in Mpumalanga to a high of 8.0% in North West. The Free State averaged 6.2%. Please see page 89 for the definition of Defective maize kernels as quoted from the Grading Regulations.

The average milling index on both white and yellow maize was lower compared to the previous season. Mpumalanga averaged 93.1 (93.4), the Free State 96.3 (101.0) and North West 99.4 (102.6). The values in brackets are the averages for the 2014/2015 season. The same trend was observed with the percentage total extraction, with Mpumalanga averaging 78.2%, the Free State 78.5% and North West 78.7%. The total extraction was determined on the Roff laboratory mill.

The meal obtained from the white maize in Mpumalanga gave an average whiteness index of 27.3 (unsifted) and 17.7 (sifted). The Free State had an average of 26.1 (unsifted) and 17.8 (sifted) and North West 24.3 (unsifted) and 16.9 (sifted). All averages were higher than last season, indicating whiter meal this season. Factors that can influence meal whiteness such as the presence of defective kernels and other colour maize (yellow) were however comparable to the previous season.

The nutritional component analyses namely fat, protein and starch compared well between the three provinces. The Free State and North West averaged a slightly higher fat content (4.1%) than Mpumalanga with 4.0%. The lowest protein content was found in Mpumalanga (9.6%), the Free State averaged 10.1% and North West 10.2%. Mpumalanga had the highest average starch content of 72.4%, followed by the North West with 72.2% and the Free State with 72.0%. These values are all reported on a dry basis.