

Regulatory Services News

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Feed - Fertilizer - Milk - Seed - Seed Testing - Soil Testing
Ag Lime Testing - Industrial Hemp Testing

Spring 2023

Director's Digest

Proud but vigilant

I recently attended the Mid-Year Meeting of AAFCO (Association of American Feed Control Officials) in San Antonio, Tx. One of the speakers was Ray Starling who is a lawyer with a family farming background who served on the staff of Sonny Perdue when he was Secretary of Agriculture. Mr. Starling has written a book entitled "Farmers versus Foodies". The main theme of this book is that there are outside forces who feel our food system is broken and have some plans to fix it that will not be favorable for continued food security. If you make your living in agriculture, this is a book worth reading. It points out many accomplishments we have made in agriculture that we should be proud of, but the need for us to be vigilant against outside forces that feel the food system is broken and needs to be rebuilt.

Reasons to be proud

It's hard to pull highlights from a 200+ page book in a short article but there are some key points I felt important. Let's start with several reasons we should be proud of our agricultural accomplishments as listed by Mr. Starling:

1. *The level of U.S. farm output nearly tripled be-*

tween 1948 and 2017, growing at an average annual rate of 1.53%.

2. *This output was achieved even though labor and land use in agriculture declined. In fact, farmers and ranchers have reduced their labor use by 75 percent and land use by 24 percent.*
3. *U.S. agriculture and food sectors are key drivers of economic growth, producing \$2 trillion in annual revenue and \$130 billion in profit for more than 2.6 million businesses.*
4. *In 1900, it took 37.9 percent of the national labor force to feed and clothe 76 million U.S. consumers, a consumer-to-farmer ratio of 13:1. By 2017, the number of U.S. consumers had grown to 325 million, and the farm labor force had dropped to 1.1 percent of the national total. Thus the current consumer-to-farmer ratio is 159:1 and growing.*
5. *In 2018, \$139.6 billion worth of American agricultural products were exported around the world. The United States sells more food and fiber to world markets than we import, creating a positive agricultural trade balance.*

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Director's Digest, continued

There were many predictions in the 1960's and '70's that the world would soon not be able to feed it's population. Certainly, it is preferable that no one goes to bed hungry but agriculture has answered the call to produce more and to do it more efficiently. To quote the author: *"The prevalence of undernourishment in the world fell from 37 percent of the total population around 1970 to 14.8 percent in 2000, reaching a low of 10.6 percent in 2015. All the while we were almost systematically adding more people to the population total."* One argument that our food system is broken is that while much of the world overconsumes food, there are other parts that are undernourished. As shown, this number has declined over the last 50-years but we would certainly like to see it reach zero. It's difficult to blame our current food system for this discrepancy when you consider all factors. As noted by Mr. Starling: *"Pointing to undernourishment in less developed society-in so-called third-world environments – as an agricultural problem ignores that hunger in those venues is frequently the byproduct of political instability: war, political violence, or corruption. It turns out that war zones are not the best place to turn around a six-row combine or debate the approvals for genetically engineered crops."*

When given the freedom and support needed, modern agricultural practices will find a way to feed the people.

Reasons to be vigilant

Those of us in agriculture know that our numbers are dwindling as a percentage of the population. When I went to college back in the 1970's, the vast majority of students in the Ag College were from a farm background. That is certainly not the case in many Ag Colleges today and in some cases the student would have to go back 2-3 generations in their family to find someone connected to agriculture. Unfortunately, this is also the case in many of our legislatures. In 1953, Congress had 63 House members whose occupation was listed as agriculture, while the Senate had 21. This means that over 15% of the Congress had an agrarian background. In

2021, there were 27 farmers, ranchers, or cattle farm owners in Congress (6 in the Senate, 21 in the House). This means that about 5 percent of that Congress are farm owners. The dominant professions of today's congressional members are public service/politics, business, and law. It is certainly easier for anti-agriculture forces to influence someone who has no or limited knowledge of what is actually involved in producing food.

