

Agri *focus*

ADDRESSING THE NEEDS OF AGRICULTURAL PRODUCERS AND
PLANTING THE SEEDS FOR A SECURE FUTURE.

CROP SPOTLIGHT: THE SUMMER OF SCAB

Greg Zimmerman, Feed and Forage Service Manager

This was an unusual year for grain sellers. Those growing wheat or barley for grain faced an unexpected obstacle when trying to sell their crop this summer: vomitoxin. The surge in positive tests has everyone feeling uneasy and has led to many growers' yields being rejected. The main culprit for the outbreak this year was the scab fungus, enabled by the above average rainfall during the spring season.

So far this summer, we have tested 20 grain samples for the presence of vomitoxin, with 15 coming back positive. That means roughly 75% of the grain this year is contaminated. The levels we're seeing are also important to keep in mind. Of the 15 positive tests, the average result was 6.2 ppm. At these levels, risk is posed to dairy cattle for feed refusal and a decrease in milk production. Hogs are the most sensitive to the toxin with effects being noticed at levels as low as 5 ppm in a major ration ingredient (not to exceed 20 percent of ration with finished feed = 1 ppm).

What can be done?

The contaminated ingredients could still be used in rations in lower quantities, but the difference will need to be made up somehow, at the expense of the owner. With caution, the feed can be used for poultry. Poultry can tolerate higher quantities of vomitoxin in their diet. However, it is important that the concentration does not exceed 10 ppm (not to exceed 50 percent of diet, with finished feed = 5 ppm).

This season, like every other, has produced challenges for everyone in the agriculture industry. And until we learn how to make the clouds do our bidding, it will continue to frustrate those who live off the soil. As long as we use this year as a teaching tool in order to prevent and contain similar situations in the future, we will be able to find some success in this season, after all.

Resource:

Wise, Kiersten, and Charles Woloshuk. "Plant Diseases: Dealing with DON in Wheat." *Pest & Crop* 12 (2009): 5-6. Purdue Cooperative Extension Service, 19 June 2009. Web. 24 Sept. 2009. <<http://extension.entm.purdue.edu/pestcrop/2009/issue12/PandC12.pdf>>.



WHAT'S NEW:

FALL 2009: Agri Analysis, Inc has launched a brand new website! Visit us at www.agrianalysis.com!

TECHNOLOGY SPOTLIGHT: New Website Overview

Jeff Foster, Owner/CFO

This fall, Agri Analysis has launched a brand new website! The Agri Analysis Inc. public web site (agrianalysis.com) is a dynamic interactive medium that enables our current and potential customers a unique system to exchange information.

As a public information medium, the Web Site offers a diversified information area on the Internet for Agricultural oriented individuals and businesses. The web site also serves as a public information source that promotes Agri Analysis Inc. as the leader in Agricultural Testing business.

The main areas of the web site include a General Company profile, our Services, a Resource section, a Terminology area, our Pick-up Routes, and an interactive customer report retrieval login area. Customers can request supplies online, contact their sales representative, request a fee schedule and join our quarterly newsletter mailing list. Furthermore, customers can print off sample submittal forms directly from our website. We hope that you will find our website easy to navigate!

Customer Report Storage & Retrieval Online:

The report retrieval customer login area provides the ability for you to select reported test results via the Company Web site. Our objective is to have the vast majority of our broad diversified services available via a simple login procedure and download.

The interactive customer login area is an exceptional resource for Agri Analysis Inc. and our customers to communicate on a more personalized level. A unique user name and password is first assigned to each customer. Once assigned, your results or reports and other time sensitive information can be transmitted in real time.

Try it out!

To test our interactive customer login area, simply navigate your Internet browser to (<http://www.agrianalysis.com>). Located on the right side of our Home page is our Customer Tools section. Enter your Customer Code in the selection box and click on "login". The Web site will prompt you to enter your Username and Password. Login with the username of "demo", with a password of "demo" and click on the "OK" button. This will take you to the Customer Tools area where a list of reports is displayed. Use the page up or page down keys to scroll through the reports listed. Clicking on one of these files will open the file for viewing on your local computer screen. At this point you can print or save the file to your local computer. Right clicking on the file name displays a menu. From here you can select "Save Target as..." and save the file to your local computer. You can also click on the Search link and a dialog box will open for you to enter a search value. Enter a growers or farmer name in the box and select Search and the file list will be limited to the reports that match your search criteria. Clicking on one of these files will open the file for viewing on your local computer screen. As a reminder, Customer code, Username and password are case sensitive, so call us if you are having a problem

Agri Analysis's standard report file format can be viewed with Adobe Acrobat PDF reader.

