

Regulatory Services News

Feed – Fertilizer – Milk – Seed – Seed Testing – Soil Testing

First Quarter 2004

A Special Tribute to Retired Regulatory Services Employees

The Division of Regulatory Services held a retirement party for Sue Herald, who retired with 40 years of service with the University of Kentucky. Thirty-nine years were as an employee of Regulatory Services in the Feed and Fertilizer laboratory. Her guest list included several former employees of the Division who are enjoying retirement. Rita Jones, Vern Case, Tilley Farley, Dave Lichtenberg, Val Midkiff, Reva Brumagen, Sue Stone, and Dr. Wilbur Frye came back to celebrate the special occasion. These individuals and many others have contributed significantly to the success of Regulatory Services. The occasion gave us the opportunity to reminisce about how things used to be.

continued on pg. 16



*Retirement Celebration:
Pictured (l to r) Wilbur Frye, Val Midkiff, Sue Herald and Eli Miller.*

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What's inside....

2003 Poundstone Award Winner	2
Sue Herald Retires from Regulatory Services	3
Inspection Territory Realignment	3
Seed Labeling Requirements	4
Milk Laboratory Update	4
Determining Mixing Uniformity of Feeds	5
Princeton Soil Lab Update	6
KY Quality Dairy Producer Award	6
Labeling Custom Medicated Feeds	7
Milk Handlers Advisory Board Meeting	8
2003 Inspection Program Activities	9
Feed-Fertilizer Lab News	9
Safeguards Against BSE Transmission	10
Preventing Milk Sampler-Weigher Violations	11
Fertilizer Labeling Tips	12
Division Service Awards	15

2003 Regulatory Services Poundstone Award

Beth Nichol has been recognized as the 2003 Poundstone Award winner. Beth is a germination analyst in the seed area and has been with Regulatory Services for over ten years. Beth performs sample analysis and coordinates sample flow through the germination lab, directing students and a temporary employee to get samples planted, scanned into the database and filed for storage.

Always willing to come in to work early, shorten her lunch and work late, it is not uncommon to see Beth here on weekends checking the germination equipment and finishing tasks like filing or scanning samples into our database. In 2003, Beth completed more than 9000 individual tests, including preparation and evaluation of standard germination tests, accelerated aging tests on corn, wheat and soybeans, 3-day evaluations, moisture determinations, Roundup tolerance of corn and soybeans, TZ on soybeans, treated germination of wheat, prechill treatments and cold tests.

Beth is an Association of Official Seed Analysts-certified germination analyst and has been involved in seed testing at the national and local level, participating in AOSA annual meetings, Kentucky Seed Improvement Association meetings and numerous lab field trips. Over the last few years, Beth has taken the lead on performing referee testing on corn, soybeans and wheat to increase proficiency and consistency across laboratories and to improve AOSA seed testing procedures. Beth has also served on the Division's safety committee, as a United Way representative and has been a blood donor in many College of Agriculture blood drives.



Eli Miller, Director; Beth Nichol, 2003 Award Winner and David Buckingham, Seed Regulatory Coordinator (L to R)

C. Finneseth, Seed Testing Program

Previous Poundstone Award Recipients

2002 - Lewis "Ed" Hill
2001 - Ellen Marshall
2000 - Sue Stone

Poundstone Award Has Industry Support

The Division of Regulatory Services wishes to express its appreciation to the AgriBusiness Association of Kentucky, the Kentucky Feed and Grain Association and the Kentucky Seed Improvement Association for their support of the Poundstone Award. It is especially gratifying that these associations participate in the recognition of our outstanding staff. This speaks well of the excellent relationship and support by the regulated industries for our regulatory and service programs. Working together has been a successful approach that has greatly benefited the industry and Kentucky consumers.

Eli Miller -- Director

Sue Herald Retires From Regulatory Services

Sue Herald retired on February 3rd with more than 39 years of service to the Division of Regulatory Services. Upon completing a Chemistry degree at Berea College, Sue began working at the University and continued with post-graduate coursework in linguistics. Sue has most recently been performing analyses of drugs, mycotoxins and sugars in feeds, but has also conducted Kjeldahl tests; nitrogen testing of fertilizer; protein and urea analysis of feeds; fat and fiber determinations of feeds; calcium and moisture tests as well as pesticide formulation testing.



Sue Herald (right) receiving congratulations from Division Director, Eli Miller.

Sue implemented a computer interface for recording data in the feed drug lab and over the course of her career, she has been involved in many AOAC collaborations. A few of the studies included evaluating and determining official analytical methods relating to fiber in feeds, phosphorus in fertilizer, drugs in feeds and pesticide formulations. She has also been involved in professional meetings - presenting talks and moderating sessions.

The Division has been fortunate to have Sue serve on the social and safety committees and as a representative in the United Way campaign and College of Ag. blood drives. Sue served as the Division safety officer and has served on numerous hiring committees as well as being very active in College activities. She has been a representative of the College of Agriculture Staff Liason Committee and secretary for that organization.

Sue has plans to enjoy retirement - reading, needleworking, traveling and enjoying her grandson, Marshall. Sue will continue performing in two singing groups, Sweet Adelines and Sister Sound.

