

Regulatory Services News

Vol. 54, No. 3

Feed - Fertilizer - Milk - Seed - Seed Testing - Soil Testing

Fall 2010

Director's Digest

During this article, I will cover some items of interest to the feed industry. Several issues related to cleanliness, and potential pathogens in feed have received quite a bit of attention and publicity lately. No doubt you have heard of the recent recalls of pet foods in which *Salmonella sp.* have been identified, and FDA is doing more detailed inspections of feed manufacturing facilities. These items appear to follow public concerns for having food supplies that are safer for people and animals. Many citizens have expressed opinions to representatives and senators at both the state and federal levels that safe food is a high priority.

FDA now deals with all feed (animal and pet) as part of "food" so that all animal feeds, pet foods, and human foods come under the broad umbrella of FOOD. In making that distinction, FDA is placing greater emphasis on assessing feed businesses for cleanliness and housekeeping, and sampling more animal and pet feeds for pathogen presence. While we may argue that bacteria are frequently present in many animal feeds, health officials have traced some ailments back to handling feed products. In some cases, the tracking has revealed manufacturing or storing of ingredients and finished feeds are under unsightly conditions. Unfortunately, those conditions get our attention most frequently.

I know that Kentucky feed manufacturers focus on producing high quality feeds for livestock, pets and other animals. Our inspectors want to help firms maintain that high quality and will help by noting and discussing any conditions of less than desirable cleanliness and housekeeping on visits to feed manufacturers and dealers. They will emphasize keeping feed businesses clean as part of making a very positive impression on customers purchasing feed products.

An extensive sampling by our inspectors of the 2009 Kentucky grain crop found that several samples of barley, corn, oats and wheat or products from these grains (distillers grains, wheat middlings, corn germ meal, etc.) had detectable to high levels of mycotoxins. Conditions during the growing (drought and insect damage) and harvest seasons (wet, rainy, high humidity) may lead to more fungi that produce these mycotoxins. The Division will again sample the 2010 crop to summarize information for our feed manufacturers.

Bill Thom
Director and Interim Feed Regulatory Coordinator

What's inside...

Division Contact Information.....	2
Wheat Information 2010—Quality and Requirements to Sell.....	3
Fertilizer Stop Sale Release and Penalty Payments.....	4
Managing Nutrient Environmental Issues Related to Fertilizer.....	6
Announcements.....	7

UK
UNIVERSITY
OF KENTUCKY
College of Agriculture
Division of Regulatory Services

Division Contact Information

Director

Bill Thom
wthom@uky.edu

Feed Program

Bill Thom (interim)
wthom@uky.edu

Meagan Davis, Registration Specialist
meagan.davis@uky.edu

Kay Phillips, Staff Assistant
kphillip@uky.edu
FAX: 859-323-9931

Feed-Fertilizer Laboratory

Mel Bryant
mbryant@uky.edu

Fertilizer Program

Steve McMurry
smcmurry@uky.edu

June Crawford, Staff Assistant
june.crawford@uky.edu
FAX: 859-257-9478

Inspection Program

Jim True
jatr224@email.uky.edu

Inspection Staff

Mark Barrow
mcbarr2@uky.edu
270-542-6086

Dewey Coffey
dcoffey@uky.edu
606-787-1649

John Flood
jflood@uky.edu
270-522-5546

Brad Johnston
bjohnsto@uky.edu
270-524-3460

David Mason
dwmason@uky.edu
606-763-6806

Warren Pinkston
wwpink00@uky.edu
270-689-0916

Terry Prather
tprather@uky.edu
859-792-1409

Jesse Whitehouse
jwhiteh@uky.edu
859-257-2785

Lab Instrumentation

Sharon Webb
sfwebb2@uky.edu

Milk Program

Chris Thompson
Chris.Thompson@uky.edu

Bob Hickerson, Inspector
rhickers@uky.edu
606-759-0483

Cathy Buckingham, Staff Assistant
cbucking@uky.edu

Seed Regulatory Program

Cindy Finneseth (interim)
Cindy.Finneseth@uky.edu

Karen Nichol, Staff Assistant
kmnich4@uky.edu
FAX: 859-257-7351

Seed Testing Program

Cindy Finneseth
Cindy.Finneseth@uky.edu

Karen Nichol, Staff Assistant
kmnich4@uky.edu
FAX: 859-257-7351

Soil Testing Program

Frank Sikora
fsikora@uky.edu

Division Auditor

Henry Spencer
hspencer@uky.edu

Contact information for other staff members can be found online at www.rs.uky.edu.