Adobe® Portable Document Format (PDF) is the industry standard for electronic document distribution worldwide. Adobe PDF is a universal file format that preserves all the fonts, formatting, graphics, and color of any source document, regardless of the application and platform used to create it. Adobe PDF files are compact and can be shared, viewed, navigated, and printed exactly as intended by anyone with free Adobe Acrobat® Reader® software. To find out more about Adobe, visit their web site at www.adobe.com. From here you can download their free software that allows you as our customer to view all our reports.

Agri Analysis's aspiration for the past 25 years has been that customer service comes first.

This philosophy has earned Agri Analysis the reputation as one of the top Agricultural Testing facilities in the Northeast United States. If you would like to setup a login and password, please contact Jeff Foster.

AGRONOMY SPOTLIGHT: Soil, Manure, & Water Analysis Do's & Dont's

Lisa Dreibelbis, Agronomy Service Manager

Fall is traditionally the predominant time of the year for soil and manure sampling. A soil test result is only as good as the sample that is collected. Proper sampling technique is imperative to obtaining accurate test results. It is also very important to correctly complete the soil test request form. Send the completed form and the soil to the lab in a prompt manner. Hoarding large “batches” of soil samples can cause a backlog in the processing time of the soil samples. See Table 1.1 on Page 4 for Guidelines for taking soil samples.

The soil testing procedures used in the laboratory at Agri Analysis Inc. are as follows:

<u>Test</u>	<u>Method</u>
Soil pH	Water
Acidity	Mehlich Buffer
Calcium (Ca)	Mehlich 3
Magnesium (Mg)	Mehlich 3
Potassium (K)	Mehlich 3
Phosphorus	Mehlich 3
Organic Matter	Loss on Ignition

The above information is useful and important when comparing results from different laboratories. In order to compare soil analysis results make sure the reporting units and the test method are the same between both the labs. Soil nutrient levels are reported in elemental ppm as well as elemental lbs/acre. Phosphate (P₂O₅), Potash (K₂O) and Magnesium oxide (MgO) are also reported in lbs/acre.

These procedures were developed and work best for the soils of the northeast. Most soil testing labs in PA use the above recommended tests. PA Nutrient Management law requires that the above test methods are used. Agri Analysis is also approved by the states of MD and VA for testing required for nutrient management plan development. The agronomy department also participates in the North American Proficiency Testing Program. NAPT is a voluntary quality control program offered by the Soil Science Society of America.

Agri Analysis offers a wide variety of testing packages for both manure water and soil analysis. Visit www.agrianalysis.com to see the complete list of test packages. We supply testing kits at no charge and can also provide UPS return address labels for a discounted fee. Request the supplies directly from the website, or contact Jill (info@agrianalysis.com) to receive the free supplies you require to complete your testing. Please note that water samples are only accepted from Monday – Thursday. When submitting manure and water samples follow the directions found on the back side of the request form.

Continued on page 4...

AGRONOMY SPOTLIGHT

continued...

Table 1.1 Soil Sample Guidelines (Source: PA Agronomy Guide 2009-2010)

A. The best sampling time is summer or fall. To avoid the “fall rush” do not wait until the last minute to collect the samples
B. Sample between the rows, avoid any spots that are not representative of the field. Avoid old fence rows and dead furrows.
C. In cultivated fields sample to plow depth, for no-till take 2 samples: one at a 6inch depth for lime and fertilizer recommendations and the second at a 2 inch depth to monitor surface acidity. Sample permanent pastures at a 3-4 inch depth
D. Take core samples from at least 15 – 20 random spots to collect a representative sample. One sample should not represent more than 10 acres.
E. Take separate samples from problem areas if possible
F. Collect the samples with a clean stainless steel probe and place in a clean container. Mix the core samples and allow to air dry, remove all roots and stones.
G. Fill the soil sample bag to the line (do not overfill). . Label the bag with your name or Company Code, Field Id and Grower name.
H. Complete the soil test request form. Place the form in an envelope and package with the corresponding samples in a bag or box. Please do not mix more than one grower per bag. If multiple growers are placed in a box please package neatly. If lime and fertilizer recommendations are required the first and last crop must be listed on the request form

Thank you in advance for your business and for a successful fall! Your willingness to follow our guidelines allows us to provide you with the prompt accurate service you deserve.

The Importance of Fermentation & What It Can Tell Us

George W. Mitchell, President / Agronomist

Storage & Forage Quality ^{1, 2}:

When storing forages this fall, it is important to keep in mind the following factors: initial and annual costs to store forage, herd size, optimizing forage quality (harvested and stored) and the feed delivery system. It is important that forage storage systems maintain nutrient quality. In order to ensure successful forage storage, evaluate the cost per ton of stored forage based on your herd size and future herd size plans. For example, if a herd size is less than 100 cows plus young stock, large storage structures would not be economically feasible. On the other hand, upright silos, bags, and wrapped bales would be good choices. Wetter forages will lower the loss of nutrients in the field, however excessive moisture (i.e.; hay silage over 60 percent moisture and corn silage over 70 percent moisture) can result in an undesirable fermentation. One way to improve fermentation is by using research proven silage inoculants. Inoculants can also lower dry matter loss, increase digestibility, and optimize desirable Volatile Fatty Acid (VFA) pattern (over 60 percent lactic acid of the total VFA produced). Testing silage for fermentation characteristics can determine if quality silage has been preserved.

