# Regulatory Services News

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## Division's Response to Pet Food Recall

As part of its ongoing service mission to monitor animal feed quality in Kentucky, the University of Kentucky Division of Regulatory Services has taken several steps to protect consumers who buy pet food. These steps have included increased canvassing of pet food distribution and communication with retailers and the public.

The U.S. Food and Drug Administration recently announced that some lots of imported wheat gluten and rice protein concentrate were contaminated with melamine, a product used in plastics manufacturing. As a result, a nationwide recall of certain brands of pet foods containing these contaminated ingredients has been issued; more than 150 brands are now on the recall list.

We have been in communication with FDA several times a week in an effort to stay updated. The inspection staff has increased visits to smaller pet food retailers and distributors that have a regional or limited marketing area such as convenience stores, gas stations, and "dollar" stores. In addition, a press release was issued through UK's Agricultural Communications Services on April 25, 2007 to advise Kentuckians who regularly purchase dog and cat food to stay aware of the latest information as it becomes available. We have also added a direct link to the FDA Web site on our homepage.

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**What's inside….**



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**Pet Food Recall**
*continued from front page*

If manufacturers or dealers are asked questions related to this recall we suggest that they direct the person to FDA's website for the latest information. You could also assure them that the number of products on recall only represents about 1% of that in the marketplace and everyone involved is working diligently to remove and secure all products on the recall list. As a result, individuals should be discouraged from preparing their own pet food because expertise in cat and dog nutrition is important in producing a complete and balanced feed.

UK Division of Regulatory Services will continue in-state monitoring of retailer compliance with FDA pet food recalls.

*F. Jaramillo — Feed Regulatory Program*

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## Handbook On Seed Sampling Now Available

The Association of American Seed Control Officials (AASCO) *Handbook On Seed Sampling* is now available. The AASCO handbook presents methods, guidelines and equipment for both regulatory and industry applications to uniformly obtain representative seed samples for laboratory testing. The intent is to provide a broadly adaptable format to all seed sampling situations so that the resultant laboratory analysis accurately reflects the quality of the seed lot.

**Topics covered include:**

Procedures for Sampling Seed with a Trier
Selecting and Using a Trier
Procedures for Sampling Seed Without a Trier
Special Sampling Instructions
Preparation of the Composite Sample
Quality Assurance
Safety and Health
Sampling Mini-Bulk Containers
Recommended Sample Size
Equipment and Supplies
Recommended References and On-Line Resources
Recommended Maximum Lot Size
Recommended Forms to Record Seed Sampling

The *Handbook On Sampling Seed* is an excellent reference that describes use of proper sampling procedures, correct sampling equipment, and many other topics that relate to obtaining a representative sample. Information on ordering the handbook can be obtained from the AASCO website, www.seedcontrol.org.

*D. Buckingham — Seed Regulatory Program*

# Tracking Down Dairy Herd Fat Test Variability

At the milk program, our goal is to ensure accurate marketing of producer milk through the use of accurate weights, samples and tests. We operate a number of monitoring programs to ensure that activities impacting each of these items are performed in an appropriate manner. Because of our work, we often receive calls from dairy producers who have questions regarding the variability of herd fat tests. Depending on whom you ask, the primary source of fat variability can range among a variety of sources. The truth is… there are many, many sources of herd fat variability. Some are due to biological factors, others are not.

Let's review some of the "suspects" that may or may not be contributing to herd fat test variability. We'll begin with some of the more commonly known contributing factors and work our way towards items that might not immediately come to mind.

**Breed**

Producers readily recognize that the breed of animals making up their herds can significantly impact herd fat tests. Note the estimated fat values seen among common dairy breeds.

| Breed | Fat |
|---|---|
| Ayrshire | 3.88 |
| Brown Swiss | 3.98 |
| Guernsey | 4.46 |
| Holstein | 3.64 |
| Jersey | 4.64 |

*Source: Texas A & M Bulletin L-5388 December 2000*

**Genetics**

Genetic trait selection tends to emphasize milk yield traits, however, fat yields should not be overlooked. Breeding and selection programs have been shown to have impacts on fat yields.

**Season**

Fat tests tend to drop in the spring and rise in the fall. These variations are due to a number of factors but cow comfort and the fact that many feeding programs provide more roughage type feeds in the fall are significant contributors to this variability.

