

November, 1990, the following companies manufactured test kits: Environmental Diagnostic Systems Corp., P.O. Box 908, 2990 Anthony Road, Burlington, NC 27215, (919-226-6311 or 800-334-1116).

IDEXX- 100 Fore Street, Portland, ME 04101, (207-774-4384 or 800-548-6733).

International Diagnostic System Corp.- P.O. Box 799, St. Joseph, MI 49085, (616-983-3122).

Neogen Corp.- 620 Leshler Place, Lansing, MI 48912 (517-372-9200).

Oxoid U.S.A. Inc.- 9017 Red Branch Road, Columbia, MD 21045, (301-997-2216 or 800-638-7638).

Rialdon Labs, Inc.- 3609 E. 29th Street, Bryan, TX 77802 (409-846-6202 or 800-888-5688).

Romer Labs, Inc.- P.O. Box 2095, Washington, MO 63090 (314-239-3009).

Transia- 8, rue Saint-Jeau-de Dien, 69007 Lyon France 72-73-03-81.

VICAM- 29 Mystic Avenue, Somerville, MA 02145, (617-623-0030 or 800-338-4381).

Two mycotoxins that will likely contaminate corn this fall are zearalenone and vomitoxin (deoxynivalenol). Zearalenone can lead to reproductive problems, whereas

vomitoxin causes feed refusal.

Zearalenone is an estrogen-like compound. One ppm in the feed enlarges the vulva and uterus, even in young gilts. Sows may fail to cycle, or show pseudo pregnancy when consuming feed containing 3 ppm of zearalenone. Higher levels may lead to abortion.

Levels as low as 2 ppm reduce testicular growth and total sperm numbers in boars. When levels reach 40 ppm of zearalenone, testosterone in the blood may drop and prevent the boar from mating successfully.

Zearalenone also reportedly irritates the lining of the rectum. This leads to straining and eventual prolapse or "blow-out" of the rectum.

Vomitoxin is also common in damp corn, and especially in scabby wheat. The most obvious effect of vomitoxin is a dramatic reduction in feed intake. Levels as low as 2.5 ppm impair feed intake and weight gains. Levels of 20 ppm can cause vomiting in young pigs.

A positive mycotoxin test on your corn is clear proof that you have a problem. A negative test only means that there was no mycotoxin present in the sample you checked.

3. Diluting the corn with uncontaminated grain may help. But keep in mind, that if the grain has a lot of mycotoxin present, diluting

with clean grain may be futile.

4. One feed additive, Nova-Sil, has been effective in reducing the harmful effects of aflatoxin, a mycotoxin commonly occurring under hot, dry conditions. Nova-Sil is an aluminosilicate that was developed as a flow agent to reduce caking in feed. It also has the effect of absorbing aflatoxin when added at the rate of 10 pounds per ton. The cost is about \$.25 per pound. In experiments with young pigs, it almost completely reversed the effects of aflatoxin. Unfortunately, it provides only a marginal response against vomitoxin and zearalenone.

5. If you can feed the grain to cattle, the losses will probably be minimized since ruminants are generally less affected by mycotoxins compared to pigs.

6. What about putting corn in the silo? Hundreds of studies have shown that pigs perform well on good quality high moisture corn. But the silo will not correct a mold problem that started in the field.

7. What about roasting? It will probably destroy the mold, but may not affect the mycotoxins, which are generally heat stable.

Summary

1. This year's corn crop is high in quantity, but low in quality. The moisture content has been so high for so long that molds (and the mycotoxins they produce) seem to

be contaminating many fields.

2. Watch your pigs closely or consider testing the corn to determine whether you've got a problem. If mycotoxins are present, at the very least, avoid feeding the corn to the breeding herd.

3. The feed additive, Nova-Sil, is relatively economical and is

probably worth a try. But studies have shown it is not too effective against Fusarium molds and mycotoxins that are common under the present conditions.

For more information, contact the Penn State Cooperative Extension Office (757-9657).

National Angus Show Offers Merit Awards

ST. JOSEPH, Mo. — If you are a junior member of the American Angus Association and have been an active participant or exhibitor at a previous Atlantic National Angus Show, you are eligible to apply for an Atlantic National Merit Award. The awards are in the form of scholarships to be used towards higher education.

Students must be 25 or younger as of January 1, 1993 and must be a high school graduate or senior. The student must be enrolled or

must plan to enroll in a college, vocational, or trade school, or other institute of higher education.

Applicants must be available for a personal interview during the Atlantic National Angus Show in Baltimore, Md., on Memorial Day weekend.

For an application and complete information, contact Lee V. Leak, 17800 Trundle Rd., Dickerson, MD 20842. Completed applications are due May 11, 1993.

Corn

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moldy grain in separate bins. This practice permits special handling and will give you time to evaluate alternative options.

The best management practices do not always guarantee success. Low quality or moldy corn still can cause a variety of problems during storage. Reports of grain heating in the center of bins have begun to surface. This heating can lead to rapid mold growth, or "hot spots," prone to severe spoilage and mycotoxin development.

Heating and eventual molding of grain thought sufficiently dried can still occur when large outside temperature swings affect the air movement within the bin. For example, when inside air next to the outside bin wall cools, it moves downward. The warmer air is then forced upward in the center of the bin. As this air reaches the surface it cools and moisture condenses within the top layer of grain — increasing the potential for mold development.

Grain should be monitored regularly to minimize the risk of heating in the grain bin. The most accurate monitoring technique is to auger out small quantities of grain and physically check for heating in the center of the bin, or to look for condensation within the top layer of grain. Heat and/or moisture buildup can be reduced by installing a low-volume fan at the top of a perforated duct in the center of the bin which will pull air down through the bin, equalize the temperature and prevent condensation. The most prudent course of action may be to market or feed the grain as soon as possible to prevent further losses in quality.

Grain Testing Recommended

Proper grain storage will generally minimize further problems but will not reduce the level of toxins already produced. If you suspect your grain may have a problem with mycotoxins, or are concerned about low quality moldy corn, have the grain checked by a laboratory such as the BAI Diagnostic Lab in Somerdale, Pa. (717-787-3400). Testing is not a guarantee of safe grain. Mycotoxin assays can be expensive and are only as reliable as the sample from which they are taken.

A more reliable test for mycotoxin contamination is to feed moldy grain to a few test animals. Generally, if the level is high enough to cause serious risk, the symptoms will be observed in these test animals. Furthermore, additional precautions should be taken when feeding highly susceptible animals like horses, poultry, swine and young or gestating animals.

Preventing future problems with low quality or moldy corn begins with early planning and a thorough review of your agronomic practices. Choose hybrids with maturity ratings compatible to your growing conditions. Early planting aimed at timely harvest can overcome many harvest concerns. When possible, rotate out of corn or small grains to reduce the amount of disease spores present in the field.

Where rotation is not feasible, tillage should be used to incorporate crop residue and help reduce disease pressure. Minimize plant stresses by matching population with hybrid recommendations. Maintain soil PH and fertility at optimum levels and control weeds as well as insect pests as needed. Healthy plant stands are your best defense against low quality moldy corn.

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