Regulatory Services News

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

Spring 2021

Director's Digest

What will 2021 bring?

As I look out my office window, I can see the UK football stadium where UK Healthcare is administering the COVID 19 vaccine. The parking lot was full all last week with a goal of delivering 1,800 to 2,000 vaccinations per day. About half of our staff was vaccinated two weeks ago and await our booster next week. Public school students in my home county are expected to go back to in-person learning on an alternate day basis on February 1. Hopefully, this means the end of the pandemic is within sight. We are all anxious to return to normal with the full realization that it will be a new normal.

Agriculture took its share of hits during 2020 but overall faired better than many expected. One bright spot was a new consumer appreciation for agriculture as they didn't like finding empty shelves in the grocery store when this began back in the spring. As I have mentioned before, this is an opportunity for us to share our story and I hope we take advantage of it.

Many trade publications spend January predicting what the new year will bring and I have found a few of interest that I wish to share. Petfood Industry

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magazine surveyed 14 experts in the pet food industry about what trends to expect in 2021. In the last issue of this newsletter, I discussed sustainability. Nine of the fourteen experts surveyed picked sustainability/traceability as the top trend among pet food consumers. Consumers want to know where ingredients come from, where and how they are processed, and if they are sustainable whether they are of plant or animal origin. They will also want packaging that will protect the food or treat but is environmentally friendly.

The second trend noted in the pet food survey was e-commerce. Purchasing things online boomed during 2020 and this is a convenience that many consumers aren't going to want to give up. This is a challenge for not only the industry but for those of us who regulate it as well. This is not only true for pet food but also for the seed industry and to a lesser extent for fertilizer. These consumers deserve protection just like those who buy from the brick and mortar stores. We at Regulatory Services started purchasing pet food online a couple of years ago for

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Director's Digest, continued

testing and added seed last year. It's a challenge to stay on top of products sold over the internet but it's our responsibility to regulate these products as well.

Crop Life magazine does a survey each year of 100 of the nation's top ag retailers. They ask these businesses to rank their optimism for the upcoming growing season on a scale of 1 to 10-one being the lowest and ten being the highest. In most years, the majority of retailers fall in the middle range, rating the upcoming year between a four and six. However, in 2021, 68% of respondents rate their level of business optimism between a seven and 10. Scores between four and six were only chosen by 28% and 4% chose three or lower. Five ag retailers rated their outlook for 2021 as a perfect ten. This is the first time that's happened in the 20 plus years of this survey. I think all of us hope this optimism plays out.

Feed Strategy magazine evaluated what the new presidential administration might mean for feed regulations. With President Biden indicating that the pandemic will be his top priority, it's expected that new feed regulations may not occur early in his tenure. However, analysts and industry leaders generally agree the feed industry won't be exempt from new regulations in the early months and years of the Biden administration. Many expect OSHA will step in and implement workplace standards related to risk assessment, social distancing and possibly employee screening, not just for COVID, but potentially a variety of similar kinds of health risks.

FDA inspections have been reduced during the pandemic and it is expected these will increase later in 2021 as the vaccine becomes more available. It is also expected the new administration will increase funding for FDA's animal food operations. This could increase inspections but have the benefit of more expeditious reviews and approvals of new drugs. A lasting result from the pandemic could be that regulatory agencies will consider which inspections must be done in person and which could be conducted remotely to conserve resources. There is hope that Biden's election will improve international relations and improve opportunities for trade. There is concern that the new administration's interest in climate change could lead them to take steps to curb emissions from different industries, including animal agriculture. There are expectations that with agriculture being ruled essential, vaccines will be provided to agricultural workers in a timely manner. Our industry has adapted and survived through lots of different administrations in my lifetime and I'm confident we will again.

FSMA turns 10

The Food Safety Modernization Act was signed into law on January 4, 2011. Passage of FSMA represented the largest overhaul of the nation's food safety system since the Federal Food Drug and Cosmetic Act in 1938. To understand the importance of the FD&C act, I encourage everyone to read "The Poison Squad" if you want a true appreciation of how necessary this legislation was for our safety.