Ultimately, we need to remember that consumers will determine what we produce. My concern is that they may also determine how we produce it and many practices being touted will reduce our efficiency and therefore our ability to provide adequate food. A favorite quote of Mr. Perdue was *"When man has no food, he has one problem; when he has food, he has many problems."* It's easier for detractors of our food system to complain when their bellies are full of delicious food of their choosing.

At the hotel where the AAFCO meeting was held, breakfast was provided each morning with a prominent sign noting that all egg dishes were made with "cage free eggs". Obviously, the hotel feels this will appeal to many consumers or they wouldn't go to the trouble to point it out. With the current price of eggs, I'm curious at what price differential these consumers will choose conventional eggs versus "cage free" eggs. I got behind a car recently with a bumper sticker that stated "I buy local!". I'm all in favor of buying locally grown products when feasible but realize if I want bananas or pineapples, I may have to buy from further away. If people want cage free eggs, local beef, organic vegetables, or plant-based meat substitutes that is certainly their right but they need to realize there is a cost to many of those choices. We also need to point out to consumers that many practices being touted by "foodies" are less sustainable and less environmentally friendly than current production methods.

"Farmers versus Foodies" is an interesting read and is thought provoking when you realize how many people think our food system is broken and they know how to fix it. The author points out that

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many of the organizations opposed to our current food system are well funded and have learned to use political clout, monetary investments, and social media to spread their message.

There are certainly many groups that support different commodities. As Mr. Starling points out: *"Think about the life cycle of a food ingredient, and there's an association or organization dedicated to policing the policy environment that impacts it. We have associations for seed, fertilizer, equipment manufacturers, equipment dealers, equipment financiers, creditors more generally, the commodities themselves (one for each commodity, of course), those focused on procuring workers, the land grant institutions, feed, oil from seed, protein producers and processors, ag truckers, retailers, rural energy providers, extension agents, and even the ag economists and educators. Not to mention the bureaus, cooperatives, broadcasters, departments of agriculture, conservationists, and organic folk."*

The problem he points out is that while these organizations work together amicably, their main purpose is to support their main cause (or commodity). If they want to combat the forces against our current food system, they will need to work more together as a team.

Book referenced is: "Farmers versus Foodies-A Look at the Outside Forces Forging the Future of Farming and Food" Ray A. Starling, Short Rows Leadership, LLC, 2022.

Dr. Darrell D. Johnson,
Executive Director

Update on Hemp Feed Ingredients in Kentucky

In 2016, the Feed Program of University of Kentucky Division of Regulatory Services published a policy on the use of hemp products in animal feed. At the time, hemp production was on the rise in Kentucky and other parts of the country and there was interest in using hemp byproducts in animal feed. The policy clearly stated that our laws and regulations did not allow the use of any hemp products including hemp seeds, hemp oil or hemp seed meal in products intended for the feeding of animals at this time. The only exception was the use of non-viable hemp seed for the feeding of wild birds.

We outlined the three pathways available for approval or acceptance of a new ingredient in Kentucky. The first was pursue a new ingredient definition through the Association of American Feed Control Officials (AAFCO). The second was through the Food and Drug Administration's (FDA) self-affirmed GRAS (generally recognized as safe) program. The third was a self-affirmed GRAS submission directly to our Feed Program. We also acknowledged that industrial hemp production in Kentucky may produce products suitable for animal feed and that we would be open to reviewing this policy in the future.

In November of 2022, the Division of Regulatory Services received self-affirmed GRAS dossiers from element6 Dynamics regarding the use of hempseed meal and hempseed oil as feed ingredients for chickens and equine. Their dossiers met the requirements set forth in our Kentucky Feed Regulations (12 KAR 2:041).

With no objections to these self-affirmed GRAS determinations, hempseed meal can be used as an ingredient in Kentucky in the diets of layer, broiler, and breeder chickens at no more than 30% of the diet and in growing, maintenance, brood mare, and performance horse diets at no more than 20% of the diet.