Wheat Information for Fall 2010

Know what you plan to sell

With wheat in high demand this year and many individuals and firms offering what seed they have, here are a few guidelines to keep in mind as it is the seller's responsibility to know a cultivar's status:

PVPA (Plant Variety Protection Act) - protects the cultivar developer by giving legal control in regard to production and sales. These varieties cannot be sold for planting purposes unless the farmer or firm has permission from the variety owner. A list of PVPA varieties can be found on USDA's website: <http://www.ams.usda.gov> (Search "variety name list"). This is a lengthy document (371 pages), sorted by crop. Please check this list before offering wheat for sale to ensure no PVPA violations. Examples include Pioneer '25R32', '25R54' and '26R20'. Also note that some protected varieties may not appear on this list.

Title V — protection granted by the Federal Seed Act, this classification mandates that certain varieties can only be sold as a certified class of seed. Examples are 'Branson' and AgriPro 'W1104' wheat. Please note that after harvest certification cannot be granted as the necessary field inspections have not occurred. For more information about certification, contact Kentucky Seed Improvement Association (KSIA; 859-281-1109).

Patented Varieties—cannot be sold or saved. Sales are only permitted by the patent owner.

Unprotected Varieties—there are no limits on selling unprotected varieties. Examples include public varieties such as 'Cumberland' and 'Pembroke'.

Variety Statements—wheat sold in Kentucky must have a variety statement. 'Unknown' should be used when the individual or firm has no knowledge of the variety. If the varieties are known, these shall be listed on the tag or label.

Dealer License/Permit to Label Seed—any person selling seed in Kentucky must be licensed and anyone labeling seed must have a permit. Applications can be found online (<http://www.rs.uky.edu/seed/regulatory/permits.php>). Applications and fees should be sent to our office. Labelers are required to report seed sales by quarter, but an option for those selling a limited quantity of seed is to buy tags from our office, which precludes tonnage reporting and obtaining a permit to label.

Quality Concerns

Head scab of the small grains, especially wheat is a concern in Kentucky and many other states. In the lab, we have tested nearly 300 samples. Average germination of all seed lots is 80% (Table 1). Samples (169) have been tested with and without seed treatment. Average for untreated samples is 74%, but with seed treatment (Raxil/Thiram), germination has been improved to 91%, indicating seed treatment can improve quality in some seed lots. A paired test comparing untreated and treated germination is \$16.

If you plan to sell wheat, be sure to have purity and germination tests conducted. We can do this for you at a charge of \$11. This information is required on the tag. About 2 pounds of seed will be enough for purity and germination testing.

Please contact the lab if you have any questions about submitting samples for testing or need complimentary envelopes to submit the samples.

Table 1. Number of samples by germination percentile for wheat and barley samples received for service and regulatory testing (Jan. 1—July 31, 2010) and average germination of all (291) wheat samples and 169 individual samples that were untreated/treated.

% Germination	Wheat	Barley
95-98	37	3
91-94	45	5
86-90	39	1
81-85	42	1
<80	128	1
Total Tested	291	11

Wheat Samples	Average Germination
All 291	80%
169 Trt/Untrt	
Untreated	74%
Treated (R-T)	91%

For additional information regarding these topics, contact our office by phone (859-257-2785) or email (Cindy.Finneseth@uky.edu).

C. Finneseth
Seed Regulatory and Testing Programs

Fertilizer Stop Sale Release and Penalty Payments

Over the 2009 fall and 2010 spring fertilizer seasons the Division of Regulatory Services sampled over 2,300 products for analysis. Of those samples, less than 9% experienced one or more deficiencies. This is the lowest deficiency rate in many years and the manufacturers in Kentucky should be proud of such a low rate.

For those samples which experienced a deficiency, I am enclosing some helpful hints in getting those stop sales and penalty payments resolved. A sample fertilizer inspection report follows in two sections with an explanation of the details presented in the report. A printed version of this report and details can be obtained by contacting the fertilizer program at 859-257-2785. Comments below are keyed to the respective sections on the Inspection Report shown.