Baled Silage ³:

Balage techniques offer the potential for storing high-quality forages without prolonged periods of field drying. This system works by wilting forages in the field to 45 to 65 percent moisture, baled in large round packages and then covered in plastic to limit air access.

In regards to fermentation, one of the major factors affecting the process is the moisture content of the forage at baling. For the most part, the optimum moisture content for large, round bale silage is about 55 percent. Baling forages at moisture contents greater than 70 percent is not recommended. Wayne Coblenz, professor at the University of Arkansas, explains the negative impact of high moisture levels:

Higher moisture levels favor undesirable (clostridia) fermentations that produce silages that are less acidic and have high concentrations of butyric acid and ammonia nitrogen that break down protein. Silages dominated by this type of fermentation have a strong, rancid odor that smells like rancid butter and are poorly consumed by cattle.

Continued on Page 5...

The Importance of Fermentation *continued...*

Field workers in Wisconsin reported that wet haylage can contain 0.5 to 1.5 percent butyric acid on a dry matter basis. Butyric acid is an undesirable volatile fatty acid produced during poor silage fermentation. Michael Hutgens of Illini DairyNet explains the impact of butyric acid:

The butyric acid is consumed by the cow and converted to Beta Hydroxybutyric Acid (BHBA) leading to ketosis and metabolic disorders. If cows consume over 50 grams of the butyric acid (for example, 22 pounds of haylage dry matter containing 0.5 percent butyric acid on a dry matter basis would provide 50 grams of butyric acid), animals are at risk. Clostridium organisms can exist when unfavorable fermentation patterns (pH over 5.0) and higher butyric acid levels occur.

Forages that are ensiled too dry (greater than 50% dry matter) or ensiled during cold weather often have a restricted fermentation. This type of fermentation often leads to higher dry matter losses, and is more likely to produce secondary heats. Yeasts are responsible for the majority of these secondary heats which convert sugar to alcohol, raising the silage pH. Usually the pH will raise to 5.0 and higher, indicating poor fermentation occurred

A fermentation profile, as outlined below in Table 1, is also a “report card” on how the producer handles the silage making process. The fermentation end products are a summary of all conditions that affected your silage making. This includes plant maturity, plant moisture, sugar content, the activity of bacteria, additive use, packing and bunk face management.

Table 1: Recommended Fermentation Profile for Ensiled Feeds³

Measurement	Legume/Grass Mixture			Corn Silage	H. M. Corn
	Less than 35	35 to 50	Greater than 50		
Dry Matter (%)	Less than 35	35 to 50	Greater than 50	35 to 50	70 to 75
pH	4.0 to 4.3	4.3 to 4.7	4.7 to 5.0	3.8 to 4.2	4.0 to 4.5
Lactic Acid (%)	6.0 to 8.0	4.0 to 6.0	2.0 to 4.0	5.0 to 10.0	1.0 to 2.0
Acetic Acid (%)	1.0 to 3.0	0.5 to 2.5	0.5 to 2.0	1.0 to 3.0	Less than 0.5
Propionic Acid (%)	Less than 0.5	Less than 0.25	Less than 0.10	Less than 0.10	Less than 0.10
Butyric Acid (%)	Less than 0.5	Less than 0.25	Less than 0.10	Less than 0.10	Less than 0.10
Ethanol (% DM)	Less than 1.0	Less than 1.0	Less than 0.5	Less than 3.0	Less than 2.0
Ammonia (% DM)	Less than 15.0	Less than 12.0	Less than 10.0	Less than 8.0	Less than 10.0
Lactic/Acetic	Greater than 2.0	Greater than 2.5	Greater than 2.5	Greater than 3.0	Greater than 3.0
Lactic (% total)	Greater than 60	Greater than 70	Greater than 70	Greater than 70	Greater than 70

References:

- ¹ Shroeder, J.W. Dairy Connection. NDSU Extension Service: Vol . 11, Sept. 2001.
<<http://www.ag.ndsu.nodak.edu/aginfo/dairy/dairyext/Newsletters/Connections/dc11-3.pdf>>
- ² Hutgens, Michael. “Forage Storage Alternatives and Strategies.” *Illini DairyNet Papers*. University of Illinois.
<<http://www.livestocktrail.uiuc.edu/dairy/paperDisplay.cfm?ContentID=345>>
- ³ Coblenz, Wayne. “Baled Silage for Livestock.” *Agriculture and Natural Resources*. University of Arkansas.
http://www.uaex.edu/other_Areas/Publications/PDF/FSA-3051.pdf