**Production**

Usually an increase in milk production results in a decrease in fat % and vice versa. But always remember to monitor total pounds of fat produced. Often, an increase in production can more than offset a drop in fat % when evaluating total pounds of fat produced. For example:

| Total pounds milk produced | Fat % | Total pounds fat produced |
|---|---|---|
| 10,000 | 3.50% | 350 |
| 12,000 | 3.30% | 396 |

**Lactation stage**

Generally, the amount of milk produced decreases and the fat test increases as the lactation period progresses.

**Month of freshening**

Cows that calve from August to November tend to test higher in fat on the lactation average than cows that freshen February through May.

**Herd health and age**

Health problems (including mastitis) will cause stress for the cow and can have varying effects on the fat test. The age of an individual cow will not have much impact on the overall herd test but her individual fat test may tend to decline from the first to the fifth lactation.

**Body condition**

Cows that "freshen in" and have a good body condition score will tend to have a higher fat test.

**Cow comfort**

All types of factors impact cow comfort; overcrowding, stall design, cooling systems, etc. Comfortable cows spend more time chewing their cud. Cud chewing produces more saliva which serves as a buffering agent in the rumen and can help prevent acidosis which lowers the fat test.

*Continued on page 4*

## Tracking Down Herd Fat Variability

*continued from third page*

**Nutrition**
Nutritional problems can cause fat depressions. Dairy cows need a good balanced ration along with an adequate supply of roughage and water. A knowledgeable nutritionist should be consulted to help determine if fat test variability is due to herd nutrition.

**Milking intervals**
Differences in AM and PM: evening milkings tend to test higher in fat than morning milkings due to the shorter intervals between milkings.

**Milking procedures and inadequate milk let down or "milk out"**
Milking practices that impact fat test results include changing milking intervals, insufficient vacuum, poorly operating equipment or poor milking methods. Incomplete milk letdown and milk out also impact fat tests. The first milk from the udder has a lower fat content (1-2%) than the last milk obtained during milk out (up to 7-9%).

**Irregular milk pick-ups**
Some producers have expanded their herds without updating their bulk tank system. This can result in the need for multiple pickups per day which can lead to fat test variability. For instance, if the morning and evening milkings are picked up separately, fat test variability would be expected. Fat tests will also vary for herds with 3X (3 times per day) milkings if the milkings are co-mingled inconsistently. As an example, if we identify a 3X herd's milking as 1st, 2nd and 3rd with each milking being picked up separately, then variability among these milkings should be expected. Likewise, if pick ups are staggered i.e. 1st and 2nd for one pick up, followed by 3rd and 1st… and 2nd and 3rd milkings on subsequent pick ups, variability should be expected as well.

**Now let's look at a few factors that should <u>not</u> have an impact a herd's fat test.**

**Tank maintenance and agitation**
Milk agitation is extremely important. Proper agitation ensures a homogenous mixture of milk for more accurate sampling as well as enhanced cooling. Generally, tanks less than 1,000 gallons should be agitated a minimum of 5 minutes while tanks 1,000 gallons or larger should be agitated 10 minutes. Tanks with agitation timers tend to have fewer sampling and cooling problems. These timers are inexpensive compared to the potential for lost income due to poor sampling or cooling problems. Producers should always ensure that all agitators are operating properly.

**Use of multiple bulk tanks**
As herds have grown, many producers have added an extra tank to their milkhouses. Tests will vary between two tanks on any given farm. To minimize this variability, producers are encouraged to use consistent milking and tank filling practices. For example, to ensure similarity of tests, put a morning and evening milking in each tank if at all possible. Also, milk from different strings of cows should not be moved from one tank to another. This practice will most definitely result in fat test variations. Producers can help their milk hauler out in this area by ensuring that each farm tank has an adequate supply of bar code labels. Milk buyers should be promptly notified if labels are in short supply. Ensuring an adequate supply of labels for each tank on the farm goes a long way towards making sure each tank is accurately identified.

**Milk sampling procedures**
Milk haulers and other individuals who sample milk are trained and licensed and should always follow proper procedures. This includes using an approved sampling device and allowing for adequate agitation. Milk samples must also be adequately identified and properly stored in ice and water.

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## Tracking Down Herd Fat Variability

*continued from fourth page*

As stated earlier, sample identification is always important, but it is especially a concern when producers utilize more than one bulk tank.