Print date 3/01/0000	UNIVERSITY OF KENTUCKY COLLEGE OF AGRICULTURE DIVISION OF REGULATORY SERVICES		UNIVERSITY OF KENTUCKY College of Agriculture Division of Regulatory Services <i>An Equal Opportunity University</i>	
FERTILIZER INSPECTION NUMBER 000000 (1)				
(2) DEALER 1234 FARM STORE 1 FARMSTORE ROAD LEXINGTON, KY 40515	(3) MANUFACTURER 4567 ACME FERTILIZER 5 FERTILIZER ROAD LEXINGTON, KY 40505	(4) REPORT DATE: 03/01/00 GRADE: 12-02-04 FORM: Bag LOCATION: 1234 AMOUNT: 2.34 TONS	(5) DATE SAMPLED: 01/01/00 BRAND: BEST FERTILIZER EVER INSPECTOR: ME222 INVOICE:	(6) Bag AOAC Probe 22wt 10ex 10samp
TEMPORARY COPY (7)				
	(8)	(9)	(10)	(11)
	% GUAR	% FOUND	COMMENT	PENALTY PER TON
Total Nitrogen	12.00	10.93		\$0.00
Available Potash	2.00	5.86		\$0.00
Soluble Potash	4.00	4.90		\$0.00
VALUE	200.76	267.09		
%RELATIVE VALUE	*133.04*			
Water Insoluble Nitrogen	2.50	2.04	DEFICIENT	\$0.00
Calcium	2.00	2.02		\$0.00
Total Penalty Rounded to Nearest	ASSESSED PENALTY PER TON		\$0.00	
	TOTAL PENALTY		\$0 (12)	
=====				
!!!!!!!!!STOP SALE STOP SALE!!!!!!!!!!!! (13)				
YOU ARE HEREBY NOTIFIED NOT TO SELL, OFFER FOR SALE, REMOVE OR PERMIT REMOVAL FROM YOUR PREMISES THE FERTILIZER DESCRIBED ABOVE UNTIL RELEASED BY THE DIVISION OF REGULATORY SERVICES. THERE IS NO PENALTY, HOWEVER, ALL THE FERTILIZER IN THIS LOT MUST BE ACCOUNTED.				
MSSG:	COORDINATOR FERTILIZER REGULATORY PROGRAM Division of Regulatory Services 103 Regulatory Services Building University of Kentucky Lexington, KY 40546-0275 (859) 257-2785			

- | | | |
|--|--|---|
| 1. This is the "Inspection Report Number", we also refer to it as the "Sample Number". | FORM: Product form (bag, bulk, liquid). | INSPECTOR: Inspector's initials and sample number; and, |
| 2. Indicates the dealer/store/location where the product was sampled. | LOCATION: Location number (dealer) where product was found offered for sale; and, | INVOICE: Invoice number (if applicable) for the product. |
| 3. The product manufacturer. | AMOUNT: Amount (tons) that were on hand when the sample was taken. | 6. SAMPLING METHOD: Abbreviated description of sampling method. (Here, AOAC bag probe, 22 lb. bag size, 10 examined, 10 sampled. |
| 4. REPORT DATE: Indicates the date the report is issued.

GRADE: Product grade according to the Guaranteed Analysis. | 5. DATE SAMPLED: Date sample was taken (vs. report date),

BRAND: Product name or farmer name if a custom mix, | 7. Terms vary depending on the copy. The manufacturer's copy will read "Manufacturer Report"; the dealer's will read |

REQUEST FOR RELEASE:	ACTIONS YOU MAY TAKE: (CHECK APPROPRIATE ACTIONS) (15)
WHEN THE STOP SALE WAS RECEIVED THE (14) DISPOSITION OF	<input type="checkbox"/> 1. RETURN TO MANUFACTURER FOR PROCESSING (a) <input type="checkbox"/> 2. RELABEL - PRICE ADJUSTMENT (b) <input type="checkbox"/> 3. PENALTY PYMT TO DIVISION OF REGULATORY SERVICES (c) <input type="checkbox"/> 4. PENALTY PYMT TO CONSUMER, SENT BY 6/1/0000 (d)
THIS LOT OF FERTILIZER WAS:	(16) Requested by _____ RELEASED _____ (17)
____ TONS ON HAND (a)	SIGNATURE _____ DATE _____
____ TONS SOLD TO IDENTIFIABLE PURCHASER (b)	PRINTED NAME _____ DATE: _____
____ TONS SOLD TO UNIDENTIFIABLE PURCHASER (c)	FIRM _____ DIV OF REG SERVICES _____
____ TOTAL TONS (d)	ADDR _____

"Dealer Report". If the fertilizer was a farmer's custom mix, the farmer will receive a "Farmer's Copy". "Temporary Copy" is the file report kept while the deficiency is being resolved.

