

Regulatory Services News

Feed ♦ Fertilizer ♦ Milk ♦ Seed ♦ Seed Testing ♦ Soil Testing

Fourth Quarter 2002

New Regulatory Specialist in Feed and Fertilizer Laboratory

On September 9, 2002 James Bartos joined us as the new Feed and Fertilizer Analytical Laboratory Regulatory Specialist. James will provide technical leadership for analysis of various sample types conducted by this department. The laboratory performs analysis of feed, fertilizer and soils and many of these analyses are performed using spectroscopic techniques. As many as 4,000 fertilizer, 4,000 feed and 35,000 soil samples are analyzed annually. James has experience with other

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James Bartos

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Bartos (con't)

analyses such as automated P and K determinations and chromatographic determinations of triazine. He will supervise others in the technical operations of the laboratory.

James' background includes growing up and working on the family dairy farm here in Kentucky. He graduated from Owensboro High School and attended Western Kentucky University, obtaining a degree in agriculture with an emphasis in agronomy. He was an undergraduate teaching assistant in the General Soils Laboratory. He conducted a summer internship with Dr. Michael Akins of American Cyanamid, during which he helped conduct field trials for experimental herbicides in Western Kentucky and Southern Illinois. After receiving a B.S. degree, he attended Auburn University and studied soil chemistry, with a research area in phosphorus fertilizers. He obtained an M.S. in soil chemistry under the direction of Dr. Greg Mullins. He also worked as a research associate in the Auburn University soil testing laboratory.

James joined the University of Florida, working in the Soil and Water Science Department. As Laboratory Coordinator of the extension soil

testing and analytical research laboratories, James directed a staff of 12. The analytical testing of the laboratory grew by over 300% during his tenure as coordinator. James joined A&L Laboratories in Memphis, TN as the Agriculture Laboratory Manager as his next challenge. Fertilizers, feeds, soils, liming materials and manures were his primary areas of emphasis at A&L Laboratories.

James brings a tremendous amount of skill, experience and knowledge to his position. He has experience in automated flow analysis, spectroscopic analysis, sample digestions, extraction techniques, thermal determinations and environmental sample analysis. His area of expertise involves determining bioavailability of phosphorus in water-insoluble components of various phosphorus fertilizers. Current method development involves trace metals in fertilizer and selenium determinations in mineral premixes. James will be using the new spectroscopic instrument in the laboratory to expand and improve the metals analysis in fertilizer and feed materials.

We welcome James back to Kentucky and look forward to his contributions to the feed and fertilizer program and to producers of the state.

Mel Bryant -- Feed/Fertilizer Laboratory

Regulatory Services Hosts Russian Visitors

A delegation of 10 Russians visited Regulatory Services on November 6th as part of a Center for Citizen Initiatives Productivity Enhancement Program. The individuals are agribusiness leaders in their home country directing a total of about 1200 employees.

The visitors were given an introductory presentation on the functions of the Division by Dr. Frank Sikora. Afterwards, they were given a tour of the soil, seed, and feed/fertilizer laboratories by Mr. Danna Reid, Ms. Tina Tillery and Dr. Melton Bryant, respectively.

Their parting comment was that they were very impressed with the technical equipment and expertise we have to do our jobs.

Frank Sikora -- Soil Program

Kentucky Feed and Grain Annual Meeting

The annual meeting of the Kentucky Feed and Grain Association will be held in Louisville at the Brown Hotel on February 20 - 22, 2003.

First time attendees will receive one year of free membership to the association.

This conference will be a can't miss for those in the feed, seed, milling or associated businesses.

Steve Traylor -- Feed Regulatory Program

Seed Labeling Requirements

A number of improperly labeled seed lots have been noted in Kentucky's seed trade this year. Action to correct these improperly labeled lots requires time of dealers and seedsmen and can cause delays, which the consumer can ill afford. Properly labeled seed delivered to a retail outlet is important to dealers and consumers. Planting opportunities, especially during the fall season, are limited to weather and equipment operating in good order. When a serious labeling problem is noted we make every effort to work with seedsmen and dealers to get necessary corrections accomplished as quickly as possible.