Inspector Territories Realigned

Some changes in inspector territories will occur over the next few months. You may see some new faces, or some faces from the past, inspecting facilities they have not seen recently. A vacancy opened in the Louisville area and provided us with the opportunity to evaluate our inspectional needs. After careful study it was determined to shift the inspector position to western Kentucky. This will facilitate the inspection of milk haulers and specialty feed, seed, and fertilizer sales in western KY. The inspector will also have a limited number of counties to inspect agricultural sales of feed, seed, and fertilizer. We feel that this will better utilize our inspection staff's field activities and increase our efficiency in covering milk haulers and specialty products within the state.

S. McMurry, Inspection Program

Seed Labeling Requirements

Improperly labeled seed lots carry with them the hidden cost of extra time and effort. Action to correct these improperly labeled lots requires extra time of dealers and seedsmen and unnecessary delays. Properly labeled seed delivered to a retail outlet is important to the dealer and the consumer. Planting opportunities are limited to the weather cooperating and equipment operating in good order. When a serious labeling problem is noted we make every effort to work with the seedsmen and the dealer to get the necessary corrections accomplished as quickly as possible.

Common labeling violations include the lack of a labeling permit, delivery of seed without proper labeling attached, use of incorrect variety designations, and in some circumstances, the 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. Unpermitted

seedsmen are always noted in the spring and fall, particularly in Western Kentucky. Most of these involve soybeans and 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 correct. If a dealer does not know about the permit status of a seedsmen, a call to my office can quickly verify the 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 the seed lot. Hybrid corn, soybeans, and wheat have been noted to be improperly labeled as to variety designation in the past. This problem requires considerable time and effort to correct. Hybrid corn has to be labeled by the correct hybrid designation. Soybeans in Kentucky must be offered by variety name. Some companies wish to offer soybeans by brand designation only. Branding is permitted, but the

continued on pg. 16



Milk Laboratory News

Anne Harper joined the milk laboratory in January as a Senior Lab Technician. Anne has four years of laboratory experience from previous work here in the University of Kentucky College of Agriculture. She has a BS degree in Biology from McDaniel College and an MS degree in Entomology from Virginia Tech. Her responsibilities in the milk lab include performing a wide variety of milk tests and assisting with certain feed test procedures. Anne brings a wide variety of experiences to the milk lab that includes research and teaching. We welcome Anne to the Division of Regulatory Services.

Determining Mixing Uniformity of Feeds

Numerous factors (e.g., filling the mixer beyond rated capacity; worn or altered equipment; poor mixer design; improper sequencing of ingredient additions; build-up of ingredient residues; leaking discharge gates and liquid addition systems; variations in composition and quality of ingredients; weighing errors; and postmixing segregation) are associated with variation in complete feeds. Nonetheless, inadequate mixing is implicated as the primary cause of the inadequate diet uniformity that can result in reduced animal performance and failure to comply with feed regulations (e.g., nonuniform distribution of antibiotics within a batch of feed). From a feed manufacturer's viewpoint, the optimum mixing procedure would require minimal inputs of time, power, and labor. Thus, a standard is needed to indicate adequate (but minimal) mix uniformity. That standard typically is a coefficient of variation (CV) for the concentration of some nutrient or marker within the feed, and a CV of 10% or less has been suggested as the 'magic number' that represents an adequately mixed batch of feed.

Despite what CV you select as representing a uniform mix, the most needed item in determining mix uniformity is a dependable testing procedure acceptable to both industry and regulatory agencies. At present, there is no "standard" testing procedure that gives the accuracy desired by regulatory agencies and the low cost, speed, and utility desired by the feed industry. An assay for an ingredient, nutrient, or chemical that comes from a single source would be desirable, with the assumption that an even distribution of that ingredient throughout the mix ensures even distribution of all ingredients. Salt is considered a good choice in simple corn-soybean meal-based diets while protein, calcium, and phosphorus would be poor choices because they come from several of the ingredients. The question still remains, however, of just how well these assays actually predict differences in nutritional value of the finished feed.

Diet Uniformity and Animal Performance

Data from a survey of commercial mixers stated that more than 50% did not yield CVs of less than 10% when using methionine and lysine as tracers. Similar results were reported when on-farm feed mixers were evaluated. In this study, only 42% of the diets tested had CVs for salt concentration of less than 10%, 47% were between 10 and 20%, and 11% had CVs greater than 20%. However, little research actually relates mix time, diet uniformity, and ingredient segregation to animal performance. Early research provided insight into the effects of nutrient variability of ingredients on animal performance. The researchers found that chick performance was affected by nonuniformity of dietary crude protein. It seems likely that nutrient variation because of poor mixing should cause similar effects on growth of other species. However, one author stated that improper mixing of one batch of feed will rarely cause serious problems in

growing pigs because the single batch will be consumed in such a short period of time.

At Kansas State University, researchers conducted a series of experiments to evaluate the effects of mixer revolutions (mix time) on diet uniformity and growth of broiler chicks. A corn-soybean meal-based diet was mixed for different times to represent poor, intermediate, and high uniformity. The diet was formulated to 80% of NRC (1984) recommendations for key nutrients (CP, lysine, methionine, Ca, and P) to accentuate differences in growth performance caused by diet nonuniformity. Analyses of the diets indicated a decrease in diet variability as mixer revolutions were increased. The majority of this improvement occurred as the number of mixer revolutions was increased from 5 to 20, with relatively small differences reported as mixer revolutions were further increased to 80. However, there were substantially different CVs

continued on pg. 17

ICP Brings Improvements at UK Soil Testing Lab in Princeton

The University of Kentucky Soil Testing Lab at Princeton has upgraded its equipment and procedures during the past few months resulting in better quality and service. The addition of the Varian Vista Pro ICP-AES (Inductively Coupled Plasma Atomic Emission Spectrometer) has allowed the lab to increase the quality control and combine all the elemental tests into one procedure.

