

Main maize producing provinces – comparison of results

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

The highest test weights expressed in kilogram per hectolitre were observed in the Free State and North West where both averaged 78.2 kg/hl. Mpumalanga averaged two units lower at 76.2 kg/hl. The 100 kernel mass values ranged from 28.9 g in North West to 30.9 g in the Free State. In 2013/2014, the averaged varied between 32.0 g and 33.2 g.

As already mentioned in the report, the kernel sizes were significantly reduced this season. Last season the average kernel sizes ranged between 19.4% (Free State) and 20.1% (Mpumalanga). The largest kernel size with regards to percentage of kernels above the 10 mm sieve this season was found in the Free State (13.5%). North West had the smallest kernel sizes (10.8%) and Mpumalanga averaged 12.3%.

Little variation was observed with regards to breakage susceptibility and stress cracks between the provinces. Mpumalanga, with 1.3% had the highest percentage of maize passing through the 6.35 mm sieve, the Free State and North West with 1.2% and 1.1% respectively, followed closely. The maize kernels from North West and Mpumalanga both averaged 5% stress cracks and the Free State 6%. These percentages were 1 to 2% lower than the previous season.

The percentage total defective kernels that includes amongst others, mouldy, discoloured, insect damaged and small kernels that can pass through the 6.35 mm round hole sieve, ranged from 4.0% in Mpumalanga to 6.0% in both the Free State and North West. Please see page 87 for the definition of Defective maize kernels as quoted from the Grading Regulations.

The average milling index on both white and yellow maize was higher compared to the previous season. Mpumalanga averaged 93.4 (87.8), the Free State 101.0 (92.0) and North West 102.6 (94.1). The values in brackets are the averages for the 2013/2014 season. The Free State had the highest percentage total extraction (79.0%) on the Roff laboratory mill as in the previous season, but was closely followed by North West with 78.9%. Mpumalanga had the lowest total extraction rate of 78.3%.

The meal obtained from the white maize in Mpumalanga gave an average whiteness index of 24.4 (unsifted) and 14.3 (sifted). North West had an average of 22.0 (unsifted) and 15.5 (sifted) and the Free State 21.7 (unsifted) and 14.5 (sifted). All averages were down from last season, indicating that the meal was less white. 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 had the highest fat content of 4.2%, followed by North West with 4.1% and Mpumalanga with 4.0%. The lowest protein content was found in Mpumalanga (9.2%), the Free State and North West both averaged 9.8%. The average protein content increased between 0.7% and 1.2% for the three provinces from the 2013/2014 season. Although Mpumalanga had the lowest fat and protein contents, it had the highest starch content of 73.0%. North West and the Free State averaged 72.6% and 72.3% respectively.