

MANAGING MOLDY CORN FOR LIVESTOCK & POULTRY FEEDING

by Dustin Dean, Ph.D., Senior Nutritionist

As the harvest progresses, reports of *Diplodia* corn ear rot disease are coming in from parts of the Corn Belt which has led to questions regarding how to best store and feed moldy corn. Let's take a moment to review the major types of corn ear rot, their association with mycotoxins and considerations for storing and feeding corn with quality concerns.

There are five major types of corn ear rot that are the most common in the U.S. and they are classified by the types of mold involved in causing the disease. These include *Aspergillus*, *Penicillium*, *Gibberella*, *Fusarium* and *Diplodia*. *Aspergillus* ear rot is well known for its ability to produce aflatoxins and is a common problem in southern U.S. growing regions but can also show up in other regions and is of particular concern in areas where corn experienced drought stress. *Gibberella* ear rot can produce deoxynivalenol (vomitoxin) and zearalenone and is most common in the northern regions that may experience cool wet weather prior to harvest. *Fusarium* molds may produce fumonisin toxins and *Penicillium* may produce ochratoxin A amongst others. If there can be any good news related to corn ear rot this year, it may be that a majority of the problems being reported thus far in the Midwest are issues with *Diplodia* which is not associated with mycotoxin production in the U.S. *Diplodia* is primarily a concern in terms of storage stability and causes a reduction in test weight that may reduce the energy value of the corn due to reduced starch and oil concentrations relative to protein, fiber and minerals.

Keep in mind that it is possible for corn fields to be co-infected with multiple molds which can complicate risks associated with mycotoxins. The weather conditions for 2016 seem to favor *Diplodia* and *Gibberella* as the most common problems in the Midwest while the south has primarily had reports of *Aspergillus* molds and aflatoxin. Mycotoxin testing is recommended for corn with known

mold concerns (even if *Diplodia* is expected) to best understand its feeding value and manage its risk to livestock effectively. Mycotoxins are never equally distributed in a lot of corn due to the sporadic occurrence of molds in a field so proper sampling techniques are essential to characterize risks.

Below is a list of considerations for managing moldy corn to minimize its impact in livestock feeding applications:

- Segregate high quality corn for feeding breeding and young animals
- Harvest mold infested fields early and dry to $\leq 14\%$ moisture immediately
- Adjust combine to eliminate fines and damaged kernels
- If storing corn from mold infested fields, segregate it and use it as quickly as possible
- Screen grain prior to storage to remove dust and foreign material
- Storage stability is best at less than 30°F so winter storage only is advisable
- If storage is unavoidable during warmer temperatures, consider applying a mold inhibitor

AT A GLANCE

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- Consider mycotoxin testing grain with known quality issues to best understand its feeding risk
- Consider blending moldy corn with high quality corn when making feed to minimize risks
- Utilize a binding agent in feed suitable for the mycotoxins present

If you have questions on grain quality management or toxin mitigation, please contact your NutriQuest representative.

The Purdue Extension Service provides an excellent series of free publications on corn ear rot diseases with tips for identifying them as well as information on sampling for mycotoxin analysis at <https://mdc.itap.purdue.edu/subcategory.asp?subCatID=306&CatID=12>.



Figure 1. Corn harvested in central Minnesota in 2016 with sprouting, *Diplodia* ear rot and potentially other molds present.



NUTRIQUEST OPENS STATE OF THE ART POULTRY RESEARCH CENTER

by Paige Grabe, Marketing Manager

NutriQuest has partnered with Southern Poultry Research Group, Inc. to open a state of the art poultry research center in Athens, Georgia. The NutriQuest Poultry Research Center is a part of a long-term research agreement with Southern Poultry Research Group, owned and operated by Drs. Charles Hofacre and Christa Hofacre. In addition, Southern Poultry Research Group, Inc. has a strong collaborative relationship with Dr. Gregory Mathis, owner and operator of Southern Poultry Research, Inc. "We are fortunate to partner with world renowned veterinarian and researcher, Dr. Charles Hofacre, to provide research that delivers innovative solutions that provide a consistent and reliable result", said Dr. Ken Purser, Vice President of Sales and Marketing at NutriQuest. The new research center will accommodate all aspects of broiler research and includes 120 floor pens that will house up to 3,000 broilers at a time. According to Dr. Chet Wiernuz, Director of Poultry Technology at NutriQuest, "The new facility was designed specifically for research and will provide NutriQuest with an industry-leading dedicated broiler research capability. Several studies will be conducted annually focusing on feed and water delivered solutions to improve health and performance." "Our investment in poultry research both strengthens the NutriQuest product offering and shows our continued passion and dedication to research and development of solutions to help producers optimize performance and profitability in everyday production", stated Steve Weiss, President of NutriQuest.

NUTRIQUEST WELCOMES NEW TEAM MEMBERS



DUSTIN DEAN, PH.D.

has joined NutriQuest as a Senior Swine Nutritionist. He will be responsible for assisting clients in enhancing and maintaining nutrition programs for their swine herds with the goal of helping them

accomplish their production objectives. Prior to joining NutriQuest, Dr. Dean served as a Swine Technical Nutritionist for two leading nutrition companies and brings with him over 10 years of industry experience. Dean received his Ph.D. in swine nutrition from Louisiana State University. He currently resides in Missouri with his wife.



DENNIS NUETZMAN

has joined NutriQuest as a Consulting CPO in our NutriQuest Business Solutions division. Neutzman has served in several financial leadership roles in supporting the growth of Murphy

Farms from a small family-owned livestock production operation to become the largest component of Smithfield Foods' integrated pork production business. In addition to his financial and operational knowledge of livestock production, he also has significant experience in the acquisition and divestiture of swine production systems.



DAN SCHIMEK

has joined NutriQuest as Director of Dairy Technology and will lead the development of NutriQuest dairy technologies. Schimek will focus on developing products and technologies

to serve the U.S. and international dairy markets. Prior to joining NutriQuest, Schimek most recently served as Manager of Dairy Nutrition and Technical Service for Hubbard Feeds. Schimek graduated from North Dakota State University with an M.S. in ruminant nutrition. He currently resides in Mankato, MN with his wife and four children.

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