The standard procedure for the lab has always been to place a "check" sample at increments of every twenty samples. These samples allow lab personnel to make sure the equipment is running and measuring samples properly. In addition to those "check samples", currently the normal ICP operation includes the calibration of standards. These standards are mixed to a known value, however, lab equipment will compensate for any errors that may have occurred in the mixing of the standards. Although these errors may be small, the values

of the soil samples could be affected. The soils lab now uses a certified pre-mixed standard to identify and correct any errors during the calibration.

The ICP has simplified the process within the soils lab by measuring phosphorus along with potassium, calcium, magnesium and zinc. Prior to using the ICP, phosphorus was measured colorimetrically and the other elements were measured individually on an AA (Atomic Absorption Spectrophotometer). The ICP measures all the elements in one procedure, which is not only more convenient, but it also decreases the turn-around time in the lab.

The addition of the ICP at the UK Soil Testing Lab at Princeton has allowed the soils lab to have confidence in knowing that their clients, whether homeowners or researchers, are receiving the best soil test results possible.

P. Howe, Lab Supervisor, Princeton Soil Lab

Kentucky Quality Dairy Producer Award

The Dairy Products Association of Kentucky (DPAK) will be presenting the Kentucky Quality Dairy Producer Award at the Kentucky State Fair Dairy Recognition Dinner in August. Last year's dinner was the highest attended dairy dinner on record and the awards ceremony was a great success. The purpose of the award is to recognize the Kentucky dairy producer who best portrays the production of high quality milk.

The 2004 award's criteria are to be based on producer data derived from April 1, 2003 through March 30, 2004. All nominees are required to possess valid permits from the Cabinet for Health Services, Milk Safety Branch throughout this period. Nomination forms should be postmarked or delivered to DPAK no later than June 15, 2004.

Applications may be submitted by producers themselves or by professionals who serve the dairy industry such as dairy field representatives, veterinarians, extension personnel, milk haulers and others. These individuals should work closely with producers to help ensure the accuracy of the information reported on the nomination form. Copies of the nomination form can be obtained at Regulatory Services Milk Program web-site (www.uky.edu/Agriculture/Regulatory_Services/welcome.html) or by contacting David Klee, Executive Director of DPAK, at (502) 867-7843.

Now is the time to start thinking about who you feel will be a good candidate for this prestigious dairy producer award. Be sure to nominate the Kentucky dairy producer who you feel best exemplifies the production of high quality, wholesome milk!

C. Thompson, Milk Regulatory Program

FOR THE MILLS

Labeling Your Custom Medicated Livestock Feeds

Some Kentucky firms have been using custom medicated labels provided by Regulatory Services for years; however, there may be mills within the state that could benefit from taking advantage of our services. Our inspection staff is equipped to assist Kentucky mills with custom medicated feed labeling. Each inspector can provide your firm with copies of commonly used custom mix medication labels. These labels can also be found on our website at: <http://www.rs.uky.edu/> and by clicking on feed then feed labels then medicated labels.

EXAMPLE:

Custom Mix Goat Feed MEDICATED	
Active Drug Ingredient: DECOQUINATE	
This feed contains ____ grams per ton decoquinatate. Grams per ton divided by 2 is equivalent to milligrams per pound.	
13.6 g/ton. (0.0015%) Feed at a rate to provide 22.7 mg/100 lbs (0.5 mg/kg) of bodyweight /day	For the prevention of coccidiosis in young goats caused by <i>Eimeria christenseni</i> and <i>Eimeria ninakohlyakimovae</i> .
13.6 – 535.7 g/ton. (0.0015 - 0.059%) Feed ____ lb./100 lb. of bodyweight/day to provide 22.7 mg/100 lb. (0.5 mg/kg) of bodyweight/day.	For the prevention of coccidiosis in young goats caused by <i>Eimeria christenseni</i> and <i>Eimeria ninakohlyakimovae</i> .
For a feed intake of 2 lb./100 lb. bodyweight, mix 22.7 grams of decoquinatate/ton of feed to provide 22.7 mg/100 lb. bodyweight/day.	
WARNING: Do not feed to goats producing milk for food. Feed for at least 28 days during periods of coccidiosis exposure or when experience indicates that coccidiosis is likely to be a hazard.	
Caution: Do not use in feeds containing bentonite.	
UK Regulatory Services – 8/03	

Mills can take advantage of this service by printing labels off our website or by copying labels received from your area inspector. All custom mix medicated labels follow the same basic design, as shown in the example. Just fill in the blanks (e.g. This feed contains ____grams per ton or Feed ____ lbs) and check the corresponding row that applies to the manufactured medicated feed. This is an effective way to quickly label medicated feeds. It is very important to remember you must also provide a label, invoice, delivery slip, or other shipping document bearing the following information:

1. Name and address of the manufacturer.
2. Name and address of the purchaser.
3. Date of sale or delivery.
4. The customer-formula feed name and brand name if any.
5. The product name and net quantity of each registered commercial feed and each other ingredient used in the mixture.
6. The direction for use.
7. The quantity statement.