With no objections to these self-affirmed GRAS determinations, hempseed oil can be used as an ingredient in Kentucky in the diets of layer, broiler, and breeder chickens at no more than 12% of the diet and in growing, maintenance, brood mare, and performance horse diets at no more than 12% of the diet.

Because the dossiers were prepared and submitted by element6 Dynamics, only hempseed meal and hempseed oil produced by element6 Dynamics are currently acceptable for use in Kentucky feed products. However, we would certainly work with any other hemp processor with similar products to provide a path to inclusion in the feed market. It is also important to note that FDA is currently reviewing a Feed Additive Petition on hempseed meal use in poultry feed. Approval of this petition would allow the use of any similarly produced hempseed meal in poultry feed throughout the US.

Dr. G. Alan Harrison,
Director of Feed and Milk Prog

COMMERCIAL FERTILIZER VALUES FOR 2023

Commercial fertilizer values are determined and published each year. A state-wide survey was conducted in December 2022 to determine the averages for 2023. Under the provisions of Chapter 250.401 of the Kentucky Fertilizer Law, the follow-

ing unit values are announced for use in determining and assessing penalties of deficient fertilizer. They represent the average of responses from throughout the state for retail value of bulk mixed fertilizers. The value of most nutrients decreased since the survey conducted last year, the current values are listed below.

A few examples of common mix values per ton are:

9-23-30	\$781.01	10-10-10	\$401.20
19-19-19	\$762.28	5-10-15 low Cl	\$524.15

NUTRIENT	DOLLARS/UNIT (20 LBS.)	DOLLARS/UNIT (1 LB)
Total Nitrogen (N)	\$15.98	\$0.79
Avail. Phosphate (P ₂ O ₅)	\$12.43	\$0.62
Soluble Potash (K ₂ O)		
*Tobacco (low Cl)	\$21.33	\$1.06
*Non-Tobacco	\$11.71	\$0.58
Calcium (Ca)	\$12.16	\$0.60
Magnesium (Mg)	\$30.07	\$1.50
Sulfur (S)	\$10.33	\$0.51
Boron (B)	\$113.33	\$5.66
Copper (Cu)	\$138.27	\$6.91
Iron (Fe)	\$10.80	\$0.54
Manganese (Mn)	\$45.06	\$2.25
Molybdenum (Mo)	\$20.20	\$1.01
Zinc (Zn)	\$63.28	\$3.16

Calculation Note:

1. The N value for DAP & MAP was assigned from anhydrous ammonia (AA).
2. The value of P from DAP and MAP was calculated using the assigned value of N from AA.
3. The final values for N and P are weighted averages based on FY 2022 (distributed) tonnage for ammonium nitrate, Urea, DAP, TSP, MAP, and ammonium sulfate.

If you have any questions, please call me at (859)-257-2785; or, email: smcmurry@uky.edu

*Stephen McMurry,
Director Fertilizer and Seed Programs*

Inspector News

Alysia Conner of Benton KY has her one-year anniversary with the Division of Regulatory Services this February. She is currently working to complete her Animal Feed Regulatory Standards Program training courses with FDA to meet her Basic Inspector requirements. This is a two-year process of completing FDA training to be able to conduct the FDA contract inspections for Kentucky firms that manufacture feed. For our inspectors to be able to conduct FDA feed mill inspections they must complete a series of online and in person trainings on all feed manufacturing topics. To date Alysia has completed the following courses: Regulatory Foundations of Current Good Manufacturing Practices, Grain and Feed Mill Operations, Sanitary Transportation of Human and Animal Food Rule, Current Good Manufacturing Practice (cGMP) for Animal Food Regulators Course, Bovine Spongiform Encephalopathy (BSE) Inspection, FDA Information Sharing, FSPCA Preventative Controls for Animal Food GMP Auditor Course, and Medicated Feed Inspection. She is scheduled to complete the Preventative Controls course this spring. She will be able to complete her basic training requirements during her second year and then move to the Advanced Inspector level status.

Daryl Derossett of Glasgow KY is our other new inspector and has been with us for 6 months. He is making good progress on his training course requirements for the Basic Inspector level.