**Laboratory**

Milk testing labs typically utilize rigid quality control programs to ensure fat test accuracy. Most payment labs use electronic instruments for fat as well as other component testing, which enables the testing of large volumes of samples. These instruments are carefully calibrated against approved chemical reference methods to ensure accuracy.

Payment labs are licensed and regularly monitored by regulatory agencies. Regulatory Services' representatives regularly visit these labs to evaluate laboratory records and to ensure proper milk testing procedures. A monthly "check sample" program is also used to ensure accurate testing procedures at the licensed labs.

Identifying the source of a producer's fat test variability is not always an easy task. Often the source may be traced back to more than one cause. It is important to not jump to conclusions when investigating herd fat variation. We hope the identified items can assist in your investigations.

At Regulatory Services, we put forth considerable efforts to ensure that milk samples are: accurately identified and properly obtained, properly stored and transported, analyzed properly at the laboratory, and that sample records are compiled accurately for payment purposes.

All the same, we understand there will always be producer concerns regarding fat test variability. Because of that, if a producer you are working with ever has additional questions regarding fat test variability, please do not hesitate to contact us.

*C. Thompson — Milk Regulatory Program*

## Outstanding Alumnus Award

Letha Tomes Drury was recently recognized for her contributions to the Kentucky seed industry and was presented with the Outstanding Alumnus Award at the annual University of Kentucky Gamma Sigma Delta banquet in March.

Letha is a 1984 graduate in Seed Biology in the Department of Agronomy at the UK College of Agriculture. She is a native of Edmonson Co. and received her B.S. degree from Western Kentucky University. Her M.S. research under the direction of Dr. Dennis TeKrony, focused on the identification of important variables in seed vigor testing. She was able to standardize parameters including equipment, environmental conditions and sample weight that eventually led to the acceptance of the Accelerated Aging (AA) vigor test for soybeans by the International Seed Testing Association (ISTA). AA testing of soybeans is now a routine test in most seed testing laboratories across the United States and other countries which provides valuable seed quality information to seed companies and producers.

*Letha Drury, Kentucky Foundation Seed, and Dr. Dennis TeKrony, Professor, UK Department of Plant and Soil Sciences*

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# Current AAPFCO Approach to Fertilizer Sales Data Collection

The most accurate and creditable fertilizer use data in the U.S. are generated by the fertilizer regulatory programs in each state. Each state with a fertilizer law, with two exceptions, has a requirement of reporting fertilizer tonnage. There are two main purposes for the reports: (1) to generate income to support the regulatory program and (2) to reveal the kinds and amounts of fertilizers being distributed in the state. The basis of the collection of these data in all the states is the Model Fertilizer Bill developed and promoted by the Association of American Plant Food Control Officials (AAPFCO); and, its associated Uniform Fertilizer Tonnage Reporting System (UFTRS).

The objective of this article is to describe AAPFCO's UFTRS. I will do this by (1) briefly reviewing the history of the system, (2) describing how the system works and demonstrating the UFTRS program, (3) outlining the characteristics and warning of the problems associated with the data, and (4) mentioning the value of the data.

Historical Perspective

*Tonnage Reporting Beginnings*

Fertilizer tonnage reporting has been around over 100 years and has progressed significantly since the early beginnings being required by almost all state fertilizer laws. New Jersey reported first in 1882 followed by Indiana in 1883 and 36 states were making some kind of tonnage report by 1945[1]. The 4th draft of the AAPFCO Model State Fertilizer Bill that was published in the first Official Publication of the Association of American Fertilizer Control Officials had a requirement for reporting tonnage. It required semiannual reporting of tonnage by grade[2].

The current Uniform State Fertilizer Bill of AAPFCO has a very similar tonnage reporting requirement[3].