T. Burden, Registration Specialist

Kentucky Milk Handlers Advisory Board Meeting

The mission of Regulatory Services' milk program is to ensure fair and accurate marketing of raw farm milk produced or marketed in Kentucky. Our primary function is to monitor "the system" from the time the producer's milk samples and weights are obtained; the milk is delivered, tested in the laboratory, and payments are calculated. A number of the groups participating in Kentucky's dairy industry are licensed and monitored to accomplish these objectives. In addition to our regulatory function, we regularly cooperate with other agencies and dairy groups in educational projects and we provide a number of services to Kentucky dairy producers and processors.

Our objective is to serve everyone involved in Kentucky's dairy industry. The Kentucky Farm Milk Handlers Law establishes an advisory board to contribute guidance on policy and programs necessary to implement and improve the milk program. The board met on December 16, 2003.

Advisory Board members in attendance included: Chair, Dr. Bill Silvia – Dairy Section Coordinator in the UK Animal Sciences Department, Kelly Thurman – dairy producer and chair of the Kentucky Farm Bureau Federation Dairy Committee, Lewis Ramsey – Manager of

the Kentucky Milk Safety Branch, Dairy producer representatives – Allen Phillips, Dave Robinson, and Billie Frank Williams, Dairy processor representatives – Meredith Scales and Steve Trauth, and Sampler-weigher representative – Tom Slayback.

Also in attendance were: Dr. Nancy Cox – Associate Dean for Research, Dr. Bill Crist – Extension Dairy Specialist, Eunice Schlappi – KY Department of Agriculture Dairy Marketing Specialist, and Regulatory Services representatives; Dr. Eli Miller – Director, Chris Thompson – Milk Coordinator, Bob Hickerson – Milk Inspector, Bob Kiser – Milk Lab Manager and Steve McMurry – Coordinator of Inspection Program.

Board members were provided updates regarding Regulatory Services overall programs, a report on Milk Program activities and reports from the Milk Safety Branch and UK's Dairy Science section. Dr. Nancy Cox gave an overall update on College of Agriculture activities including the College's recent merger with the College of Human and Environmental Sciences. She also presented a synopsis of the College of Agriculture's Strategic Plan for the future. Dr. Cox indicated that each unit of the College would be asked to develop a three-

continued on page 15



Pictured from left to right are: Bill Silvia, Eli Miller, Dave Roberts, Tom Slayback, Chris Thompson, Steve Trauth, Eunice Schlappi, Bill Crist, Allen Phillips, Bob Hickerson, Kelly Thurman, Meredith Scales, and Billie Williams (not pictured but also in attendance Dr. Nancy Cox, Bob Kiser, Steve McMurry and Lewis Ramsey).

2003 Inspection Program Activities

In order to achieve compliance with the consumer protection laws of Kentucky, the Division of Regulatory Services is mandated to inspect commercial feed, seed and fertilizer distributed within the state. Eight inspectors located throughout the state inspect agricultural manufacturers, distributors, and retailers while two inspectors sample retail establishments for specialty feed, seed, and fertilizer distribution. The Kentucky Farm Milk Handlers Law is also enforced by the Division of Regulatory Services. One full time, and four agricultural inspectors are assigned to the milk program.

Fertilizer Inspection Program

Regulatory Services inspectors conducted 1200 visits of fertilizer distributors while collecting 2600 official samples. Over half of those samples were bulk custom mixes going directly to the farm.

Feed Inspection Program

The Inspection staff conducted over 1700 feed inspections throughout the state. 3500 official feed samples were obtained to determine label accuracy by laboratory analysis. The feed program also has a contract with the Food and Drug Administration to conduct Good Manufacturing Practices (GMP) inspections. Under this past year's contract, the inspection staff conducted 10 GMP inspections and 77 BSE inspections. Sixty-one state GMP inspections were also conducted.

Seed Inspection Program

Over 1300 seed inspections were conducted last year at seed warehouses and retail establishments. 2250 official seed samples were obtained to determine purity, germination, and noxious weed seed evaluations. The field staff issued over 600 seed stop sale notices, mainly on seed that was out of test date.

Milk Inspection Program

The inspection staff made over 270 visits to raw milk receiving plants to monitor the marketing of raw farm milk. 628 sampler-weigher inspections were conducted during these visits. Over 5000 samples of raw farm milk, representing 27.99 million pounds of milk, were obtained for laboratory analysis of milk components for comparison purposes.

S. McMurry, Inspection Program

Feed and Fertilizer Laboratory News

A record number of canned pet food samples were received in the laboratory this January. More than 750 different materials were submitted for analysis. This provides more complete coverage in the state for these products to insure the quality and quantity are correct. This type of sample is high in moisture. The materials are processed in a team approach once the sample is opened and blended. This is the most efficient manner to perform many of the analytical tests that are required for these type samples. In addition to these, many other

pet food samples were received and will be submitted throughout the year. The lab processes dry foods, treats, and supplements for all types of pets. It is interesting to grind and mix materials that vary from meat strips to gummy treats. Every sample must be homogenous because only a small portion, just a few grams or less, is used for the testing.

Recently, the laboratory work has been improved by the implementation more effective data acquisition and processing programs.

continued on page 18

Expanded “Mad Cow” Safeguards Announced to Strengthen Existing Firewalls Against BSE Transmission

On Monday January 26, 2004, Health and Human Services (HHS) Secretary Tommy G. Thompson announced several new public health measures, to be implemented by the Food and Drug Administration (FDA), to strengthen significantly the multiple existing firewalls that protect Americans from exposure to the agent thought to cause bovine spongiform encephalopathy (BSE, also known as mad cow disease) and that help prevent the spread of BSE in U.S. cattle.