Common labeling violations noted this year include lack of a labeling permit, delivery of seed without proper labeling attached, use of incorrect variety designations, and in some circumstances, delivery of treated seed without the proper treatment statements attached. All of these require immediate corrective action prior to sale. A review of the requirements of the Kentucky seed law with regard to these items may be helpful.

A permit to label seed is required for all seed distribution, unless the seedsmen chooses to purchase blank official Kentucky seed tags and fill in the appropriate guarantees. A number of unpermitted seedsmen are always noted in the fall, particularly in Western Kentucky. Most of

these involve wheat from out of state seedsmen. The common course of action is to contact the seedsmen, advise of the permit requirement, fax a permit application and approve the application by fax conditional upon receipt of the hard copy and application fee. This process can take as little as 30 minutes to accomplish and will not tie up the seed lot. The issue of improper varietal labeling can hinder the speed of the process, as the labeling has to be corrected. If a dealer does not know the permit status of a seedsmen, a call to my office can quickly verify permit status.

The use of incorrect variety designations or a failure to provide a variety designation will result in a stop sale being issued on a seed lot. Hybrid corn, soybeans and wheat all have been improperly labeled in this manner this year and have required considerable time and effort to correct. Hybrid corn must be labeled by the correct hybrid designation. Soybeans in Kentucky must be offered by variety name. Some companies tried to offer soybeans by brand designation only. Branding is permitted, but the correct variety has to be clearly stated. Use of the variety designation, "Variety Not Stated" is also noted to be a labeling problem, especially in seed lots of wheat shipped into Kentucky. This problem is also noted in grasses and forages. Proper variety names

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The Importance of Properly Identifying that Milk Sample

Most milk sampler-weighers realize obtaining an accurate bulk milk tank sample is very important. It's important to the producers on their routes to make sure they are properly paid. It's important to the processors you deliver to so that they receive a representative sample of the milk they receive. It's important for public health to make sure each producer's milk is of acceptable quality for human consumption. Besides that, it's your job! Whenever you apply for a license or permit to haul milk, you agree to comply with all sampler-weighers requirements, including sampling methods.

As a milk sampler-weigher, you know if an accurate sample is not obtained from each bulk tank, a number of problems can occur:

- Producers cannot be paid accurately. Producers can also be placed in jeopardy from inaccurate samples. It is not uncommon for them to receive violation notices for high bacteria, high somatic cell counts, added water, or even "inhibitors"; all due to a poor sample.
- Processors cannot be not billed correctly. And, they cannot effectively evaluate the quality of milk coming into their plant when poor samples are obtained.
- The public health food security system is jeopardized. If a problem does happen to occur with a tanker load of milk, the source of the problem can't always be determined when poor samples are obtained.
- You can be found in violation of sampler-weigher requirements. As a licensed sampler-weigher, you should strive to have a good record with regulatory agencies. If you do, it demonstrates to your producers, the processors you deliver to and your employer that you take your job seriously.

Due to these items and for many more reasons, a great deal of emphasis is placed on obtaining accurate milk samples. But there are some other important requirements relating to obtaining samples as well. One is sample labeling.

Sample labeling is important because several people may need information recorded on a milk sample. Most of the time, people who need this information do not have the opportunity to ask the sample collector about the sample. Because of this, the information recorded on all sample containers should be legible and complete.

Start with a waterproof pen and write clearly and in a manner so that the information you record will not rub off easily. Most sample containers today have specific areas identified on them for you to record information. These areas should be used when at all possible.

Each producer's bulk tank sample container is required to have a minimum amount of information on it. Co-ops and processors may request additional information be recorded on samples as well. It is permissible to record additional information on sample containers, but at minimum, every producer's bulk tank sample shall be identified with the following information:

- Producer identification (and tank I.D. if the producer has multiple tanks);
- Date;
- Time, including a.m. or p.m. (military time is acceptable);
- Milk temperature; and
- Sampler-weigher's initials.

