

Pioneer Talks Crops

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The growing season this year in the upper Mid-South has proved to be a tough one in many areas. We experienced a cool and wet season in 2009, but 2010 has been on the opposite end of the growing environment spectrum with periods of near

100 degree temperatures with minimal rainfall. We will have a very wide yield spectrum this year with dryland fields of corn with almost no yield to irrigated fields over 200 bushels. Molds and mycotoxins are always a concern in corn production in years when we encounter stress during grain fill.

Mycotoxins are toxic chemical compounds produced by fungi and can be present in several different forms. Some fungi or ear

molds that infect corn kernels in the field and in storage can produce mycotoxins that are harmful to humans and livestock. Some of the most common ear molds this year are Penicillium rot and Aspergillus flavus.

Penicillium rot is also referred to as common blue mold. The color is a darker blue to blue-green color and has a dusty appearance. The mold can erupt out of the side of the kernel and the spores will congregate between the rows on the ear. The embryo of the seed also may be affected, so some grain handlers may call this blue-eye mold as well. Penicillium can affect grain quality and test weight. Typically this

mold is caused by premature plant death that leaves excess moisture in the ear providing a good environment for mold to set in.

Aspergillus flavus is the mold of primary concern this year and is responsible for the mycotoxin aflatoxin. Aflatoxin is the only mycotoxin for which the U.S. Food and Drug Administration has established formal action levels. This means corn grain with aflatoxins above 20 parts per billion (ppb) may not be sold for transport across state lines. Aflatoxin is favored by hot weather and drought stress. Spores of the fungus are produced on crop residue on the soil surface and on discarded kernels around grain bins. The spores become airborne and can infect kernels by growing down the silk channel. Aspergillus flavus can be identified by the color

of the mold. It is mostly an army green or an olive color as opposed to the blue-green color of Penicillium.

It currently is not possible to eliminate mycotoxins in

the field. However, we can minimize their influence by timely harvest and properly adjusted combines for maximum cleaning with little kernel damage. Grain bins must be properly cleaned, and grain going into the bin also may need to be screened. Dry grain to 15 percent moisture as quickly as possible and monitor grain on a regular basis throughout storage life to ensure moisture and temperature are maintained at correct levels. Protect grain from insects. △



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