Cattle Concerns

By Beth Ellen Doran, ISU Extension & Outreach Beef Program Specialist

Black Mold – Producers have reported black dust exiting from combines as corn is harvested. This may occur in fields containing corn plants that have premature death. The dead plants are colonized by a saprophytic fungi that feeds on dead plant material. The likely candidates with dark spores are Cladosporium, Alternaria and Aspergillus niger. None of these directly produce aflatoxins.

As far as animal hazards are concerned, there shouldn’t be any mycotoxin problems associated with these particular fungi. But, if these fields have a lot of prematurely dead plants due to drought stress, there should still be some caution about possible aflatoxin contamination. Also, black mold could cause palatability issues, depending on the level of concentration.

The airborne spores do pose a respiratory hazard to humans. Producers are encouraged to wear a NIOSH-approved N-95 respirator, which is commonly referred to as a two-strap dust mask. One-strap masks do not offer protection and are not recommended. (Private Correspondence with Gary Munkvold, ISU Plant Pathology and Microbiology, and Charles Schwab, ISU Agricultural and Biosystems Engineering)

Aflatoxin – Producers are encouraged to scout their fields and check for Aspergillus flavus, which is a mold fungus that can produce aflatoxins. The fungi can be recognized by the olive green or grayish-green mold on the corn kernels. But, aflatoxins are not automatically produced whenever grain becomes moldy.

However, if aflatoxins are produced, they are harmful or fatal to livestock and are considered carcinogenic (cancer-causing) to animals and humans. Aflatoxins are usually highest during hot, dry summers. Prime conditions for aflatoxins are warm (>70⁰ nights) during the latter stages of grain fill in a period of drought.

The Food and Drug Administration (FDA) has established an “action level” of 20 ppb for aflatoxins in corn in interstate commerce. The FDA also has guidelines for using contaminated grain in livestock feed.

FDA guidelines for acceptable aflatoxin level in corn based on intended use (www.fda.gov).

<table>
<thead>
<tr>
<th>Intended Use</th>
<th>Aflatoxin Level (ppb)</th>
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<tbody>
<tr>
<td>Milk (dairy feed)</td>
<td>None detected</td>
</tr>
<tr>
<td>Corn of unknown destination</td>
<td>≤20</td>
</tr>
<tr>
<td>Corn for young animals</td>
<td>≤20</td>
</tr>
<tr>
<td>Corn for dairy cattle</td>
<td>≤20</td>
</tr>
<tr>
<td>Corn for breeding beef cattle, swine &amp; mature poultry</td>
<td>&lt;100</td>
</tr>
<tr>
<td>Corn for finishing swine</td>
<td>&lt;200</td>
</tr>
<tr>
<td>Corn for finishing cattle</td>
<td>&lt;300</td>
</tr>
</tbody>
</table>

These guidelines are based on maintaining performance and avoiding disease related to aflatoxin. In dairy cattle, prevention of aflatoxin residues in the milk is the concern.

Livestock may die from ingesting high concentrations of aflatoxin in contaminated feed. But, most commonly, aflatoxin reduces feed efficiency and growth in livestock. It can also cause liver damage and suppress the immune system of the animal.

If you see Aspergillus flavus (the greenish-grayish mold) in the field, first contact your crop insurance agent as they will only adjust unharvested corn and then will determine what
you should do with the affected corn. If they recommend harvest, harvest and dry the corn as soon as possible.

Send any suspected grain samples to a commercial lab or the ISU Veterinary Diagnostic Laboratory to confirm if aflatoxin is present. Suspect corn should be stored separately until the test result is known.

Corn that is contaminated at >20 ppb cannot be sold for interstate commerce. However, aflatoxin-contaminated grain may be used for animal feed under the guidelines in the table above and with proper documentation.

Ensiling corn usually does not reduce aflatoxin concentrations. Corn with aflatoxins can be used for ethanol production. Aflatoxins do not accumulate in the ethanol, but will be concentrated in the distiller’s grain co-product. A rough estimate is that aflatoxin levels in the co-product feeds will be three times those in whole corn. Thus, processors may not accept corn with aflatoxin if their co-product markets, such as dairy feed, are sensitive to aflatoxin levels.

(Taken from AFLATOXINS in CORN – PM 1800 Reviewed August 2012)

2012 Crop Season
By Paul Kassel, ISU Extension & Outreach Field Agronomist

The 2012 crop season is a year we will not soon forget. The drought, record grain prices and drought associated pest problems will give us something to discuss for years to come.