The existing multiple firewalls, developed by both the U.S. Department of Agriculture (USDA) and HHS, have been extremely effective in protecting the American consumer from exposure to BSE. The first firewall is based on import controls started in 1989. A second firewall is surveillance of the U.S. cattle population for the presence of BSE, a USDA firewall that led to the finding of the BSE cow in December. The third firewall is FDA’s 1997 animal feed ban, which is the critical safeguard to help prevent the spread of BSE through cattle herds by prohibiting the feeding of most mammalian protein to ruminant animals, including cattle. The fourth firewall, recently announced by USDA, makes sure that no bovine tissues known to be at high risk for carrying the agent of BSE enter the human food supply regulated by USDA. The fifth firewall is effective response planning to contain the potential for any damage from a BSE positive animal, if one is discovered. This contingency response plan, which had been developed over the past several years, was initiated immediately upon the discovery of a BSE positive cow in Washington State December 23.

New safeguards being announced are science-based and further bolster these already effective safeguards. The science, experience, and knowledge in this area are constantly evolving. Small as the risk may already be, this is the time to make sure the public is protected to the greatest extent possible.

Specifically, HHS intends to ban from human food (including dietary supplements), and cosmetics a wide range of bovine-derived material so the same safeguards protecting Americans from exposure to the BSE agent through meat products regulated by USDA also apply to food products that FDA regulates.

FDA will also prohibit certain currently allowed feeding and manufacturing practices involving feed for cattle and other ruminant animals. These additional measures will further strengthen FDA’s 1997 “animal feed” rule.

FDA Commissioner Mark B. McClellan noted that “FDA is further strengthening our animal feed rule, and we are taking additional steps to further protect the public from being exposed to any potentially risky materials from cattle. FDA’s vigorous inspection and enforcement program has helped us achieve a compliance rate of more than 99 percent with the feed ban rule, and we intend to increase our enforcement efforts to assure compliance with our enhanced regulations. Finally, we are continuing to assist in the development of new technologies that will help us in the future improve even further these BSE protections. With today’s actions, FDA will be doing more than ever before to protect the public against BSE by eliminating additional potential sources of BSE exposure.”

To implement new protections, FDA will publish two interim final rules taking effect immediately upon publication in the Code of Federal

continued on pg. 14

Emphasis to Prevent Recurring Sampler-Weigher Violations

One of the most visible activities administered by the Milk Program is our sampler-weigher inspection activity. The purpose of the sampler-weigher inspection program is to monitor basic milk hauling procedures to:

- Ensure dairy producers are paid on accurate weights and tests,
- Ensure that processors are billed properly, and
- To protect legitimate haulers from having to compete with haulers who may take non-compliant shortcuts.

A number of factors contribute to the visibility of sampler-weigher inspections. First, we license around 350 sampler-weighers each year. This is by far the largest category of individuals licensed by our agency. Due to this large number, we conduct more sampler-weigher inspections than any other types of inspections. Additionally, each time a sampler-weigher inspection is conducted, the sampler-weigher and each organization involved with the load of milk receives a copy of the inspection report. These organizations include hauling companies, milk receiving stations, coops and other handlers.

Kentucky dairy producers receive correspondence relating to most sampler-weigher inspections. When a sampler-weigher achieves an acceptable evaluation, it is a rational assumption that each producer's weight is accurate and the sample is representative. Each Kentucky producer whose milk is included on the load is informed of their farm's milk weight and test for that day's pick-up. This information is provided to Kentucky producers to furnish them with information to compare with their pay records. This correspondence also serves as a means to better inform producers of our overall Milk Program activities.

The inspection program evaluates a sampler-

weigher's performance by making a weighted average butterfat comparison between the group of producer samples making up the load of milk and the truck's load sample. Sampler-weighers who follow accurate hauling procedures at each farm pick-up should readily achieve an acceptable evaluation. A primary goal of our sampler-weigher inspection program is to monitor licensed Kentucky sampler-weighers at their customary delivery locations on a quarterly basis. The frequency of inspections for each individual may vary slightly depending upon the number of plants they regularly deliver milk to and whether or not the individual is a "full-time" driver. We also monitor milk imported into Kentucky by periodically inspecting out-of-state sampler-weighers.

Over the past four years, the number of unsatisfactory or "D Grade" evaluations has remained relatively stable at around 10% of our total number of inspections. Of these "D Grade" violations, over 40% are attributed to individuals who have more than two "D Grades" within this four year period. A portion of these repeat violations can be attributed to follow-up inspections being conducted on poor performers. Further evaluation of this data reveals that ten sampler-weighers contributed to over 20% of the violation rate for this time period.

What this means is:

- Most licensed sampler-weighers are utilizing accurate and compliant milk hauling procedures.
- Conducting follow-up inspections on poor performers tends to inflate the number of violations, but most sampler-weighers improve their performance on subsequent inspections.
- A limited number of sampler-weighers contribute to the majority of the "D Grade" evaluations.

continued on page 19

Fertilizer Labeling Tips or How to Succeed in Drafting an Acceptable Fertilizer Label

Part IV Labeling and Acceptable Fertilizer Claims

The Definition

In the three previous articles I discussed the “label” which is defined as the display of all written, printed, or graphic matter upon the immediate container; or, a statement accompanying a fertilizer. The purpose of this discussion is to discuss “Labeling”.