Our other six inspectors plus myself have met all of the requirements for the Advanced Inspector level for the Animal Feed Regulatory Standards Program for FDA. The seven of us have completed FDA audits during inspections this year as part of the Advanced Inspector requirement of the Animal Feed Regulatory Program Standards. I want to thank our inspection staff for working with Kentucky firms to ensure that you are staying in compliance with all the FDA feed laws and regulations.

Our inspection staff has been conducting the FDA inspections with our Kentucky firms for the last few months and should finish these before spring. The FDA inspections we conduct are at all firms in Kentucky that manufacture any kind or type of feed. These include Licensed Medicated Feed Mills, Non-

licensed Medicated Feed Mills, BSE inspections, 507 inspections for all firms, and Preventative Control inspections for those large firms that require a food safety plan. By the end of this year, I believe that all Kentucky firms will have had a cGMP 507 inspection.

For this newsletter I wanted to focus on the feed program and the size and scope of the inspector's work to regulate the feed products that are sold in Kentucky. There are a total of 22,640 registered feed products sold in Kentucky. The breakdown is as follows: 12,469 large package and 10,171 small package. Of this total 3,976 are registered by Kentucky firms and the rest are from out of state. There was a total of 2,934 new feed products registered during 2022. The pet food industry has become a significant part of our feed inspection focus during the last 10 years. Our inspectors collect and sample pet food in January and July. This past year there were a total of 12,630 registered pet food products sold in Kentucky. The breakdown is as follows: 4,573 treats, 4,253 dog food, 2,480 cat food, and 1,324 specialty pet food.

There are just over 10,000 livestock and other feed products registered in Kentucky. The breakdown on these products are as follows: 2,084 mineral/vitamin/other, 1,386 beef feed, 1,149 equine feed, 904 commodities/ingredients, 884 poultry feed, 641 wild bird food, 441 swine feed, 362 dairy feed, 327 sheep feed, 311 deer feed, 136 rabbit feed, and 119 fish food.

Our inspection staff is responsible for sampling these products during the year and reviewing labels when they visit your firms. In addition to inspections at feed mills, our inspectors are responsible for sampling animal feed including pet food at all types of retail locations in their assigned territory. This is not a complete list, but I wanted to list a few to show the scope and size of the feed program impact on the consumers of Kentucky. All pet stores, grocery stores, convenience stores, General Dollar, Tractor Supply, Rural King, Walmart, Big Lots, sporting and hunting stores for deer feed products.

Kristen Green is our feed program registration specialist in our office that is responsible for ensuring that all feeds that are sold in Kentucky are registered with the Division of Regulatory Services. If you are adding a new feed to your product lineup,

your local inspector or Kristen can help assist you with label review for your new feed. I want to thank Kristen for the work she does for our Kentucky firms that register products.

Our inspector staff is well trained and have years of experience to assist you in staying compliant with the feed laws and regulations. They are there to help you. I want to thank them for the work they do to protect the consumers of Kentucky and to make sure the feed is safe for our pets and livestock.

***Jim True,
Inspector Coordinator***

Kentucky Feed Meeting Planned for March

The Feed Program of the University of Kentucky Division of Regulatory Services is in the planning process for a state-wide feed meeting to be held on March 14, 2023. This would be a hybrid meeting with in-person attendees and the opportunity to participate virtually through Zoom.

In the next few weeks, we will be sending surveys to Kentucky feed manufacturers asking for input on topics to be covered and to determine logistical needs for the in-person attendee component of the meeting. Funding for this meeting will be through our Animal Feed Program Regulatory Standards grants with the Food and Drug Administration. Assisting Kentucky businesses in complying with Food Safety Modernization Act (FSMA) regulations will be a major focus of the meeting but we also want to address other needs of the industry.

We would appreciate your assistance with this survey and look forward to seeing you in March – in-person or virtually.