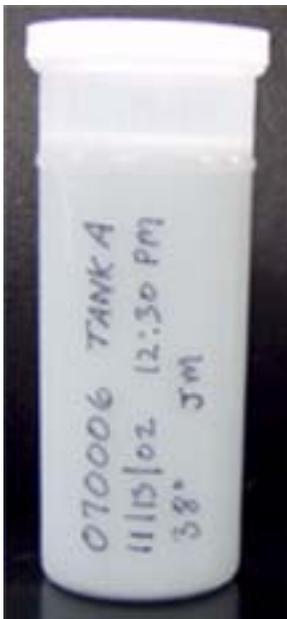
Some organizations utilize computer generated bar code labels for sampler-weighers to use to identify producers. This is an acceptable method of identifying the producer as long as the number on the bar code is indeed a producer number. If this is not the case, the producer should be identified elsewhere on the vial. Be sure you don't distort the bar code with your written records if you haul for an organization that uses this type of system.

Other samples you have should also be adequately identified. The temperature control sample obtained at your first stop and your load samples should be readily identified and also have the pertinent information listed previously on the containers. Any special samples or cow samples you have in your possession must also be easily identified. You wouldn't want these types of samples to be confused for producer samples. Someone will use all of the information you record on sample containers. Think about how

important an accurate time record on a milk sample is. Certain milk tests must be conducted within a specific time frame, usually 36 to 72 hours from the time the sample was taken. If the time on a producer's sample was incorrect or omitted, an improper test result could be assigned to that producer. Think about the consequences a producer could suffer if a milk test was conducted on a sample that was too "old".

Sampler-weighers are well trained and should be well aware of proper milk hauling procedures. Every aspect of your job, including sampling and sample container identification, is very important. Don't find yourself falling to the temptations of taking meaningless shortcuts. Take time to properly sample and weigh the milk and to properly identify and care for every sample you take. The dairy producer, processor, your employer and **you** have too much at stake!

Chris Thompson -- Milk Regulatory Program



Be sure to include all of the required information on each sample container. In the case of a sample vial, it is preferable to record information on the lid. However, it is also acceptable to record the information on the side of a vial or sample bag. Don't forget to initial each sample!



The Curious Story of Dr. Jekyll and Mr. Hyde*

Or

Why is there a Difference between Deficiency Rates for Bag and Bulk Mixed Fertilizers?

The Curious Story

Since we have been keeping records of deficiency rates in the Division of Regulatory Services, bagged, mixed fertilizers have always had a higher deficiency rate than bulk, mixed fertilizers (See Chart 1). Why? They usually have the same materials, are weighed on the same scales, are mixed in the same mixers and moved on the same conveyors. The reason may be in the differences between the handling and sampling of bag and bulk mixtures.



Handling

Once a mixed fertilizer is blended and placed on a conveyor, the similarities between the two diverge. The fertilizer destined for bags is moved by the conveyor to the bagging operation where it is placed in an 'open' hopper above the bagging equipment. The size of the hoppers varies but is usually about 4-5 tons. The 'open' hopper allows the mixture to 'cone' as it fills the hopper. The bagging equipment is designed to fill bags by allowing the mixture to flow from the hopper into the bags from a point near the center of the hopper. The bags are then stacked on a pallet of about one ton each.

Herein lies the major and most important difference in the handling of the mixed fertilizer. The placing of the mixture into the bagging hopper allows a cone to form and if the materials making up the mix are not matched in size the mixture will 'un-mix' as it forms the cone. The smaller particles will stay in the middle of the cone and the larger particles will roll to the outside of the cone. During the bagging operation the first portion of the mixture to exit the hopper will be the smaller particles followed by the larger particles. The first bags of the batch, then, will contain a larger proportion of small particles and consequently a smaller proportion of large particles. The last bags, then, will be just the opposite containing a larger portion of the larger particles and a smaller portion of the small. Samples taken from the lot are more likely to vary in their analyses because of this phenomenon.

If the materials in the mix are well matched in size then we would not expect any significant difference between bag and bulk samples.

