

Pioneer Talks Crops

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This year, the growing season in the upper mid-South has proved to be a tough one in many areas. We experienced an ideal spring with a cool, wet growing environment, but quite the opposite this summer with periods of near 100 degree temperatures and minimal rainfall. We should have a wide yield spectrum this year between dryland cornfields with low yields to irrigated fields with more than 200 bushels per acre. In addition to water environments, crop stress and insects seem to be hot topics this season when discussing yield potential.

When the corn crop has experienced a lot of stress, most growers are concerned with aflatoxin. *Aspergillus flavus* is the mold responsible for the mycotoxin aflatoxin. Aflatoxin is the only mycotoxin for which the U.S. Food and Drug Administration (FDA) has established formal action levels. The FDA states that corn grain with aflatoxin levels above 20 parts per billion (ppb) may not be sold for transport across state lines.

Spores of the aflatoxin fungus are produced on crop residue on the soil surface and on discarded kernels around grain bins. It is a common myth that aflatoxin is solely caused by corn earworm feeding.

In reality, once airborne, spores can infect kernels through a variety of means including growing down the silk channel, through wounds to the husk due to insect feeding, from

bird damage or hail, or through stress cracks and silk cuts.

Recent studies from the University of Georgia and Texas A&M demonstrated *Aspergillus* infection and aflatoxin production can occur in the absence of earworm feeding, even on hybrids with earworm resistance. *Aspergillus flavus* can be identified by the color of the mold; an army green or olive color as opposed to the blue-green color of *Penicillium*.

Currently, it is not possible to eliminate mycotoxins in the field. However, we can minimize their influence through timely harvest and combines that are adjusted properly for maximum cleaning with little kernel damage. It also is important to harvest and store corn from irrigated fields separate from dryland stress fields. Grain bins must be cleaned properly, and grain going



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into the bin needs to be screened carefully.

Dry grain to 15 percent moisture or below as quickly as possible and monitor grain on a regular basis throughout storage life to insure moisture and temperature are maintained at correct levels. It also is critical to protect grain from insects, thereby ensuring maximum productivity. With proper management, growers can lessen and even reduce the impact of *Aspergillus flavus*. Δ

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