

The average fat content of the 2010/2011 crop samples was 3.9 % compared to the 4.0 % of the 2009/2010 samples and the weighted ten year average of 3.9 %. The average protein content (7.9 %) was 0.4 % lower than the previous season's average and 0.8 % lower than the ten year weighted average. The starch content this season increased on average with 1.7 % compared to the weighted ten year average of 72.1 % and 0.9 % compared to the previous season.

The fat content of white maize was similar to the previous season and 0.5 % higher than that of yellow maize. The protein content of white maize was 0.1 % higher than that of yellow maize. The starch content of both white and yellow maize is up from the previous season by 1.0 % and 0.8 % respectively.

Please refer to Table 11 on page 36.

2.4 Physical Quality factors

Hectolitre mass/Bushel weight is applied as a grading factor in the USA grading regulations. White maize had an average hectolitre mass of 77.7 kg/hl compared to the 76.2 kg/hl of yellow maize. The hectolitre mass in total varied from 69.0 kg/hl to 81.8 kg/hl. Only seven samples were below the minimum requirement (56.0 lbs or 72.1 kg/hl) for USA grade 1 maize.

The 100 kernel mass averaged 33.5 g which is 1.2 g lower than the previous season but 0.5 g higher than the ten year average.

Yellow maize kernels were smaller on average than white kernels (above the 10 mm sieve). The breakage susceptibility for white maize on average is similar to the previous season and slightly less susceptible than yellow maize. The % stress cracks varied from 0 – 31 %, averaged 5 % and compared well with previous seasons.

The milling index varied from 40.2 to 111.7 and averaged 87.5, slightly lower than the previous season. The average milling index for yellow maize is lower (85.8) than that of white maize (88.6).

2.5 Roff milling and whiteness index (WI)

The average % extraction of total meal with the Roff mill averaged 78.4 % and varied from 70.7 % to 82.3 % in white maize. This average is 0.6 % higher than the previous season (2009/2010).

The whiteness index averaged 31.0 for unsifted and 22.5 for sifted maize meal. Sieving the sample eliminates differences in the readings as a result of particle size.

The whiteness index of the previous season averaged 27.7 for unsifted maize meal. Sifted maize meal averaged 22.4.

The higher the WI value, the whiter the meal. The main contributing factors causing lower WI values are the percentage defective kernels, the presence of another colour maize like yellow maize as well as cultivar.

2.6 Mycotoxins

The average mycotoxin levels were lower than in previous seasons. The Fumonisin level averaged 139 µg/kg (ppb) and ranged from 0 to 1 401 µg/kg. The average Fumonisin level last season was 251 µg/kg. The highest Deoxynivalenol (DON) level detected was 883 µg/kg compared to the 1 845 µg/kg of the previous season. The average DON level was 49 µg/kg, 206 µg/kg the previous season. Zearalenone levels averaged at 5 µg/kg with a maximum of 187 µg/kg. Zearalenone were not detected in any of the samples of the previous season.

No Aflatoxin, Ochratoxin A or T-2 Toxin were detected in the samples.

The European Union specifies the following maximum levels for mycotoxins on maize:

Fumonisin

- Unprocessed maize with the exception of unprocessed maize intended to be processed by wet milling, 4 000 µg/kg.
- Maize intended for direct human consumption, maize-based foods for direct consumption, with certain exceptions, 1 000 µg/kg.
- Maize-based breakfast cereals and maize-based snacks, 800 µg/kg.
- Processed maize-based foods and baby foods for infants and young children, 200 µg/kg.
- Milling fractions and other milling products with particle size > 500 µm not used for direct human consumption, 1 400 µg/kg.
- Milling fractions and other milling products with particle size ≤ 500 µm not used for direct human consumption, 2 000 µg/kg.

DON

- Unprocessed maize, with the exception of unprocessed maize intended to be processed by wet milling, 1 750 µg/kg.
- Milling fractions and other milling products with particle size > 500 µm not used for direct human consumption, 750 µg/kg.
- Milling fractions and other milling products with particle size ≤ 500 µm not used for direct human consumption, 1 250 µg/kg.

Zearalenone

- Unprocessed maize with the exception of unprocessed maize intended to be processed by wet