Section 7 (c)

> "When more than one person is involved in the distribution of a fertilizer, the last person who has the fertilizer registered (is licensed) and who distributed to a non-registrant/licensee dealer, or consumer is responsible for reporting the tonnage and paying the inspection fee, unless the report and payment is made by a prior distributor of the fertilizer." (*Inspection Fee Report*)

Section 8 (a)

> "The person distributing or selling fertilizer to a non-registrant/non-licensee shall furnish the _____ a report showing the county of the consignee, the amounts (tons) of each grade of fertilizer, and the form in which the fertilizer was distributed (bags, bulk, liquid, etc.)." (*Detail tonnage report*)

In the very first annual meeting of the Association of American Fertilizer Control Officials now known as AAPFCO, one of the papers presented was 'The Use of Fertilizer Tonnage Data' by J. F. Fudge of College Station Texas. Some of his comments are as appropriate today as they were 60 years ago. He noted that tonnage reports allow the determination of: (1) the consumption of N, $P_2O_5$, and $K_2O$, (2) the most popular grades and materials, (3) the ratio of mixtures to materials; and, (4) trends in fertilizer use when followed over several years[4]. Another important aspect of tonnage reporting is the collection of an inspection fee that goes to support the regulatory program.

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[1]Official Publication, 1947, No. 1, Association of American Fertilizer Control Officials (Fudge Paper)
[2]Official Publication, 1947, No. 1, Association of American Fertilizer Control Officials (p7 of Model Bill)
[3]Official Publication, 2007, No. 60, Association of American Plant Food Control Officials (p31)
[4]Official Publication, 1947, No. 1, Association of American Fertilizer Control Officials

## Current AAPFCO Fertilizer Approach

*continued from sixth page*

*Uniformity Beginnings*

No discussion of the tonnage reporting requirement of AAPFCO's Model Fertilizer Bill would be complete without mentioning its Uniform Fertilizer Tonnage Reporting System (UFTRS). As soon as tonnage reporting was discussed the need for uniform reports among the states was cited as very important by the fertilizer industry.

The initiative for developing uniformity in tonnage reporting came in 1964 when W. L. Baker of MO, President of AAPFCO, appointed a committee to begin the work for a uniform system[5]. In 1965 the AAPFCO passed a resolution supporting a uniform tonnage reporting system and in 1967 the committee recommended a standard format for the data and a monthly-county-invoice system[6]. With some slight modification that format is the same as currently recommended under the UFTRS. Of course, the ADP equipment at that time was the mainframe IBM computer that used 80 column punched cards. Nevertheless, the standardization of how companies should report their tonnage to the control official was a boon to accurate and timely tonnage reports. USDA, NPFI (National Plant Food Institute-now TFI), NASDA (National Association of State Departments of Agriculture), and the Association of Southern Feed, Fertilizer, and Pesticide Control Officials immediately endorsed and AAPFCO began to promote the system soon after its adoption.

That is the beginning of the UFTRS and it remained basically the same until the development of the UFTRS computer program for IBM PC's. The first version of the UFTRS software was a DOS program released in 1986[7]. The program has now been converted to a Windows based system and currently there are about 34 states utilizing the UFTRS software as their tonnage reporting engine. With that background on how UFTRS came into being let's look at the system in detail.

UFTRS Data[8]

The data required by the Model Bill include: period (month, quarter, etc. ), county, amount (tons), the grade (analysis), and form of distribution (bag, bulk, fluid); therefore, these are the major fields in the UFTRS database. Other information requested includes use (farm, non-farm) and fertilizer material codes.

See Fig. 1-3 in the Appendix.

Characteristics of and Problems Associated with the Data

*Sales vs. Use*

To interpret the "sales" data as "use" data we must ***assume*** that the "last" registrant/licensee is most likely selling to a "dealer" who will sell to the ultimate consumer; or, is selling directly to the ultimate consumer. Therefore, since most states follow this model, we may discuss the tonnage reported as "use" or "consumption" of fertilizer in the state. However, we must always be aware of this assumption. This assumption is somewhat validated when we see "negative" tonnage reported. This occurs when a registrant reports sales to a "dealer" who subsequently does not sell the fertilizer and returns it to the registrant for credit. The registrant in turn reports the returned fertilizer to the state for inspection fee credit.

*Materials vs Mixtures and Duplicate Reporting*

Questions about the interpretation of the data of materials versus mixtures have been with us for a long time.