***Dr. G. Alan Harrison,
Director of Feed and Milk Programs***

Update for Quality in UKDRS Laboratory

In the previous Regulatory Services Bulletin, I shared with you that UKDRS is accredited to the ISO/IEC 17025:2017 Standard by the accrediting body American Association for Laboratory Accreditation. We began this journey by adding eight methods and 24 analytes only in animal feed, pet food,

and their ingredients. We then added more methods to include two other matrices, fertilizer and hemp for a total number of 13 methods and 31 analytes. We recently had our Year 2 Assessment for the ISO 17025:2017. Again, we increased the number of analytes and added methods to our Scope of Accreditation.

The certificate number is still 5823.01. Our scope of accreditation now has 19 methods and 47 analytes.

System and program improvements have included: changes in sample flow, how data is collected, how traceability is maintained, and the purchase of new NIST Standard Materials such as masses, thermometers, manometers, furnace temperature probes, calibration of vacuum ovens, and tablets.

Major changes had to be made to our program interface, LabAccess, which the majority of analysts use. We also faced the issue of getting our purchases in a timely manner due to the shortages & work options (of the vendors) from the Covid pandemic. The analytes on our scope of accreditation includes previous analytes such as nitrogen in fertilizer & protein in feed, available phosphate in fertilizers, soluble potash in fertilizers, and Δ -8 & Δ -9 in hemp. The new analytes include water insoluble nitrogen and coated slow-release nitrogen for fertilizer, 11 minerals via dry ash digestion, gravimetric sulfur which includes sulfate, free, and thiosulfate, urea in feeds, crude fat & fat via the acid hydrolysis method, moisture in feeds, and salt via sodium & chloride.

This objective evidence demonstrates the dedication and professionalism of the staff at UKDRS. Our plans are to continue adding to our Scope of Accreditation and maintaining our ISO 17025:2017 Accreditation status. I am very proud of the quality work everyone does at UKDRS. I am very fortunate to be able to work with these folks and others who have recently retired, for the last 15 years.

What does this mean? We have to continue to ensure the quality objectives and scope of activities are defined and make sure responsibilities and authorities are assigned. We have to make sure that we are following the ISO Standard. Hopefully,

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things will begin to get back to normal or close to normal as it will be for right now.

Our next steps will be doing our management review. Surveys have been sent out to our customers to get their improvement ideas. Survey questions include: how has our ISO/IEC 17025:2017 Accreditation positively or negatively affected our laboratory, our time efficiency, our samples, and others.

This means that we are performing internal audits of the quality management system and of our chemical and microbiological methods on our scope of accreditation. We will evaluate our sample agreements with our customers and update as we need to. We evaluate methods' performance to make sure they still produce defensible data for our internal and external customers. The results of our discussions produces short and long-term goals. We prioritize these based on ease of implementation, customer needs, laboratory capabilities, personnel, management, and/or inspector feedback.

During our annual management review, we review changes relevant to the laboratory, verify we meet our objectives outlined in our quality manual, and the suitability of our policies and procedures. We also review the status action items from the previous management review. We review the outcomes of internal audits. We also evaluate corrective actions and their effectiveness. Assessments by external bodies, changes in the volume and type of work or in the range of laboratory activities, customer and personnel feedback, and complaints. We review the effectiveness of any implemented improvements, adequacy of resources, validity of results, and other relevant factors, such as monitoring activities and training. We also review the results from risk identifiers and review the risk registry of all potential risks.

We are continually evaluating our operations, policies, and standard operating procedures so that we provide unbiased quality results for our customers. We are continually looking for ways to improve our quality standards. We will continue to improve so that our consumers, stakeholders, and farmers are protected.

Sharon F. Webb, Ph.D.
Director, Quality Program

Upcoming Events

Association of American Plant Food Control Officials (AAPFCO) Winter Meeting

February 13-14, 2022
La Fonda On the Plaza Hotel
Santa Fe, NM

Kentucky Dairy Partners Annual Meeting

February 28 and March 1
Sloan Convention Center
Bowling Green, KY

UK Division of Regulatory Services Feed Meeting

March 14
On Campus and Virtual
University of Kentucky
Lexington, KY

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