The Kentucky fertilizer law has the following definition: “Labeling” means all written, printed, or graphic matter, upon or accompanying any fertilizer, or verbal statements, advertisements, brochures, posters, television or radio announcements used in promoting the sale of the fertilizer. “Labeling” covers not only what is on the label but also just about any means used to sell or promote the sale of a fertilizer.

The Claim

There is no official definition of “claim” but it is generally taken as an assertion made about or for a fertilizer. The rule usually followed is: “If you claim it then you must either guarantee it or provide scientific data to support it”. Label review requires the reviewer to evaluate not only the label but also the labeling.

Following are some specific claims that have been observed on fertilizer labeling accompanied by my comments.

Acceptable Claims

“All Organic Nitrogen”

This claim requires that at least 60% of the Total Nitrogen guarantee to be Water Insoluble Nitrogen (WIN). For example, if the total nitrogen guarantee is 10% then the WIN must be at least 6%.

“Organic Based”

An organic based fertilizer is a mixed fertilizer where more than half of the fertilizer materials is organic and where more than half of the sum of the guaranteed primary nutrient percentages is derived from organic materials. We would require the registrant to provide the fertilizer formula to verify this claim. In addition there must be a WIN guarantee of at least 15% of the total nitrogen guarantee.

“Natural Based”

A natural based fertilizer is a mixed fertilizer where more than half of the fertilizer materials is natural and where more than half of the sum of the guaranteed primary nutrient percentages is derived from natural materials. We would require the registrant to provide the fertilizer formula to verify this claim.

“This Bag Covers XXXX thousand square feet”. This claim appears on many lawn fertilizers and to be acceptable the coverage must be such that one (1) pound of N is applied per 1000 square feet per season. A lawn typically needs from 1-4 pounds of N per growing season for normal growth; therefore, coverage of less than 1 pound of N per 1000 square feet of lawn is considered misleading. This establishes a general standard of coverage claims for lawn fertilizers.

“Complete Fertilizer”.

This claim is acceptable only if the fertilizer label guarantees **all** 15 recognized essential nutrients. The term formerly was used to designate a fertilizer with NPK only but it no longer has that limited meaning.

“Chelated Micro-nutrients”

When claimed, the chelating agent must be listed in the ingredient statement and the percentage chelated guaranteed. For example, if copper is claimed to be chelated, the guarantee would look like this:

Copper (Cu).....0.10%
0.1% Chelated Copper
Derived from: Copper EDTA

“Contains micro-nutrients”

Unless at least two micro-nutrients are guaranteed this claim would not be acceptable. If you claim it you must guarantee it.

“Lasts all season”.

Unless there is a guarantee for a slowly available nutrient this claim would not be acceptable. In addition to the required slow release guarantee, the registrant may be required to supply scientific documentation that the nutrient “last all season”.

“Contains Non-Plant Food Ingredients”

The fertilizer law allows “other beneficial substances” to be on a fertilizer label provided there is (a) a guarantee and an analytical method for analyzing them and (b) scientific data to substantiate their beneficial effects.

For example, the claim for the presence of Vitamin B₁ would require a guarantee, a method for analyzing for it in the product, and scientific data to substantiate that it is beneficial as recommended.

Unacceptable Claims

“Balanced Fertilizer”

Since “balanced” has no official definition and its meaning is ambiguous it is not acceptable in fertilizer labeling.

“50% Organic Nitrogen”

The term percentage by symbol or word when used on a fertilizer label shall represent only the amount of individual plant nutrients in relation to the total product by weight. Since “percentage” can be very misleading unless you clearly state the “base” of the percentage, its use on fertilizer labeling is restricted to the plant nutrients and the base is the “weight” of the fertilizer.

“Makes 30 gallons of fertilizer”

Since the dilution factor determines the amount of a diluted fertilizer one can make, this claim is considered misleading and not allowed. There is no standard dilution and no standard concentration for a diluted fertilizer; therefore, this prohibition prevents companies from claiming that their product makes more gallons than a competitor’s.

continued on page 18

BSE Safeguards *(continued from page 10)*

Regulations (**CFR**), although there will be opportunity for public comment after publication.

The second interim final rule is designed to lower even further the risk that cattle will be purposefully or inadvertently fed prohibited protein. It was the feeding of such protein to cattle that was the route of disease transmission that led to the BSE epidemic in United Kingdom cattle in the 1980's and 1990's.

This interim final rule will implement four specific changes in FDA's present animal feed rule. First, the rule will eliminate the present exemption in the feed rule allowing mammalian blood and blood products collected at slaughter to be fed to other ruminants as a protein source. Recent scientific evidence suggests that blood can carry some infectivity for BSE.

Second, the rule will also ban the use of "poultry litter" as a feed ingredient for ruminant animals. Poultry litter consists of bedding, spilled feed, feathers, and fecal matter that are collected from living quarters where poultry is raised. This material is then used in cattle feed in some areas of the country where cattle and large poultry raising operations are located near each other. Poultry feed may legally contain protein that is prohibited in ruminant feed, such as bovine meat and bone meal. The concern is that spillage of poultry feed in the chicken house occurs and that poultry feed (which may contain protein prohibited in ruminant feed) is then collected as part of the "poultry litter" and added to ruminant feed.