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[5]Official Publication, 1964-65, No. 18, Association of American Fertilizer Control Officials (p104)
[6]Official Publication, 1965-66, No. 19, Association of American Fertilizer Control Officials (p85)
[7]Official Publication, 1987, No. 40, Association of American Plant Food Control Officials (p130)
[8]The UFTRS Program may be downloaded from the AAPFCO website: www.aapfco.org

## Current AAPFCO Fertilizer Approach

*continued from seventh page*

My best answers are: (1) some states report as materials both those that are used straight and those that are subsequently sold in mixtures (mixtures are not reported), (2) some report materials only when used straight, and (3) some do both. Therefore, the tons of a specific material reported does not necessarily represent all the tons of that specific material that were applied straight because some would have been used in mixtures. Also, the tons of a specific material reported used does not represent all the tons of that specific material that were used because some would have been used in mixtures.

Custom blenders frequently report the materials that they use in their custom blends rather than the individual custom mixes. For each case, care is exercised so that there is not duplicate reporting. For example, when materials are reported and subsequently used in blends, the blends are not reported.

*County Data*

The system allows registrants to report their sales into specific counties. The accuracy of the county data is directly related to the diligence of the registrant in recording and reporting the purchaser's county. For example, a registrant who is located near three counties and sells into those three counties tends to report all sales in the registrant's home county. The most significant improvement in the usefulness of the UFTRS data would be if the registrants reported accurately the county in which the fertilizer was used. One idea discussed within AAPFCO to address this issue is adding a consumer "ZIP CODE" field to the system to more accurately locate the county where the fertilizer was used. While the data for a specific county may not be as accurate as desirable, the accuracy improves as one looks at larger areas of groups of counties.

*Secondary and Micro-nutrients*

Capturing the actual usage of secondary and micronutrients is just as difficult as that of the NPK materials. If a company buys a secondary/micronutrient mix and adds it to a registered NPK mixture then the amount of the secondary or micronutrient used in the mixture is lost. If the individual materials used in the mixture are reported then the secondary/micronutrient tonnage is captured. The system is designed to capture the secondary and micro-nutrients in a mixture but there are no states that utilize the feature at this time.

The National Fertilizer Database[9]

Prior to 1985, fertilizer use statistics in the US were collected by the USDA which used not only tonnage reports from the states but also some of their own estimates. The USDA data are available from libraries that have a complete set of US Government documents. In 1985 TVA, Muscle Shoals, AL assumed the mission from USDA of collecting and publishing the fertilizer use statistics. They relied exclusively on the tonnage data received from the various state fertilizer control agencies. TVA continued this up to 1995 when a change in mission required them to drop the publication of *Commercial Fertilizers*, which is a summary of the national fertilizer use data. At that time the Association of American Plant Food Control Officials (AAPFCO) and The Fertilizer Institute (TFI) combined forces to continue the publication. TVA agreed to give AAPFCO all the software and procedures that they had developed for this publication. At that time I was Secretary of AAPFCO and assumed the responsibility of collecting, editing and publishing *Commercial Fertilizers.*

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[9]Commercial Fertilizers YYYY, where YYY is the 'fertilizer year' is currently published by AAPFCO and TFI. For copies contact TFI, Union Center Plaza, 820 First Street NE, Suite 430, Washington, DC 20002, phone: 202/962-0490.

## Current AAPFCO Fertilizer Approach

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Each fall beginning around October 1st, a notice is sent to each state control official requesting a copy of their tonnage database. All the data are now sent as electronic files either via email or on CD's. The fertilizer year is July 1-June 30 for most states. Once received the databases from each state are edited, summarized and published.

The national fertilizer use data are published in two ways: a 40 page hard copy publication, *Commercial Fertilizers*; and, electronically in ASCII text and Lotus spreadsheet formats. TFI sells the hard copy and AAPFCO sells the electronic databases in an attempt to recoup costs associated with the collection and publication.

Value of the Data

The following are some ideas on the value of the *Commercial Fertilizers* data:

- Assists Industry Stability-The use of fertilizer by state and region allows companies to plan and invest to supply future needs and is a service to the regulated industry.
- Improved Decision Making-Trends in fertilizer use by county, state, and region provide a firm basis for companies to make business decisions and for agricultural professionals to evaluate how well farmers are following recommendations for fertilizer use.
- Continues National Database-It continues one of the oldest agricultural databases.
- Annual Publication in *Commercial Fertilizers*
- Ensured Adequate Supply to Each Farm-It helps balance supply and demand.
- Environmental Applications
  - ⇒ Identify Potential Areas of Concern-County data are especially useful in evaluating the presence of nutrients in surface and subsurface waters.
  - ⇒ Improve Efficiency of Policies relative to fertilizer nutrient management.
- Track nitrogen, phosphate, and potash use.
- Accurate Fertilizer Tonnage Data is Basis of Sound Business Decisions.
- Record Keeping is Good Business!
- Other Data of Value:
  - ⇒ County Use
  - ⇒ Materials and Mixed Grade Distribution
  - ⇒ Farm/Non-farm
  - ⇒ Bag, Bulk, or Fluid

