Farm Views

Crop Protection Clinic Jan. 10

Lancaster County Extension will host a Crop Protection Clinic on Thursday, Jan. 10, 2003. Registration begins at 8 a.m. with sessions continuing from 9 a.m. to 4 p.m.

This very popular clinic offers many topics of interest to crop producers and agribusiness professionals alike. This year's topics are:

- New Herbicides for 2003
- Herbicide Carryover and Dry Weather
- Herbicide Drift Injury to Crops
- Microbiological Soil Management
- Grasshoppers
- Alfalfa Insects
- Soybean Cyst Nematodes
- Mycotoxins in Food and Feed-grade Corn.

Commercial Pesticide Applicators will be able to renew their General Standards and Ag Plant certification by attending the entire workshop session.

An evaluation survey following last year's clinic indicates the value of the clinic to Nebraska farms. In 2002, 155 people attended the clinic in Lincoln. This was a split of roughly 50/50 between producers and agribusiness or agency personnel. We received 84 evaluations showing 756,553 crop acres grown, managed or scouted. Twenty-six participants responded to the question "What would you estimate the value of this program to you (in dollars per acre)?" The response was an average value of $6.15 per acre. These 26 respondents reported 698,990 acres grown, managed or scouted—resulting in an **estimated benefit of $4.3 million** to the private individual or to the people they serve as an ag professional.

A $25 registration fee includes proceedings, publications, refreshments and the noon meal. For more information, call Tom Dorn at 441-7180. (TD)

Feeding Value of Drought-Stricken Corn Grain for Swine Not Affected

Despite the drastic reductions in grain yield due to the drought, the feeding value of drought-stricken corn for swine may not be affected.

Nebraska's 2002 growing conditions were not favorable for optimum corn production. Inadequate moisture and high temperatures reduced corn yields. But University of Kentucky research found drought had no effect on test weight, metabolizable energy or pig growth performance.

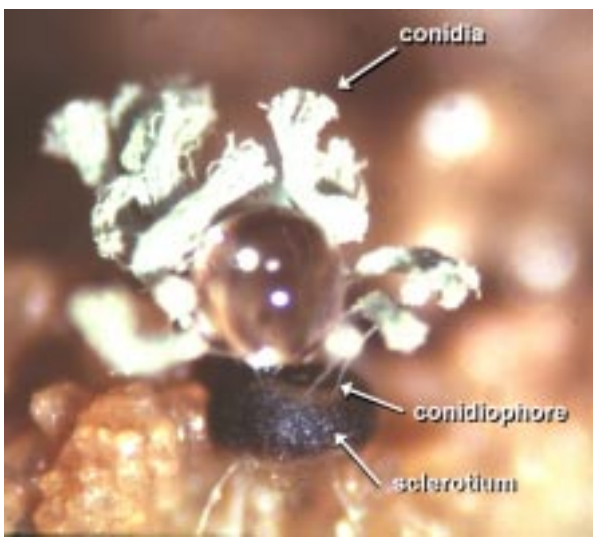
In some instances, drought stress during grain fill can reduce grain test weight. However, corn research suggests there is a poor relationship between test weight and corn's nutritional value. Pig growth rate is seldom affected by corn test weight as long as the test weight is not reduced by more than 30 percent. If the low test weight corn has less metabolizable energy, pigs will compensate by increasing feed consumption, resulting in poorer feed efficiency. Fat can be added to diets containing low test weight corn to offset a possible reduction in feed conversion efficiency.

Corn weighing between 40-56 pounds per bushel has the same feeding value for growing-finishing swine when compared on an equal moisture basis. When test weight drops below 40 pounds per bushel, growth rate and feed efficiency may decrease by 5 percent to 10 percent.

see CORN FOR SWINE on page 5

Aflatoxin in Corn — What can be Done?

Some southeast Nebraska counties are finding corn grown under drought conditions in 2002 has tested positive for Aflatoxin and other mycotoxins. Mycotoxins are compounds produced by certain molds that can be toxic to farm animals, wildlife and humans. Usually these molds become associated with kernels in the field; however, under certain conditions of temperature, relative humidity and grain moisture, they can grow within the colonized kernel and even spread to adjacent kernels during transport and storage.