8. The product's Guaranteed Analysis. (From the manufacturer's label for the product.)
9. Values based on lab analysis.
10. A deficiency or an overage of the expected value will be noted here.
11. Here is where any penalties will be indicated.
12. **TOTAL PENALTY:** The sum of all NPK penalties plus any secondary and micro-nutrient penalties, based on total tons represented by the sample [after AMOUNT field in (4)]. The amount of an individual nutrient penalty is based on the deficiency of that nutrient guarantee and the commercial value of that nutrient.
13. Shows if the product has had a stop sale issued and is not allowed to be offered for sale until the deficiency is resolved.
14. This area must be filled out by both the manufacturer and the dealer to show where the product has gone. There should be a value indicated in each of the blanks as follows:

- a.) **Tons on hand**-how many tons of the product were on hand when the stop sale was received.
 - b.) **Sold to an identifiable purchaser**-how many tons were sold to an identifiable purchaser. Generally this is found with a custom blend when the farmer making the purchase is known.
 - c.) **Sold to unidentifiable purchaser**-how much of the product (if any) was sold to unidentifiable purchasers. Generally, this is product purchased by unknown consumers at a retail location.
 - d.) **Total Tons**- this amount should add up to the total of tons shown on the report (in this example 2.34 tons).
15. Actions to resolve this deficiency are indicated here:
- a.) Product can be returned for re-processing. Supporting documentation should be included when returning the form for release of stop sale (bill of lading, pick up receipt, etc.).
 - b.) Product may be relabeled at the value found by our lab and a price adjustment made to the retail price of the product per the calculated penalty. Supporting documentation is the new label and notation from the dealer for label receipt and notation of the price change made.
 - c.) Penalty paid to Division of Regulatory Services based on the product that has been sold to unidentifiable purchasers. Supporting documentation will be the returned report from the dealer stating the total amount of the product sold to unidentified purchasers. Penalty is NOT due on product still "on hand" and "Returned to Manufacturer For Processing".

d.) Penalty paid to the consumer. If the fertilizer was sold to an "identifiable purchaser" any penalty should be paid to them (this may include crediting an account if the purchaser agrees). Supporting documentation will be a copy of the check or credit issued, and a receipt signed by the purchaser indicating that the check/credit was received. (Note date shown for resolution which is 90 days from report date.)

16. The company representative should fill this area out. The form and any supporting documentation should then be sent to: The Division of Regulatory Services - Fertilizer, 103 Regulatory Services Building, Lexington, KY 40546-0275. **Any payment included needs to be made out to:**

Division of Regulatory Services.

17. Space to be initialed and dated by the Fertilizer Coordinator. At that time the stop sale will be released and a copy (initialed and dated) will be sent to the manufacturer.

If you have any questions that haven't been addressed here please call the Fertilizer Program of the Division of Regulatory Services at 859-257-2785.

*S. McMurry
J. Crawford*

Fertilizer Regulatory Program

AAPFCO Professional Symposia Managing Nutrient Environmental Issues Related to Fertilizer

The Association of American Plant Food Control Officials (AAPFCO) met in Portland, Oregon in early August. After the meeting, some members attended the Professional Symposia on Managing Nutrient Environmental Issues arranged by the Oregon Dept. of Agriculture Fertilizer Program personnel.

Phosphorus is frequently identified as the key nutrient responsible for surface water issues of eutrophication, including the ocean "dead zones" in the Gulf of Mexico and other locations. Oregon has the first wastewater treatment plant that uses an innovative technology to recover phosphorus and other nutrients from wastewater. Ostara Nutrient Recovery Technologies Inc. designs, builds and sells the new generation of water treatment systems which not only reduce the amount of phosphorus contributed to rivers and lakes, but also produces a commercial phosphorus fertilizer. The group visited the Ostara nutrient recovery facility at the Clean Water Services' Durham Advanced Wastewater Treatment Facility in Tigard, OR, the first of its kind to operate in the US. The facility opened spring of 2009.

Some wastewater treatment plants concentrate large quantities of nitrogen and phosphorus in the sludge handling streams. These nutrients combine with magnesium to form struvite scale in pipes, pumps and valves. Struvite is like concrete and is expensive to remove. The new technology takes the sludge liquids, initiates a chemical reaction, removes most of the phosphorus, and returns the processed sludge liquid to the waste stream. Magnesium chloride and sodium hydroxide are added to the removed phosphorus to produce struvite pellets that are harvested from a process reactor to produce a high-quality, slow-release, granular fertilizer that can be mixed with other fertilizer nutrients. The product is the only slow-release fertilizer with a combination of nitrogen, phosphorus and magnesium [5-28-0 +10% Mg as magnesium ammonium phosphate hexahydrate ($MgNH_4PO_4 \cdot 6H_2O$)]. It takes months for the hard granular prill to dissolve. This slow release form of phosphorus can provide plant nutrients over the growing season and reduce the amount of unused nutrient left in the soil.