Summary

The data collected using AAPFCO's UFTRS are the most accurate and creditable source of fertilizer sales data for the US. By making a critical assumption that sales reported are to the final consumer, the data may be considered fertilizer "use". The data are available in AAPFCO's publication, *Commercial Fertilizers*, and are valuable, used by various persons of various interests, and fragile in that many of the control offices collecting the data are under financial stress not to collect and distribute the detail data.

The accuracy of the county data collected is as accurate as the data reported by the registrant/licensee. It is suggested that more attention be given to reporting the location of the final purchaser of the fertilizer rather than the location of the reporter. The state fertilizer control official also has a role in the accuracy of the data by thoroughly reviewing the reports and questioning those data that appear incorrect; and, offering training on the fertilizer tonnage reporting system.

*D. Terry, Fertilizer Regulatory Program*

*Appendix continued on page 11*

## Outstanding Alumnus Award

*continued from fifth page*

As the Manager for Kentucky Foundation Seed Project (KFSP), Letha has helped introduce improved cultivars of foundation seed of soybean, winter wheat, tobacco and grasses, which led to the production of thousands of acres of certified seed to the benefit of Kentucky farmers. Because of her efforts, many tons of high quality seed have been produced by and made available to the growers of Kentucky.

For the past 20 years Letha has enthusiastically cooperated with many groups, including the Kentucky Seedsman's Association, Kentucky Seed Improvement Association and university plant breeders on regulations, administrative procedures and production of certified classes of seed. She has also worked with seed regulatory agencies to ensure policies are understood and producers are meeting requirements in relation to labeling and distribution of seed, whether the seed lots are in intrastate, interstate or international commerce. Perhaps her greatest contribution to the seed industry has been bridging the gap between the university breeding programs and the producer. Over her career, she has worked diligently to get improved germplasm into the hands of Kentucky growers quickly and to increase understanding of the importance of seed quality. Although now semi-retired, the KFSP continues to thrive under her leadership and she will directly assist with release of new tobacco, hybrid sweet sorghum, white clover and wheat varieties in 2007.

*C. Finneseth — Seed Testing Program*

# EMPLOYEE NEWS

Francisco (Frank) Jaramillo, Jr., Ph.D. is now fulfilling the Feed Program Coordinator position. He brings a unique blend of educational, feed production and regulatory experience to this position. His research and work experience in the feed industry spans over 16 years. Frank is a graduate of Texas A&M University, with his graduate research involving non-invasive composition analysis of live fish, mineral nutrition and evaluation of immunomodulators.


Frank worked over two years as the Quality Assurance Manager at a new aquaculture feed mill which provided valuable industry experience in manufacturing, labeling and the importance of complying with regulatory agencies. In addition, he has spent more than 11 years working as a regulatory official with the Office of the Texas State Chemist (OTSC). While at OTSC he worked as an investigator in the South Plains area of Texas, served as the Registration Associate for nine years at the OTSC's headquarters in College Station. In September of 2006, he was promoted to Supervisor of the Feed and Fertilizer Control Service.

From 2001 to 2002, Jaramillo served as President of the Association of Southern Feed, Fertilizer and Pesticide Control Officials. Currently, he is an active member of the Association of American Feed Control Official and serves on the Feed Manufacturing Committee and Model Bill & Regulations Committee.

We welcome Frank to Kentucky and to the Division of Regulatory Services. We look forward to having his product knowledge, experience and leadership to ensure safe products for our animals and pets.

