Curtailing use of herbicides on corn could lead to sizable increase in fungal contamination

Environmental and economic issues affect decision-making for whether or not to control small infestations of pests and pathogens in crops. … The prevalence of toxins, arising from biotic interactions with fungal diseases, can alter crop quality rather than quantity….

Here, we tested how the withdrawal of herbicide and insecticide protection in maize, alone and in combination, might induce higher prevalence of up to 23 mycotoxins in the crop at harvest.

. . . .

The overall trend following the cessation of pesticide protection, however, is for higher levels of mycotoxins…. Overall mycotoxin concentrations approached 55–67 % of their maximum acceptable rate, a situation of reduced security margin that could lead to economic penalties and market restrictions.

We found that the removal of herbicides had a greater impact than that of insecticides on the prevalence of mycotoxins…. This finding is further reinforced by the observation that certain species of weeds harbor several species of Fusarium. This means that weeds …[serve] as reservoirs of inoculum in the field.

Our findings illustrate the importance of sanitary evaluation when the implementation of new cropping systems will alter the distribution and occurrence of pests and pathogens.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Request access to full text of the article from the author via Research Gate here:
Withdrawal of maize protection by herbicides and insecticides increases mycotoxins contamination near maximum thresholds