On the other hand, a mixed fertilizer destined for bulk handling is moved by the conveyor directly to the bulk truck or buggy for distribution onto the customer's field.

Sampling

The Official AOAC bag sampling procedure prescribes that 10 bags be selected from the lot to be sampled, that one diagonal core be removed from each bag using the AOAC bag trier, and that the ten cores be composited and designated as the official sample. If the bagged mixture has materials of significantly different particle sizes then we would expect the bagged sample to exhibit a higher variation from the guarantee.

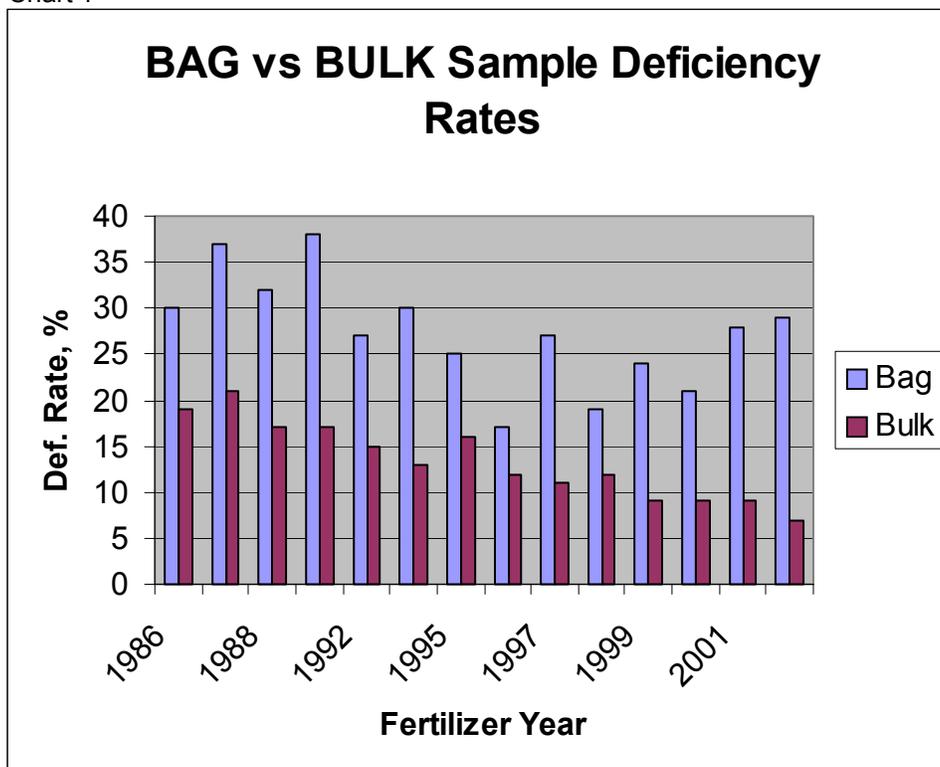
There are two AOAC sampling methods for bulk fertilizers in common use, stream sampling and static pile sampling. A stream sample is obtained when the mixed fertilizer is falling from a conveyor or mixer to a lower level and the official stream sampler can pass through the stream as it falls. Ten equal time-spaced samples are taken and composited for the official sample. During stream sampling the mixture has not been allowed to cone; therefore, the samples will not be as variable as when they are taken after the mixture has been allowed to form a cone. If the mixture has been loaded into a truck or buggy then ten vertical cores are taken in a specific pattern from the load using a Missouri D trier. The ten cores are composited and become the official sample.

The primary thing that is common to all the sampling methods is that 10 portions are taken from the lot of fertilizer and composited and designated as the official sample. The procedure used in the collection of the ten portions in each of methods was developed from scientific sampling studies and has been shown to fairly represent the lot of fertilizer being sampled.

Conclusion

The difference between bag and bulk samples is probably related to how well the materials used in the mix are matched in particle size. The most important factor in blending fertilizer mixtures for bagging is to use materials **matched** in particle size.