By recovering phosphorus before it enters waterways, the process reduces treatment costs at wastewater facilities while adding a revenue stream from a slow-release phosphorus fertilizer. A second plant, in Suffolk, Virginia, opened on May 27, 2010.

The symposia group also visited Fisher Farms, Gaston, OR, a production plant nursery that supplies a variety of plants to the wholesale and retail nursery marketplace. Located in a river basin designated as water-quality limited by EPA, Fisher Farms has installed a number of technologies to prevent nutrient-enriched water from leaving their property. Controlling runoff and reusing irrigation water also provides cost-savings by reducing the amount of irrigation water purchased from the local irrigation district.

The first principle of nutrient management, described by Terry Menninger, Fisher Farms production manager, is conservation. "We don't want to use any more fertilizer than the plant needs," said Terry. "Any fertilizer that leaves a pot is lost money."

Recognizing that even with the best intentions we rarely achieve the ideal, Fisher has also developed several systems to keep nutrients on-property. Their Gaston facility drains to three different ponds, each located at the foot of a natural slope. Water from any of the ponds can be pumped to any location in the nursery. Reusing irrigation water could transfer plant diseases across the nursery or present problems with the concentration of salts, but Fisher has addressed this with several different treatment methods.

Some water is treated before it reaches the largest of the ponds by using plant material to help clean the water. The water moves through a serpentine set of channels lined with cattails and sedges. This biological filtration system has been shown to be an effective component of the total water treatment approach by Ph.D. research from Oregon State University. Water reaching one of the ponds is also treated with an ozone generator to prevent spreading disease organisms, while another of the ponds uses an electrolysis unit and oxygenation to reduce salts and bacteria in the treated water.

Continued on following page

Announcements

Nutrient Environmental Issues

Continued from previous page

As issues with phosphorus in surface water continue to grow, a variety of approaches will be needed to prevent and mitigate contributions from many sources. Phosphorus is often the limiting element and its control is of prime importance in reducing the accelerated eutrophication of fresh waters. These two facilities provided a glimpse of some of the available approaches being used.

References:

<http://ostara.com/>

<http://www.fisherfarms.com/>

*Melton Bryant
Feed and Fertilizer Lab,
University of Kentucky*

*Don Wolf
Fertilizer Program Specialist,
Oregon Dept. of Agriculture*

Strategically placed vegetative filter strips reduce irrigation run-off and allow for nutrient capture and reuse. Fisher Farms, Gaston, OR.



Upcoming UK Events

National Hay Association Annual Convention

September 1-4

Marriot Griffin Gate Resort
Lexington, Kentucky
<http://www.uky.edu/Ag/Forage/>

KY Forage and Grassland Council Field Day—September 14

Barren County, Kentucky
<http://www.uky.edu/Ag/Forage/>

College of Ag Roundup—September 18, 2010

E.S. Good Barn, Lexington, KY
<http://www.ca.uky.edu/alumni/>

Beef Bash 2010—September 23

U.K. Research & Education Center
Princeton, Kentucky
<http://www.uky.edu/Ag/Forage/>

World Equestrian Games—September 25-October 10

<http://www.alltechfeigames.com/>

Mountain Ag Field Day—October 2

Robinson Center,
Jackson, Kentucky
<http://www2.ca.uky.edu/rcars/>



Regulatory Services News is published quarterly for the feed, fertilizer, milk and seed regulatory programs and the seed and soil service testing programs of the Division of Regulatory Services. It is provided free to persons interested in these programs. For subscriptions or address changes, contact Cindy Finneseth, Editor, either by email at Cindy.Finneseth@uky.edu or by telephone at (859) 257-2785. You can also request electronic delivery and access past issues of Regulatory Services News on the Internet at <http://www.rs.uky.edu>.

*The College of Agriculture is
an Equal Opportunity
Organization*

Division of Regulatory Services
103 Regulatory Services Bldg.
Lexington, KY 40546-0275
859-257-2785
www.rs.uky.edu

Regulatory Services News
Division of Regulatory Services
College of Agriculture
University of Kentucky
103 Regulatory Services Building
Lexington, KY 40546-0275

RETURN SERVICE REQUESTED