Test corn before feeding

THE recent corn harvest was quite unfavorable, and livestock feeders need a long-term plan for feeding the 2009 crop. In much of the Midwest, corn harvest was later than in any year in recent memory, and the prolonged moist conditions in many cases caused molds to develop on the kernels, as ears were standing on stalks in the field.

These ear rots have resulted in many questions concerning possible mycotoxin production when conditions are cool and wet. "Wet conditions are ideal for mold growth," says Randy Cragoe, a ruminant nutrition specialist with Cragoe Consulting at Brookings, S.D.

"Ideally, grain at harvest shouldn't have more than 13% to 14% moisture," he adds. "If the grain contains more than this recommended moisture, it is highly suggested to use mold inhibitors, which are organic acids, at appropriate concentrations. These mold inhibitors reduce the further growth of molds and the subsequent mycotoxin production."

Cragoe says high-moisture corn should be analyzed for harmful mycotoxins before storage or feeding, and should be stored in separate, temporary structures such as bags to avoid contamination of clean corn in storage bins. Also, care should be taken to make sure silos and bunks are packed well. The use of silage inoculants can be valuable. Care should be taken to store straw and hay properly as they also can be a source of mycotoxins.

The toxins can be produced by molds found in soil and can grow on grain, forages and silage. Mycotoxins can form in the field preharvest and may continue to form under suboptimal storage conditions postharvest. Aflatoxins and *Fusarium* mycotoxins often are associated with moldy corn.

Key Points

- Think beyond harvest before feeding corn from this fall.
- Test corn that had mold on ears in the field for mycotoxins.
- Problems vary for livestock fed corn contaminated with mold.

Problems vary

Problems for livestock can be quite variable depending on species and type of toxins identified in the feed source, says Cragoe. Swine and horses have a high sensitivity to contaminated feed, and feed avoidance by the animal is a common symptom of mycotoxin issues.

For gestating and lactating sows, if they do eat the feed, symptoms such as immune suppression, reduced ability to absorb nutrients from the gastrointestinal tract and a reduced use of proteins in the body are more common.

Ruminant animals are the most resistant due to microorganisms in the rumen that can degrade toxins before they enter the bloodstream. Harmful effects can be observed, however, in high-producing dairy cows. Reduced milk production, impaired reproduction and immunity suppression in cows are possible effects of mycotoxins.

Use a feed additive?

Once mycotoxins have made their way into the feed, there are still a few options available to the farmer. "You either should not feed the contaminated feed or you should use an effective mycotoxin adsorbent," says Cragoe.

There are two types of adsorbents: silica-based polymers and carbon-based organic polymers. Silica-type materials are readily available, and many are effective against aflatoxins but ineffective against other types. An organic glucomannan polymer extracted from the cell wall of yeast is a natural fiber source and often can be used at practical levels of inclusion.

Need more information? Cragoe says mycotoxins are a leading area of study at Alltech. Visit *www.alltech.com*.

Source: Cragoe, Alltech

Moldy corn nightmare not over yet

By **TOM J. BECHMAN**

MOLDS that grew in cornfields last summer and fall aren't going away quietly, even though most fields are harvested. It's proving to be a problem with long tentacles, reaching into various facets of your operation.

Here are some possible ramifications.

Field mold growth continues. For corn in the bin or corn still coming out of the field, it's important to drop and maintain grain moisture below 19%. Above 19%, molds that can produce mycotoxins can still grow, notes Richard Stroshine, Purdue University grain quality expert.

Storage molds could grow. Kernels damaged by field molds before they entered the bin are perfect targets for storage molds that can grow at lower temperatures. Those kernels or broken pieces of kernels are more susceptible. Draw down moisture inside the bin to 14% to 14.5%, and keep it there, Stroshine says.

Pigs may be picky. One farmer mixed up feed with new corn and divided the same feed mixture among three finishing barns of pigs. Two barns ate it; one didn't. Whether pigs were a different size or just what caused refusal isn't clear. The farmer tested each field left to harvest to find fields with no mold or very low mycotoxin levels.

Cattle may refuse it. Holstein steers fed bagged, complete feed liked it fine until the producer bought a new lot of the same brand. Presto! They wouldn't eat it. He didn't test it, but suspects mycotoxins. Blending with other feed and adding molasses helped get rid of it.

Here are some ways to avoid the aforementioned situations.

Set up a lab. One megapork operation decided to set up its own testing lab for mycotoxins right on the farm. If a sample tests positive, quick action keeps it out of the ration.

Test at the mill. One regional manufacturer of cattle show feed says he isn't taking chances. He tests every batch of corn for mycotoxins. There's no way he's risking messing up someone's megabucks show steer, he concludes.