



## GRAIN MILLERS

### Use and Application of Fungicides on Food Grade Corn.

The application of registered fungicides on food grade corn hybrids is an acceptable practice in the reduction and possible prevention of certain fungal diseases of corn. Growers considering the use of fungicides in corn production should consider the following items when planning a strategy for fungicide usage. Contact Grain Millers or your local ag supplier/agronomist if you suspect disease pressure in your food grade corn production.

1. Know your food grade corn hybrid's characteristics.
  - Resistance/tolerance or susceptibility to certain plant diseases
  - Ear and leaf structure – tight husks, upright leaf, upright ear
  - Hybrid dry down rate
2. Knowledge of environmental conditions and field conditions that aid in the development of fungal diseases.
  - Air temperature, humidity, dew points
  - Soil moisture – excessive or droughty
  - Previous crop – continuous corn or other host plants. Many disease organisms are already “planted” in the soil from previous seasons residue and are growing.
  - Tillage – conventional tillage, minimum till, no-till
3. Proper field scouting and I.D. of fungal diseases of corn plants.
  - Correct stage of growth – pre or post pollination, kernel fill,
  - Correct plant part area – leaves above or below ear, flag leaf, ear leaf
  - Visual symptom on leaf – long or short lesions, color of lesions, yellow or dead leaf tissue
4. Knowledge of available labeled fungicides for food grade corn production.
  - See attached list of labeled fungicides for use in food grade corn production
  - Timing of fungicide application – stage of growth, time of day, weather conditions – spraying too early or too late may reduce effectiveness and/or affect development and final yields.
  - Application method for best coverage – ground or air, gallons per acre of carrier, spray pressure
  - Harvest interval – how many days can you spray before harvest?

It is also important to monitor insect populations and insect feeding on corn plants, especially after the ear has formed and silks have emerged. There are many fungal diseases that will enter the plant through insect feeding injury, damaging the corn ear and kernels. These injuries can be avenues for infections from diseases that will cause serious yield and quality reduction. The deterioration of the ear and kernels, may increase the occurrence of ear and cob rot, storage molds and the potential development of serious mycotoxins, such as Aflatoxin, Fumonisin and Vomitoxin. The development of certain plant diseases through insect damage increases with the following environmental factors:

- Warm, wet weather, late season rainfall – good environment for Diplodia.
- Cool and wet weather, late season rainfall – good environment for Gibberella Ear Rot
- Warm and Dry – good environment for Aspergillus Ear Rot and Fusarium Kernel and Ear Rot.
- Upright corn ears and tightly held ear husks – can trap moisture in and around the ear and its kernels increasing the chance for the development of disease.
- Warm temperatures and dry soil conditions put plants in a stress condition, weakening resistance to diseases.
- Slow maturity, because of weather (warm and wet) or fungicide applications can extend time for disease development.