Chart 1



* My apologies to
Robert Louis Stevenson

*D.L. Terry --
Fertilizer Regulatory Program*

Fred Herald Retiring from Regulatory Services

Fred Herald has served as Coordinator of the Inspection Program for the past 17 years. During this time Fred has become a nationally recognized expert in the sampling and inspection of feed and fertilizer.

Fred has been an active participant in the Association of American Feed Control Officials (AAFCO). He co-hosted the AAFCO Administrator's Seminar for ten years when it was held at Shakertown, Kentucky and more recently served on the Inspection and Sampling Committee. This past year he chaired a task force to evaluate sampling methods for protein blocks. Fred's work in the Association of American Plant Food Control Officials (AAPFCO) has concentrated on development of inspection procedures and providing training for fertilizer inspectors throughout the United States. This was accomplished through his service on the AAPFCO Seminars Committee and Chairmanship of the Inspection and Sampling Committee. He also assisted in the preparation of the AAPFCO Inspection Video and compiled the 6th Edition of the AAPFCO Inspection Manual. Most recently he served on a task force to develop an official method for sampling mini bulk bags of fertilizer. Fred took the information and ideas that he developed from conducting inspections and working with our inspection staff to formulate new and innovative approaches to inspection. His expertise and knowledge will be greatly missed upon his retirement.

Fred was raised in Booneville, Kentucky where he learned at a young age about hard work by assisting his father with the saw mill and grist mill. At 17



Fred Herald

he entered the U.S. Air Force where he was an air policeman for 4 years. Upon leaving the military he was employed for a short time with a concrete block manufacturer. Seeking new opportunities, he moved to Lexington and took a job delivering the mail on the UK campus. In 1971 he graduated with his B.S. degree in Entomology and in 1976 completed his masters degree in Medical and Veterinary Entomology. He worked for 11 years in the Entomology Department before coming to Regulatory Services. Fred plans to retire on January 3, 2003. On the 6th he plans to start building fences on his farm. All his friends at UK and around the country wish Fred a great retirement. Thanks for all you have contributed to the success of our Division and inspection programs in the U.S.

Eli Miller -- Director

2002 Seed School Seed in Kentucky -- Regulation and Testing

The 2002 Seed School: Seed in Kentucky – Regulation and Testing was quite successful. At the Lexington location on August 26, we had 21 participants, representing five firms. At the Princeton location on September 4, we had 20 participants, representing eight firms. Most firms are located in Kentucky, but a seed company in Illinois and another in Tennessee did send representatives to our school.

The morning began with an overview of the Kentucky Seed Law, followed by a discussion of basic information necessary on the seed tag. One of our inspection staff, John Flood, presented inspection procedures and sampling, which was followed by a virtual tour of our seed laboratory and discussion of seed testing and reporting. In the afternoon, seed tag violations and resolution were discussed followed by a KSIA (Kentucky Seed Improvement Association) representative who outlined the seed certification process. The current issue of how to handle seed stock was addressed and the day ended with a question and answer panel with the speakers.

Survey comments about the Seed School were very favorable and we have plans to continue with the program. Participants indicated they learned valuable information they plan to implement in their firms and listed suggestions for future topics.

If you have any suggestions for future Seed School topics, please contact Cindy Finneseth (cfinnese@uky.edu) or David Buckingham (dbucking@uky.edu) at 859-257-2785.

Cindy Finneseth -- Seed Testing Laboratory

CSAOAC Meetings in Indianapolis

Mel Bryant and James Bartos attended the Central Section Association of Analytical Communities (CSAOAC) meetings in Indianapolis, Indiana on October 28th and 29th. Kentucky, Indiana, Ohio, Michigan, West Virginia and Western Pennsylvania represent the CSAOAC section.

Mel gave a presentation on Inductively Coupled Plasma Optical Emission Spectrometry (ICPOES) Analysis of Feed, Fertilizer and Soil Materials Using Axial Viewing and a CCD Detector System. James serves as the CSAOAC member-at-large for the state of Kentucky.

