

Report of ONTARIO CORN COMMITTEE Pilot Project to Test HYBRID SUSCEPTIBILITY to DON

IMMEDIATE RELEASE

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In 2019, the Ontario Corn Committee (OCC) initiated voluntary inoculated trials at Ridgetown and Ottawa for rating corn hybrids for susceptibility to DON accumulation. Hybrids entered by the seed companies were tested at both locations using two types of inoculation: silk channel and wounding (to simulate insect or bird damage). Use of inoculated trials ensures that all hybrids are subjected to the same level and types of disease pressure and provides data in years when there is little natural infection.

Unfortunately, a number of inconsistencies were observed in the results of the 2019 DON trials so that the OCC cannot report hybrid ratings:

- There was no correlation between the results at the two locations.
- DON levels at Ottawa were several times higher than at Ridgetown and there were no significant differences among the hybrids at Ottawa. It was concluded that the inoculation techniques used at Ottawa were too aggressive for comparing hybrids for farm use and the 2019 data from Ottawa cannot be used.
- There were significant differences among the hybrids at Ridgetown for both types of inoculation. However, there were serious discrepancies among the ratings for some hybrids in the 2019 inoculated trial at Ridgetown compared to the 2019 Tilbury Performance Trials and the 2018 Performance Trials. (The Tilbury Performance Trial was the only one in which there were significant levels of DON in 2019.) Some hybrids that appeared to be fairly tolerant in 2018 appeared to be quite susceptible in the 2019 inoculated trial and vice versa. Similar discrepancies were noted between the Tilbury 2019 results and the 2018 results.
- There also appeared to be a bias against early hybrids in the inoculated trial, which as a group had higher DON levels than did adapted or later maturing hybrids. This was attributed to differences in weather conditions around silking time. The hybrids had been grouped according to maturity to facilitate inoculation and misting/irrigation at the appropriate stage of development but this did not achieve the desired result in 2019 because of the unusual weather.

Because of these inconsistencies, the OCC determined that no 2019 DON data with hybrid names attached could be made public.

Because no hybrid can be deemed to be “resistant” to DON under all growing conditions, the best way to minimize risk is to diversify the selection of hybrids planted. (e.g. a number of hybrids and different maturities.) The 2018 results can serve as a useful guide in hybrid selection but the 2019 results indicate that environmental conditions can have an over-riding effect on hybrid performance and thus results can vary from year to year and even field to field.

The inoculated trials will be continued in 2020 in an effort to develop a testing technique that more reliably indicates performance under natural conditions. Testing protocols at both locations will be modified to reduce the risk of a recurrence of the problems that arose in 2019.

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