Condiia (spores) production by the grain mold fungus Aspergillus flavus *which produces the toxin aflatoxin.*

Animals can tolerate minute levels of mycotoxins with no adverse effects, but above certain threshold levels, symptoms can appear. See Table 1 for the FDA tolerance levels for several mycotoxins. This article will discuss how a producer can deal with Alfatoxin levels that are too high.

According to the Nebraska Department of Agriculture, corn with over 1,000 parts per billion (ppb) of Aflatoxin must be destroyed. (As of the third week in October, no corn sampled in Nebraska has even come close to such a high level.) The Nebraska Department of Agriculture does allow grain with high levels of Aflatoxin (but less than 1,000 ppb) to be blended with corn testing lower or negative for Aflatoxin — provided the blended product is intended as animal feed to be fed to finishing beef cattle or to finishing swine weighing more than 100 pounds. The following requirements must be met. The grain producer or user must resample and test after blending to certify the blend does not exceed 300 ppb for finishing cattle or 200 ppb for finishing swine over 100 pounds body weight. The test results must be kept for no less than a year.

For grain sold in intrastate commerce, the shipper/seller must test the final blend to make certain it met the 200 or 300 ppb Aflatoxin requirement. The seller would have to provide an invoice stating the level of aflatoxin in the finished product. The invoice would need to designate the species intended to be fed and have some assurance the buyer is aware of the level and will use according to its intended purpose.

For interstate commerce, blending is also allowed provided the feed is intended for finishing beef cattle only. The same testing requirements must be met as above, but the maximum aflatoxin level cannot exceed 200 ppb. As above, an invoice must accompany the grain stating the aflatoxin level, and the seller must have some assurance the buyer is aware of the contamination level and will use the grain for its intended purpose.

Table I. FDA tolerance levels for some mycotoxins.

Mycotoxin	FDA Tolerance	Target
aflatoxin	0.5 ppb (parts/billion)	milk
	20 ppb	dairy
	100 ppb	mature breeding cattle, swine, and poultry
	200 ppb	finishing swine
	300 ppb	finishing beef
fumonisin	5 ppm (parts/million)	horses
	10 ppm	swine
	50 ppm	cattle
vomitoxin	1 ppm	human
	5 ppm	swine
	10 ppm	cattle, chickens

How to Mix Blends to Meet Criteria

A Pierson square is a method used in many agricultural applications where two ingredients with different levels of a physical or chemical property are blended together in precise proportions so the resulting mixture will have a predetermined amount of the property. This method can be used to create grain mixtures with desired protein content, moisture content or other properties. Aflatoxin level is one such property for which a blended product can be created.

Procedure for using a Pierson Square:

1. Draw a square with diagonal lines connecting the corners.
2. Place the aflatoxin test results of the two corn sources in the upper and lower left-hand corners, respectively.
3. Place the desired value of the blend at the intersection of the diagonal lines in the center of the square.
4. Subtract diagonally across the square. That is, subtract the upper left-hand value from the desired value (center value) and report the absolute value of the difference in the lower right corner. Subtract the lower left-hand value from the desired value and report the absolute value of the difference in the upper right corner.
5. Add the right-hand values to find a total.
6. Divide each right-hand value by the total and multiply by 100 to covert from decimal to percent. The result in the upper-right represents the percentage needed of the ingredient in the upper left-hand corner. The result in lower-right represents the percentage needed of the ingredient in the lower left-hand corner.

Example: A hog producer has two sources of corn. Initial screening tests for Aflatoxin came back positive in both sources. Subsequent quantitative analysis shows corn source A has an Aflatoxin level of 350 ppb while corn source B has an Aflatoxin level of only 10 ppb. The producer is starting a group of feeder pigs weighing 120 pounds. From Table 1 (see box), the FDA tolerance level of Aflatoxin for feeding swine more than 100 pounds body weight is 200 ppb. Allowing for a margin of safety, we will set a target of 165 ppb Aflatoxin in the blend. How many pounds of each corn source should the farmer blend to make 1,000 bushels (56,000 pounds) of corn with 165 ppb of Aflatoxin?

See Figure 1 — Example Using a Pierson Square. Answer: The final blend should be 45.6% corn source A and 54.4% corn source B. Or 56,000 x 0.456 =25,536 pounds corn source A and 56,000 x 0.544 = 30,464 pounds corn source B.

For more information see NebGuide (G00-1408) "Grain Molds and Mycotoxins in Corn" online at www.ianr.unl.edu/pubs/plantdisease/g1408.htm.

Figure 1. Example Using a Pierson Square.