Mycotoxins

Mycotoxins are secondary metabolites produced by fungi on agricultural commodities intended for human and animal consumption. These mycotoxins are potentially dangerous to humans and animals since they are, amongst other also carcinogens. Aside from health risks, mycotoxin contamination can also reduce the value of the crops. Evironmental factors such as temperature, humidity, soil and storage conditions influence toxin production.

During 2010 SAGL implemented a multi-mycotoxin screening method using UPLC-MS/MS. With this technique simultaneous quantification and confirmation of Aflatoxin G_1; B_1; G_2; B_2, Fumonisin B_1; B_2; B_3, Deoxynivalenol, T2-toxin, Zearalenone and Ochratoxin A are possible in one run.

Fourty samples (representing different regions as well as different classes and grades) were selected randomly for mycotoxin analyses.

Deoxynivalenol were detected on two of the samples tested.

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

Aflatoxins

- All cereals and all produts derived from cereals, including processed cereal products, with the exception of maize, rice, processed cereal-based foods for infants and young children and dietary foods for special medical purposes intended specifically for infants, $B_1 \leq 2.0$ µg/kg.

- All cereals and all produts derived from cereals, including processed cereal products, with the exception of maize, rice, processed cereal-based foods for infants and young children and dietary foods for special medical purposes intended specifically for infants, sum of $B_1 + B_2 + G_1 + G_2 \leq 4.0$ µg/kg.

Ochratoxin A

- Unprocessed cereals, ≤ 5.0 µg/kg.

- All products derived from unprocessed cereals, including processed cereal products and cereals intended for direct human cconsumption, ≤ 3.0 µg/kg.

Deoxynivalenol

- Unprocessed cereals other than durum wheat, oats and maize, ≤ 1250 µg/kg.

- Cereals intended for direct human consumption, cereal flour, bran and germ as end product marketed for direct human consumption, with the certain exceptions (see full regulation) ≤ 750 µg/kg.

- Bread (including small bakery wares), pastries, biscuits, cereal snacks and breakfast cereals, ≤ 500 µg/kg.

Zearalenone

- Unprocessed cereals other than maize ≤ 100 µg/kg.

- Cereals intended for direct human consumption, cereal flour, bran and germ as end product marketed for direct human consumption and the germ with the certain exceptions (see full regulation) ≤ 75 µg/kg.

- Bread (including small bakery wares), pastries, biscuits, cereal snacks and breakfast cereals, excluding maize-snacks and maize-based breakfast cereals, ≤ 50 µg/kg.