Information regarding improved methods for Mercury analysis of fertilizer, as well as improvements to other analytical procedures were obtained. Attendance was below average, with only about 75 individuals from various state agencies and private industry in attendance. The next meeting will be held in Columbus, Ohio in October 2003, where we hope for improved attendance.

If you would like more information about these meetings, need more information about the CSAOAC, or would like to give a presentation on your analytical work, please contact James Bartos or Mel Bryant at 859-257-2785.

Mel Bryant -- Feed/Fertilizer Laboratory

Feed Program Advisory Board

The Feed Advisory Board met on November 13th to discuss issues relating to regulatory policies, legislation and program direction. The Feed Regulatory Program has the objectives of :

- (1) providing consumer protection for purchasers of livestock feeds,
- (2) maintaining a marketplace environment that promotes fair and equitable competition for the feed industry, and
- (3) assisting in assuring the safety of food products.

Through industry cooperation and support we are able to provide a complete program to sustain these objectives.

Feed Board members are Dr. Robert Harmon (Animal Science Chair), Jarrod Kersey (Iams), Sue Carlson (Cargill Animal Nutrition), David Fairfield (National Feed and Grain Association), Bill Tucker (Bagdad Roller Mill), James Pierce (Alltech), Richard Morrison (Cagles-Keystone Foods), Darrell Johnson (Burkmann Feeds), Tom Davenport (Davenport Farm Supply), Matt Rudy (Rudy's Farm Supply), Dave Maples (Kentucky Cattlemen's Association) and Patrick Jennings (Kentucky Farm Bureau). I would like to extend my thanks to each of the members that attended the meeting and for the input provided.

Steve Traylor -- Feed Regulatory Program



Feed Group (L-R)

Eli Miller (Director, Regulatory Services), David Fairfield, Sue Carlson, Tracy Burden (Inspector, Regulatory Services), Roger Scholten, Bill Tucker, James Pierce, Richard Morrison, Steve Traylor (Feed Coordinator, Regulatory Services) and Darrell Johnson.

Seed Labeling Requirements (con't)

are required if they are known, and if unknown, use of the term "Variety Unknown" is permitted in Kentucky. All of these require the seed lot to be relabeled. Time required to correct these violations is dependant upon how quickly the seedsman can provide corrected labeling. Once corrected, releases can be obtained by fax.

Seed delivered to a retail outlet is required to have complete labeling on each container. A number of seed lots have been noted having been delivered without any labeling or with labels left at the dealer but not attached to the containers. In the case of Kentucky certified seed, my instruction to the inspection staff is to seize and return these labels to my office to be returned to the Kentucky Seed Improvement Association. Kentucky certified labels can only be attached by an approved certified seed processor or an agent of the Kentucky Seed Improvement Association. If the seed containers are not identified with a lot number, the seed lot cannot be labeled until a sample is obtained and a complete seed analysis test is completed. All of these actions require that the seed be labeled properly and the time involved in accomplishing this is dependent upon a number of factors.

Treated seed lots require a proper treatment statement and the statement required is determined by the seed treatment. Seed treatments

are required to be identified, because some of these treatments may be harmful to personnel handling them and due to environmental considerations. Should someone have an adverse reaction to a chemical treatment, it is essential that the chemical be identified for the affected individual to receive proper treatment. Proper treatment statements must be attached to all containers. As in other circumstances requiring the attachment of labeling, this takes time to accomplish.

Proper attention to these labeling considerations will save a considerable amount of time for everyone involved in the process. If an action to stop sale on a seed lot is taken, a release can be obtained quickly after corrections have been accomplished. The release request, along with a copy of the corrected labeling, should be faxed to 859-257-7351. A phone call advising that the fax is being sent is also helpful. Upon receipt of the fax and a review of the corrections, a release will be immediately faxed. One problem I have encountered with this process is a failure to include the fax number from the person requesting release. Mailing a release request involves considerably more time, but mailing is acceptable if timely release is not a consideration. We will make every effort to accomplish releases as soon as possible. If you encounter problems with the process, please call our office at 859-257-7363.

David Buckingham -- Seed Regulatory Program



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