AGRONOMY ALERT • GRAIN FARMERS OF ONTARIO

DON in corn

What to look for



WHAT IS DON (DEOXYNIVALENOL)?

DON is a mycotoxin primarily produced by Gibberella ear rot. Infected grain can result in affected palatability, and performance can have toxic effects on livestock.

As a result of this toxic effect, grain with higher levels of contamination can be rejected or, if accepted, may be discounted at the delivery point. •



CONDITIONS FOR GIBBERELLA EAR MOULD INFECTION

Infection occurs with warm (27 °C), humid temperatures, combined with rainfall, that splashes the fungal spores on the silks two to six days after emergence. Cooler, wet weather after silking also, favours disease development.

Extended periods of rain in the fall, promotes fungal growth and increases the severity of the disease. •



IDENTIFYING GIBBERELLA EAR ROT

Infection begins in the ear tip and moves down toward the ear base producing a dark red or pink coloured mould. Sometimes it has a whitish appearance from the mycelium, but is usually referred to as pink mould. Mycotoxins produced by Gibberella include DON, ZEN and T-2 toxin. •



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HOW TO PREVENT INFECTION?

- Use multiple hybrids with different silking and/or planting dates to mitigate potential problems of a severe disease outbreak.
- Spray a fungicide that suppresses ear mould. Application at silking, when silks are fully emerged and have not browned off (dried up) is recommended. Always read and follow the product label.
- Use of less susceptible hybrids, as well as a labelled fungicide at the right rate and time is the best method. Check with your seed provider for hybrid ratings.



WHAT TO DO IF YOU SEE GIBBERELLA EAR ROT IN YOUR FIELD?

- Call Agricorp to discuss your situation.
- Aim to harvest infected fields as soon as possible. Do not mix old crop or low DON corn with potentially mouldy corn from this harvest.
- Try to get the cleanest sample out of the combine. We suggest running the combine with concave setting open and cylinder speed set low. Set combine to provide high levels of wind to blow out lighter kernels, fines, and cob pieces. Be sure adjustments do not increase kernel damage, as downgrades can result.
- Dry grain quickly, using high temperature drying to 15 per cent or less. Once grain is dry the spread of infection is halted but does not lower the mycotoxins already present. Cool grain quickly to less than 10 °C or lower as it will slow growth of fungi.
- Take a representative sample to elevator to check grade, quality, and DON levels. If concerns arise, have a discussion before you deliver your grain.
- When delivering the grain to the elevator, be sure they are following the proper DON testing procedures (noted below).

NOTE: DON does not necessarily show up visually in a sample, if there is mould there might not be DON, if there is DON there might not be visible ear moulds present. •

PROPER DON TESTING PROCEDURES

If you are concerned about how your crop is tested for DON, ask your elevator to grind a 2 kg sample, mix thoroughly, then take a sub-sample for DON testing. Research shows that larger samples of ground grain produced more repeatable DON results. For more information, visit www.gfo.ca/testing-for-don-2023. •

For more information on DON visit www.cropprotectionnetwork.org and view the 2023 Ontario Grain Corn Ear Mould and Deoxynivalenol (DON) Mycotoxin Survey that will be published in October by the Ontario Ministry of Agriculture Food and Rural Affairs, with additional funding from Grain Farmers of Ontario. This survey will give a good indication of hot spots around the province so that you may take a proactive approach to corn harvest. For more information on DON research, please refer to the Research Project Summaries Database: https://gfo.ca/research/research-project-summaries/.

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