## Current AAPFCO Fertilizer Approach

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# Appendix

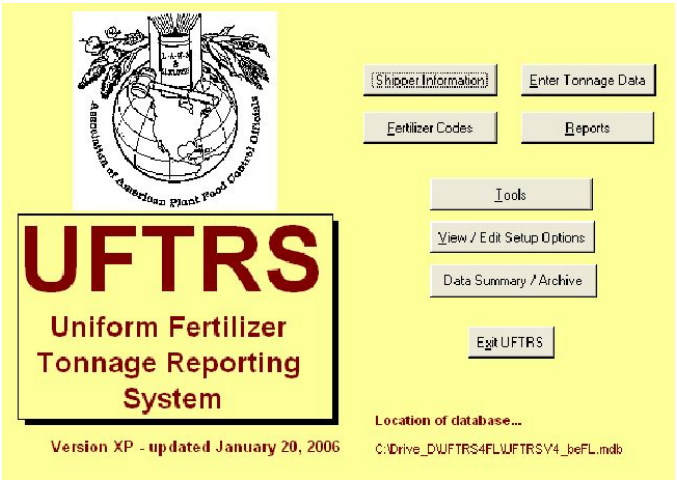


Fig. 1. UFTRS Opening Screen

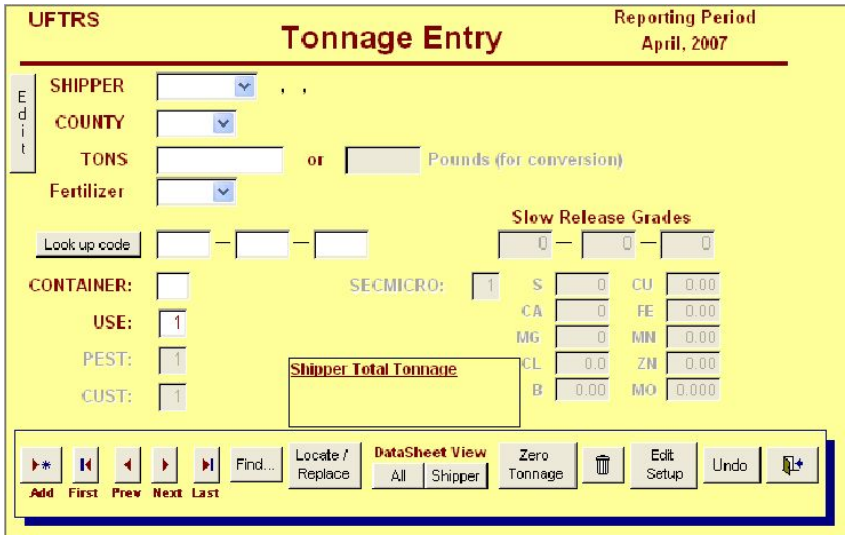


Fig. 2. Data Entry Screen
Note data fields

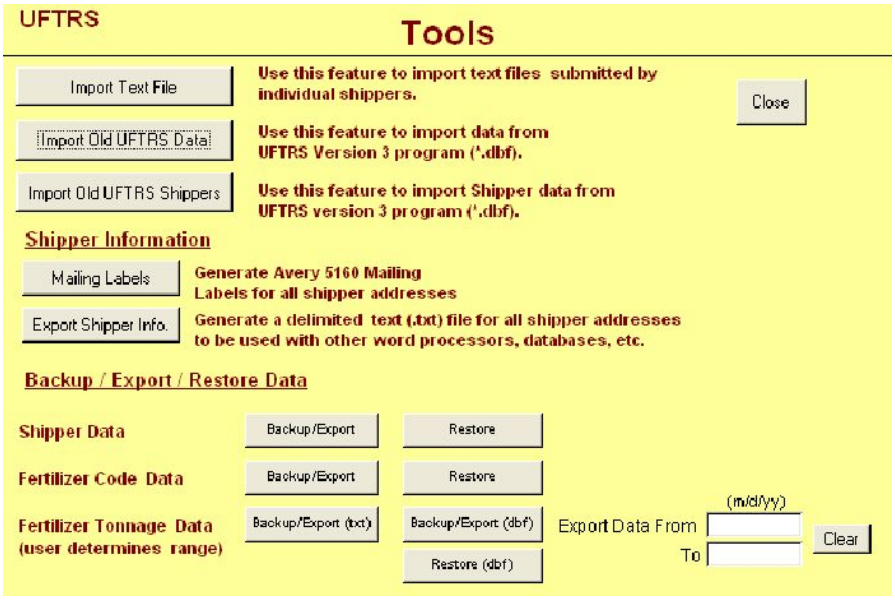


Fig. 3. Tools Menu
Note the “Import Text File” Button

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