Third, the rule will ban the use of "plate waste" as a feed ingredient for ruminants. Plate waste can consist of uneaten meat and other meat scraps that are currently collected from some large restaurant operations and rendered into meat and bone meal for animal feed. The term "plate waste" encompasses food processing

waste and restaurant food waste as defined in the Association of American Feed Control Official's (AAFCO) Official Publication. The use of "plate waste" confounds FDA's ability to analyze ruminant feeds for the presence of prohibited proteins, compromising the Agency's ability to fully enforce the animal feed rule.

Fourth, the rule will further minimize the possibility of cross-contamination of ruminant and non-ruminant animal feed by requiring equipment, facilities or production lines to be dedicated to non-ruminant animal feeds if they use protein that is prohibited in ruminant feed. Currently, some equipment, facilities and production lines process or handle ruminant and non-ruminant feed - a practice, which could lead to cross-contamination.

To accompany these new measures designed to provide a further layer of protection against BSE, FDA announced that it will in 2004 step up its inspections of feed mills and renderers. FDA will itself conduct 2,800 inspections and will make its resources go even further by continuing to work with state agencies to fund 3,100 contract inspections of feed mill and renderers and other firms that handle animal feed and feed ingredients. Through partnerships with states, FDA will also receive data on 700 additional inspections, for a total of 3,800 state contract and partnership inspections in 2004 alone, including annual inspections of 100 percent of all known renderers and feed mills that process products containing materials prohibited in ruminant feed.

FDA is also continuing efforts to assist in development of better BSE science, to achieve the same or greater confidence in BSE protection at a lower cost. For example, to enhance the ability of our public health system to detect prohibited materials in animal feed, FDA will

continued on page 15

Milk Handlers Advisory Board Meeting *(continued from page 8)*

year plan. She emphasized the importance of the Advisory Board's input into Regulatory Services' plan.

At the conclusion of the scheduled presentations, a roundtable discussion transpired regarding future goals for the milk program. A central theme for an immediate future goal focused on lowering the number of "C" (poor) and "D" (unsatisfactory) Grade inspections attained by licensed sample-weighers. After considerable discussion, the Board recommended that Regulatory Services develop and distribute educational signage that outlines proper milk sampling and weighing procedures. These signs are to be widely distributed to dairy producers, receiving stations and other areas where sample-weighers routinely perform work. Additionally, the Board recom-

mended that Regulatory Services notify producers on a sampler-weigher's milk route if the sampler-weigher receives three "D" Grade violations within a one-year period. These recommendations will be covered more thoroughly in another article within this newsletter.

The Advisory Board is one of the main avenues for the milk program to remain informed of Kentucky's dairy industry needs and concerns. Advisory Board input assists Regulatory Services in our effort to provide better service to Kentucky's dairy industry. If you have questions or comments concerning the milk program, feel free to discuss them with members of the Advisory Board or contact Chris Thompson, Coordinator of the Milk Program at (859) 257-2785 or by e-mail at cthompso@uky.edu.

C. Thompson, Milk Regulatory Program

BSE Safeguards *(continued from page 14)*

continue to support development and evaluation of diagnostic tests to identify prohibited materials. These tests would offer a quick and reliable method of testing animal feeds for prohibited materials and for testing other products for contamination with the agent thought to cause BSE.

For additional information on BSE or other regulatory issues please visit the Division's website <http://www.rs.uky.edu/feed/index.html>. The site has links to USDA, FDA, and AAFCO.

S. Traylor, Feed Regulatory Program

Service Awards

Many Regulatory Services employees received awards last year for service to the University of Kentucky.

Cindy Finneseth, Brad Johnston, Robert Miller and Charlie Potter received recognition for more than five years of service and Tony Bengé was recognized in the 10 year category. Cathy Buckingham, David Mason, Garland McKee and Debbie Morgan were each recognized with more than 15 years of service.

A special awards reception was held to recognize employees with 20 or more years of service to UK. Regulatory Services employees in this group included Ed Hill who works in the Soils Lab at Princeton and has been with UK for more than 20 years. Dewey Coffee, an inspector in south central Kentucky was recognized as having more than 30 years of service with the University, as was Charlene Vest in the data processing area.

Seed Labeling *(continued from page 3)*

correct variety has to be clearly stated. Use of a brand designation and the term "Variety Not Stated" is not permitted in Kentucky.

Mislabeled products of this nature are also noted in grasses and forages. Proper variety names are required if they are known, and if unknown, use of the term "Variety Unknown" is permitted in Kentucky. All of these problems require the seed lot to be relabeled. The 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 to have been delivered without any labeling, or with labels left at the dealer but not attached to the containers. In the case of certified seed, my instruction to the inspection staff is to seize and return these labels to my office for return to the appropriate seed certification agency. Certified labels can only be attached by an approved certified seed processor, an agent of the Kentucky Seed Improvement Association, or an agent of the certification agency where the seed originated. Seed containers (usually bags) without attached seed tags and no form of lot number identification placed on the container cannot be labeled until a sample is obtained and a complete seed analysis test is completed. All of these actions require time.

Seed lots that have been treated require a

proper treatment statement and the statement required is determined by the seed treatment. Seed treatments are required to be identified, as some of these treatments may be harmful to personnel handling them in addition 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 the 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 everyone involved in the process a considerable amount of time. If an action to stop the seed lot has to be 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 a lot more time, but mailing is also acceptable if timely release is not a consideration. We will make every effort to accomplish the release as soon as possible. If you encounter problems with the process, please call our office at 859-257-7363.