Much of the discussion regarding the drought of 2012 is centered on the corn crop. However, the drought will have a large impact on the 2012 soybean crop also. Total seasonal water usage is similar for soybean and corn crops. Both crops need about 20 inches of total moisture to achieve a normal yield level. The soybean crop is just a little more flexible when it receives that rain. Since the soybean crop is an indeterminate crop – meaning that it flowers, sets pods and fills pods over roughly an eight week time period – it can adjust to seasonal variations in rainfall, soil moisture and air temperatures. I think that most farmers, grain traders and agronomists know that – since we have all experienced excellent soybean yields when the summer was dry and late season rainfall rescued the soybean crop.

Spider mites were a pest that we experienced on a broad scale this summer. There may be some parallels with this pest with the soybean aphid. However, there are some major differences also. One of the major differences is the amount of control or the percent control we can expect from insecticide treatments. We have been used to achieving very high levels of initial control with insecticide application on soybean aphid. However, insecticide control on spider mites may be limited to 80% at best. Spider mites are located in the lower canopy and inhabit the underside of the leaf – making effective applications more difficult. The life cycle of the spider mite is another factor – since the spider has an egg to adult life cycle. Therefore the spider mite can protect itself – in effect - since the insecticide does not control eggs. Spider mites that emerge after the residual effect of the insecticide has dissipated can begin damaging the crop right away.

Insecticide selection was another big difference in spider mite management. We are all used to a wide selection of insecticides that effectively manage soybean aphids. However, spider mites have to be managed with chlorpyrifos (Lorsban and others) or bifenthrin (Capture and others).

Another problem that was observed in 2012 was some fields where the soybeans declined since the general rains that were received on July 28. These areas appear to be some combination of iron deficiency chlorosis/Sudden Death Syndrome/potassium deficiency/soybean cyst nematode. There are also some definite soybean variety differences as well as some definite soil type differences.

No one is completely confident on an explanation of this syndrome, but it will definitely affect yields in some area fields. It also complicated because sometimes it overlapped with moisture stress areas in some fields.

Daren Mueller and the Plant Diagnostic Clinic at Iowa State University analyzed some samples from some of the fields where we found this syndrome. They found top dieback to be the specific problem for the samples I submitted. Daren has found that SDS and charcoal rot also contributed to these yellow areas in other soybean samples.

There is no specific answer to solve this problem in future years. However, we would recommend to soil test these areas for potassium levels. Also, these areas should be checked for soybean cyst nematode levels. And lastly, look for varieties that have resistance to SCN and SDS for adjacent fields in 2013.

Pro-Ag 2012 Outlook Forums Offered in Sheldon and Cherokee on November 2; LeMars and Spencer on November 6
By Melissa O’Rourke, ISU Extension and Outreach Farm & Agribusiness Management Specialist

As harvest comes to a close, producers, ag lenders and suppliers turn their attention to planning ahead for the 2013 production cycle.

Melissa O’Rourke, Farm & Agribusiness Management Specialist for Iowa State University Extension in northwest Iowa wants area ag professionals to know that help is on the way.
Dr. Hart projects that “2013 will be a profitable year for crop producers as prices are projected to remain above production costs.” Hart will explore the factors shaping the markets and the keys to watch as farmers market their grain over the coming year.

Prior to joining the Department of Economics at Iowa State University, Chad Hart was the U.S. Policy and Insurance Analyst with the Food and Agricultural Policy Research Institute (FAPRI) and a Scientist with the Center for Agricultural and Rural Development (CARD) at Iowa State University. His projections and outlooks are sought after by agriculture professionals across Iowa and the nation.

The forums last 2 ½ hours and the cost to attend at any of the four locations is $20 per person.

Advance registration is recommended by calling the ISU Extension and Outreach office in Sioux, Plymouth, Clay or Cherokee counties.

**PRO-AG OUTLOOK FORUMS – LOCATIONS, DATES, CONTACT PHONE:**

**Friday, November 2**

► **Shelton—Sioux County**
9am: Northwest Iowa Comm College
Call 712-737-4230 to register

► **Cherokee—Cherokee County**
1:15pm: Western Iowa Tech CC
Call 712-225-6196 to register

**Tuesday, November 6**

► **LeMars—Plymouth County**
9:00pm: American Bank meeting room
Call 712-546-7835 to register

► **Spencer—Clay County**
1:15pm: Spencer Community Theater
Call 712-262-2264 to register

At all four locations, the program features a keynote presentation by Dr. Chad Hart from the department of agricultural economics at Iowa State University. Although uncertainty abounds in the crop markets with questions about crop size and global demand,