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Mississippi Department of Agriculture Corn Bulletin

Drought conditions in Louisiana have helped to bring about a problem with their corn crop and farmers in our state need to be on the lookout. The problem is aflatoxin, and severe drought conditions during June and early July could increase the likelihood of aflatoxin contamination in the grain, especially on stressed dryland acreage.

“We have a much greater potential to see aflatoxin in this year’s corn crop,” says Agriculture Commissioner Lester Spell, Jr. “That’s because of dry weather conditions and great increases in the amount of corn acreage. All corn farmers need to be aware of this situation,” says Spell.

Aflatoxin is a by-product of the growth of the fungus *Aspergillus flavus* on corn kernels. Producers can minimize the threat of aflatoxin buildup in the field by harvesting early. Harvest timing directly influences the duration corn is subjected to environmental conditions.

Corn reaches physiological maturity at about 30% moisture and can be harvested anytime thereafter. However, grain elevators usually will either not accept or will penalize corn that is above 15% moisture, because many are not equipped to handle large amounts of “wet” corn. Researchers at Mississippi State University say that corn will lose around 0.6% moisture per day during the dry down period.

Wet grain, which is not quickly dried during warm conditions, will begin heating up to intolerable levels very quickly due to excessive grain respiration. Wet grain should be immediately dried to below 15% moisture or hauled to an elevator (which will dry the grain). High capacity continuous-flow driers are best suited for on-farm drying within these constraints. Wet grain should not be stored in trucks, combines, bins or any non-aerated site more than 4-6 hours before beginning drying.

Producers must be extremely cautious about utilizing bins designed for handling rice or other low moisture grain to dry corn. These bins can only be utilized to effectively dry corn without increasing aflatoxin levels by treating them as shallow in-bin batch systems. Thus, grain depth must be shallow enough so that the drying front will proceed through the grain (commonly 3-5 feet deep or up to 8 feet if stirring devices are utilized) within a 12-24 hour time period.

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Fungal infection is more likely in shriveled, cracked kernels and foreign material. Thus, contamination sources may be eliminated by properly adjusting the combine for minimal kernel damage and maximum cleaning or running the grain through a mechanical cleaner. Foreign material present in a grain sample will also enhance mold growth in storage.

Fungal infection can occur during storage as well as in the field. Thus, sanitation of handling and storage facilities is very important. Spores from fungi on infected grain readily disperse during handling and contaminate unaffected grain. Remove any corn and debris remaining in combines, trucks, carts, pits, augers, bins, elevators, etc. on a daily basis.

A water/bleach solution can be used to kill fungal growth when cleaning handling facilities. However, since bleach solutions are very corrosive, thoroughly wash with water after cleaning. It is important to remember that bleach solutions can only be used on empty storage containers. Insects and rodents are another potential contamination source so be sure to check your storage containers for them as well.

Farmers wanting to check their corn for aflatoxin can take samples to their local grain elevator, which should have testing equipment on-site. Or, they can take their own sample and send it to the Mississippi State Chemical Lab. You can contact the lab at (601) 325-3324 for details. For more information, contact your local extension service agent or Dr. Erick Larson, Corn Specialist at Mississippi State University at (601) 325-2311.