D. Buckingham, Seed Regulatory Program

Retirement Celebration *(continued from front page)*

Val, retired Coordinator of the Feed and Fertilizer Lab, began his career at UK Regulatory Services in 1945 and retired in 1983. He hired Sue in February, 1965 shortly after her graduation from Berea College. Sue is an extremely talented and professional laboratory chemist. In the 30 years I worked with her, I do not recall one time that she reported a feed analysis that was incorrect. She took great pride in her ability to accurately test feed. We will miss her proficiency and experience in performing drug, mycotoxin and other testing and our daily interaction with her. She is one of many special people that our Division has been fortunate to have as long-term employees.

Eli Miller, Director

Feed Mix Uniformity (continued from page 5)

for diet uniformity depending on method used for analysis; e.g., results for the high uniformity treatment ranged from 9.7 to 22.8 % for salt concentration vs sodium concentration, respectively.

Table 1. Effect of mixing time on diet uniformity in a typical broiler diet¹

Item	Revolutions			SE	Linear	Quadratic
	5	20	80			
Salt CV, %	40.5	12.1	9.7	3.4	.001	.001
Red particle CV, %	53.4	16.6	11.3	4.0	.001	.001
Blue particle CV, %	53.9	17.0	10.6	3.5	.001	.001
Sodium CV, %	44.5	23.2	22.8	3.1	.001	.001

¹Adapted from McCoy et al. (1994).

Table 2. Interpretation of Mixer Tests

Percent Coefficient of Variation (CV)	Rating	Corrective Action
<10%	Excellent	None
10-15%	Good	Increase mixing time by 25–30%
15-20%	Fair	Increase mixing time 50%, look for worn equipment, overfilling, or sequence of ingredient addition
>20%	Poor	Possible combination of all the above. Consult extension personal or feed equipment manufacturer.

¹Adapted from Herrman and Behnke (1994).

The average nutrient concentration (mean) and variation between samples (standard deviation) are calculated to arrive at a single value described as the coefficient of variation (CV). Calculation of CV is straight forward and most computer spreadsheet programs will perform the calculations. The CV ($CV (\%) = \text{Standard Deviation} \div \text{Mean} \times 100$) is calculated by dividing the Standard Deviation by the Mean and multiplying the result by 100. More detailed information can be found on the Feed Program website (www.rs.uky.edu/feed/quality.html).

A CV below 10 percent is considered a good mix in most animal feeds. Variation in the assay procedure may be as high as 5 to 6 percent, indicating that the actual variation due to mixing is about 5 percent. Table 2 illustrates the corrective actions that should be taken if the CV is greater than 10%. The most common corrective actions are to increase the mix time, inspect the system for mechanical problems, and check ingredient additions and sequencing.

S. Traylor -- Feed Regulatory Program

Fertilizer Labeling Tips *(continued from page 13)*

“10-15-15-6Ca”

This is a fertilizer grade with an extraneous number at the end. The grade is the minimum guarantee of available plant food expressed in terms of total nitrogen, available phosphate and soluble potash. The numerals for nitrogen (N), available phosphate (P_2O_5), and soluble potash (K_2O), appearing as the grade must coincide with the guaranteed analysis statement. No numeral shall be used in the grade of a fertilizer except those referring to Total Nitrogen (N), Available Phosphate (P_2O_5), and Soluble Potash (K_2O). The “-Ca” must be deleted for this to be acceptable.

“One gallon of this liquid has as much plant food as 100 pounds of a dry fertilizer”

This claim makes an erroneous and misleading comparison between liquid and dry fertilizers. The comparison must be on pounds of plant nutrients in each because there is no scientific data to substantiate that the nutrients in a liquid fertilizer are any better or more available than those in an equivalent amount of dry fertilizer.

“Makes your plants healthy”

A fertilizer is not a pesticide and claiming that a fertilizer makes a plant healthy could be interpreted as a pesticidal claim. We recommend using “vigorous” instead of “healthy” or modifying the claim to “helps” or “promotes” healthy plants.

Summary

Claims on fertilizer labels and labeling are regulated by the fertilizer law. They must be stated carefully with regard to accuracy and must not be misleading. Remember the cardinal rule: If you claim it you must guarantee it or provide scientific data to substantiate it.

D. Terry, Fertilizer Regulatory Program

Feed, Fertilizer Lab Update *(continued from page 9)*

The analysts are using up-to-date software programs for weighing samples. Laboratory personnel developed and implemented these new spreadsheets. The sample weights are automatically read from a balance and combined with guarantees and other information about the sample. This data can be easily transferred electronically using the new software spreadsheets implemented in 2003. This has improved and will provide future improvements in the laboratory efficiency and productivity. Data is readily sent to instruments and can be exchanged with our database systems. There are several other projects under way to improve the laboratory analyses

involving instruments, software, and automated devices. These will be subjects in future newsletters.

There have been some changes our laboratory staff over the past few months. We are happy to have several new people in the laboratories. They are very capable and knowledgeable. Mischelle Dean and Paul Wilson are working in the sample receiving and preparation laboratory. Paul was promoted from the fertilizer potash position to his new position. Karen Meekins is working in the feed drug/mycotoxin laboratory. Karen has worked for several years at UK in the College of Agriculture and

continued on page 19

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