

MYCOTOXIN CONTENT EVALUATIONS OF CORN HYBRIDS ADAPTED TO QUÉBEC GROWTH CONDITIONS

PROJECT LEADERS

Gilles Tremblay and Sylvie Rioux,
Centre de recherche sur les grains (CEROM)

PROJECT OBJECTIVE

The main objective of this research is to determine, under natural disease pressure, whether there are any differences between hybrids (Genotype effect, G) in grain content levels of four different mycotoxins (Deoxynivalenol (DON), fumonisin (FUM), zearalenone (ZEN) and T-2 toxin) in three different environments (Environment effect, E). G x E interactions will also be evaluated.

FINAL RESULTS

Results indicated that grain corn is usually under critical content levels for Deoxynivalenol (DON), fumonisin (FUM), zearalenone (ZEA) and T-2 toxin (T2).

- For the FUM, ZEA and T2 toxins, 98 to 100% of the hybrids had toxin content under the critical levels.
- For DON toxin, 84% of the hybrids had ≤ 1 ppm in 2700-2900 and 2500-2700 CHU areas but only 58% in the 2300-2500 CHU area. Still, for DON toxin, 96-98% of the hybrids had ≤ 2 ppm in 2700-2900 and 2500-2700 CHU areas and 86% in the 2300-2500 CHU areas.
- Fungicide (Headline®) application was effective in reducing T2 toxin levels, but had no impact on DON, FUM or ZEA.

Of all the toxins analyzed, DON was the most prevalent and most frequently exceeded critical levels associated with, feeding corn to pigs. The results will help farmers with the selection of hybrids with a better tolerance to mycotoxins, helping to minimize the negative impacts of feeding mycotoxin contaminated grain.

