



# Agronomy Factsheet:

## DON (DEOXYNIVALENOL) IN CORN

DON is a mycotoxin primarily produced by Gibberella ear rot. Infected grain can affect palatability, performance, and 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 promote fungal growth and increase the disease's severity.

### 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 it is usually referred to as pink mould. Mycotoxins produced by Gibberella include DON, ZEN and T-2 toxin.

### HOW TO PREVENT INFECTION?

- Choose less susceptible hybrids. Reference the current Ontario Corn Hybrid DON Screening Report (found at [GoCrops.ca](http://GoCrops.ca)) when selecting hybrids for an indication of the susceptibility for DON infection.
- Spread out the pollination timing of your corn fields to reduce the risk of all fields pollinating during a peak infection period. This can be done by selecting hybrids with different pollination dates or staggering the planting period of different fields.
- Spray a fungicide that suppresses ear mould. Application at silking, when silks have fully emerged and have not browned off (dried up), is recommended. Always read and follow the product label.
- Use of less susceptible hybrids and a labelled fungicide at the right rate and time is the best method. Check with your seed provider for hybrid ratings.



GIBBERELLA EAR ROT  
(PHOTO: ALBERT TENUTA, OMAFA).

## 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.
- Try to get the cleanest sample out of the combine. We suggest running the combine with the concave setting open and the 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 the grain is dry, the spread of infection is halted, but the mycotoxins that are already present are not reduced. Cool the grain quickly to less than 10 °C or lower it as it will slow the growth of fungi.
- Take a representative sample to the elevator to check grade, quality, and DON levels. If concerns arise, discuss them 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.

## PROPER DON TESTING PROCEDURES

If you are concerned about how your crop is tested for DON, ask your elevator to grind a two-kilogram sample, mix it thoroughly, and then take a sub-sample for DON testing. Research shows that larger samples of ground grain produced more repeatable DON results.

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

### More information

[Testing for DON](#)

[Accuracy in testing](#)

