OCCURENCE OF DEOXYNIVALENOL IN WINTER WHEAT GRAINS HARVESTED IN HUNGARY OVER THE YEARS 2012-2017

Tamás Meszlényi[1,2*], Beáta Tóth[1], Dénes Szieberth[3], Ákos Mesterházy[1]

[1]Cereal Research Non Profit Ltd. 6726, Szeged, HUNGARY
[2]Doctoral School of Plant Science, Hungarian University of Agriculture and Life Sciences, Gödöllő, HUNGARY
[3]Hungarian Maize Club, Kazinczy Ferenc utca 12, Kőszárhegy 8152, HUNGARY

*corresponding author: tamas.meszlenyi@gabonakutato.hu

Deoxynivalenol (DON) is the most important regulated mycotoxin associated with wheat grains. Contaminated wheat and wheat products constitute a serious hazard to health of human and livestock. Monitoring their occurrence in grains is necessary in order to indirectly ensure food safety. Over a six years period, presence of DON in 5806 unprocessed winter wheat grain samples collected from all wheat growing regions of Hungary were evaluated by SGS Hungária Ltd. Samples were analyzed for DON contamination by accredited laboratories using a validated HPLC-method. The detected concentrations were generally low as mostly local epidemics occurred in Hungary during this period. However, harmful levels of DON were found in many samples (up to 6.15 mg/kg). Contamination levels varied moderately between years and counties. The samples collected from the south and south-east regions of the country showed the highest levels of toxin contaminations. In 2015, in case of three out of the nineteen counties, the observed average DON concentration levels were higher than the EU threshold. This work can contribute to the development of predictive models and to the potential adjustments of maximum levels set by authorities.