Genetic Modification

The SAGL screened 100 of the crop samples to test for MON810 (Bt maize event) and NK603 (RUR).

The methodology the SAGL uses is a quantitative enzyme-linked immuno sorbent assay. The SAGL does however not report quantities recorded below the limit of detection and above the value of the reference standards used, the reason being that the methodology can not accurately measure beyond those values. MON810 were positively identified in 95 % of the samples tested and NK603 in 69 % of the samples tested. Please note that the crop quality samples received by the SAGL are actually composite samples made up by the silos per class and grade of individual deliveries.

Mycotoxins

Aflatoxin was detected on only one randomly selected crop sample. Twenty-five samples tested positive for Ochratoxin A.

The Fumonisin average was 0,47 ppm. Eight samples tested higher than 2,0 ppm for Fumonisin with a maximum of 5,5 ppm.

Deoxynivalenol (DON) was detected in 38 % of the samples tested, giving an average of 0,24 ppm, with a maximum of 1,7 ppm.

Three samples showed traces of Zearalenone, with a maximum value of 0,1 ppm reported.

Imported Maize

South Africa has imported 27 432 tons of yellow maize from Brazil as on 30/01/2009 for the 2007/2008 production season. (Season ends on 30/04/2009.) (SAGIS website.)

SAGL are awaiting samples for quality analyses from the above mentioned shipment. No import quality data is available yet for the 2007/2008 season.

The quality of the imported maize for the 2006/2007 season, compared to the average quality of the RSA maize of the same class and grade and season, are given on pages 43 and 44.

2006/2007 Imported maize (01/05/2007 - 30/04/2008)

Ninety-four samples from imported maize were analysed. The maize was imported from Argentina and Switzerland. Of these maize, four samples were graded as YM2 and ninety samples graded as Class Other Maize.

The major downgrading factor of imported maize to YM2 was the high percentage of defective kernels below the 6,35 mm sieve.

Imported maize downgraded to Class Other Maize were mainly due to the high percentage of pinked maize kernels.

The imported YM2 had average hectolitre masses of 77,1 kg/hl and 76,2 kg/hl from Argentina and Switzerland respectively. RSA YM2 had an average hectolitre mass of 74,4 kg/hl.

The imported maize had even smaller kernels than the 2006/2007 local crop which was characterized by small kernels.

The average weighted fat content of the imported maize (4,8 % (db)) were higher than the average of the RSA maize (3,5 % (db)), while the RSA maize gave a slightly higher protein content and a markedly better starch content.

The imported maize had a weighted average total Aflatoxin of 0,50 ppb (µg/kg) with a maximum of 9,0 ppb in one of the samples.

The weighted average Fumonisin content of imported maize were 1,72 ppm (mg/kg) with a maximum of 5,30 ppm. RSA maize in that same class and grade averaged 1,05 ppm Fumonisin and a maximum of 4,50 ppm.

RSA maize of the same class and grade of the 2006/2007 season had an average Deoxynivalenol (DON) content of 0,96 ppm with a maximum of 2,10 ppm, while the imported maize had a weighted average of 0,91 ppm and a maximum of 2,80 ppm DON. The averages values of Ochratoxin A and Zearalenone of imported maize were low while none of these mycotoxins were detected in the 2006/2007 RSA YM2 and RSA COM maize.