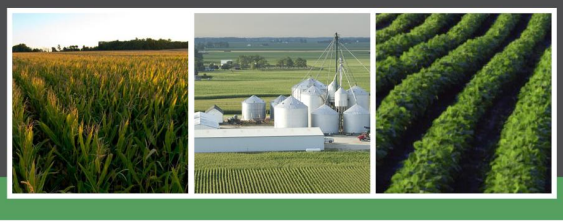

Agronomic Spotlight

Corn Ear Mold Identification and Management

Potential for damage from ear molds is greatest from silking to harvest. There are at least seven ear mold fungi that can attack corn, reducing yield potential, grain quality, and feed value. Crop rotation, heavy tillage, planting corn products with insect protection traits, and good fertilization are some options to help decrease the risk of ear mold infection.[1]

WHAT TO CONSIDER

Pathogens that cause ear molds can remain viable in the soil for several years. Fields with a history of ear molds and stalk rots should be carefully scouted.

Proper disease identification is important because some molds contain mycotoxins which can be dangerous to feed to livestock.

YIELD IMPACT

Corn affected by ear molds can reduce grain quality, limit storage options and be dangerous to feed. Mold growth will continue until temperatures drop below about 40 degrees F.[3] However, any mycotoxins that formed prior to drying will remain in the corn and will not be destroyed during high-temperature drying or during storage.[3]

Various corn ear molds. See Table 1 on Page 2.

Ear Mold	Color	Appearance	Conditions	Mycotoxin
Aspergillus	Grey-green of light green	Powdery mold starting at tip of ear	Damaged silks or kernels typically from insects or hail; common in dry years	Aflatoxin; toxic to livestock and humans
Cladosporium	Gray to black or very dark green	Streaks scattered over ear; can appear powdery; able to rub color of kernel surface	Infects kernels damaged by frost, insects, or hail	No feeding toxicity
Diplodia	White to gray; severe infection can cause entire ear to appear brown	Usually begins at base of ear and develops towards the tip; grows between kernels; often speck sized black, fungal, fruiting bodies (pycnidia) will form on the husks and at the base of kernels	Most often in reduced tillage and continuous corn	Previously not known to produce mycotoxins, but some association with diplodiosis in cattle and sheep
Fusarium	White to pink	Individual kernels with fungal growth scattered across ear and/or kernels with starburst pattern	Infection points include kernel growth cracks and ear damage from insects; warm and dry weather favors disease development	Fumonisin; toxic to livestock, particularly horses
Gibberella	Often bright pink; varies from red to white	Usually begins at ear tip and progresses to the base	Infection favored by cool, wet weather after silking	Vomotoxin, zearalenone; harmful to livestock
Penicillium	Blue to green	Grows on and between kernels; powdery	Infects kernels damaged by frost, insects, or hail	Not known to produce mycotoxin
Trichoderma	Green	Grows on and between husks and kernels	Favored by insect of mechanical damage to the ear	Not known to product mycotoxin

Table 1. Corn Ear Mold Characteristics.

MANAGEMENT OPTIONS

Environmental conditions play a major role in the risk and development of corn ear molds. Proper corn product selection can help mitigate risk. Factors to consider are insect protection traits, plant health ratings, and husk characteristics. Plants with husks that are shorter or open more easily during drydown may allow insects and pathogens to enter the ear and increase the risk of disease.

Some molds can be toxic to livestock and proper identification is needed before using contaminated grain for feed. If you suspect an issue, always send a sample to a toxicology lab for analysis. If concentrations of a mycotoxin are present, a veterinarian or an Extension Specialist can help determine if it is safe to feed to livestock.

Proper grain drying and storage are important when diseases are evident. Corn should be dried to less than 15% moisture content within 48 hours of harvest.[2]

Sources
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