FSMA was fueled by widespread concern among lawmakers, public health agencies, industry, and consumers after multi-state outbreaks of foodborne disease had caused severe illnesses and deaths in thousands of people and animals in the United States. The goal was to change the FDA from an organization that reacts to food safety issues to one that helps prevent them. FSMA requires those producing, handling, processing and transporting food and feed to have preventative controls in place and utilize good manufacturing processes.

Implementation of FSMA rules has not been easy or without cost to both industry and state regulatory agencies. The events of 2020 have consumers more concerned about food safety than ever before and I'm glad our industry has rules in place to show them we are intent on producing safe products. We can still have issues as the recent aflatoxin issue in dog food illustrates, but we have a solid recall system in place when these do occur.

> Dr. Darrell D. Johnson, Executive Director

COMMERCIAL FERTILIZER VALUES FOR 2021

Commercial fertilizer values are determined and published each year. A state-wide survey was conducted in December 2020 to determine the averages for 2021. Under the provisions of Chapter 250.401 of the Kentucky Fertilizer Law, the following 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 has increased since the survey conducted last year, the current values are listed below:

NUTRIENT	DOLLARS/UNIT (20 LBS.)
Total Nitrogen (N)	\$9.34
Avail. Phosphate (P_2O_5)	\$8.20
Soluble Potash (K ₂ O)	
*Tobacco (low Cl)	\$14.52
*Non-Tobacco	\$5.98
Calcium (Ca)	\$11.21
Magnesium (Mg)	\$29.79
Sulfur (S)	\$9.43
Boron (B)	\$147.70
Copper (Cu)	\$138.27
Iron (Fe)	\$10.80
Manganese (Mn)	\$58.06
Molybdenum (Mo)	\$20.20
Zinc (Zn)	\$62.46

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 2020 (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

Steve McMurry, Director of Fertilizer and Seed Programs

Still Practicing What We Preach – The Sequel

In our spring newsletter last year, I reviewed our 2019 accomplishments and discussed our 2020 plans. At the time I wrote the article, we were in the early stages of the pandemic and while there was uncertainty, I thought we would be back to business as normal by the end of the year. Normal is still a ways away but we did not shut down and we continue to support the mission of the Division of Regulatory Services. With respect to our inspection and sampling activities, our 2020 numbers are actually similar to past years.

Inspection of feed manufacturers and distributors

 In 2020, our 9 inspectors made 971 visits to Kentucky feed manufacturers and dealers. These visits represent 424 different KY businesses. Understanding on a first-hand basis how firms manufacture and even store animal feed is critical to helping ensure safe feed for our animals. Biosecurity concerns and social distancing certainly changed how our inspectors interacted with firms this year.

- Our inspection contract with FDA calls for 30 inspections from July 2020 through June 2021. Our inspectors completed 5 inspections in the fall but this is the area where the pandemic has had the most impact on our activities. To limit our time at the facility, we are collecting more information through phone calls or email and may even use video conferencing when available. We will also need to use only one inspector for all but the most in depth inspection.
- We will continue to work with FDA to keep the inspection component in the hands of our Kentucky inspectors and are optimistic that we can complete the remaining inspections.

Compliance sampling

- Overall, our feed sampling numbers were similar to previous years with 3,277 total samples. However, our official samples were lower with 2,754 official samples (product guarantees compared to lab analyses for compliance purposes). These samples representing 518 feed manufacturers. Our compliance rate was similar to previous years with 76% of samples passing and 95% of all guarantees tested.
- The lower number of compliance samples collected was due to a decision to collect fewer pet food samples (1,019 in 2020 vs. 1,523 samples in 2019). The number of manufacturers or guarantors sampled was similar to previous years but we are collecting fewer samples per guarantor.
- Contaminant testing was up about 45% in 2020 vs. 2019 with 67 samples (primarily pet food) tested for salmonella and/or listeria contamination.
- Online purchases of pet food accounted for 75 samples in 2020. We do require registration of products available for sale in Kentucky even if

they are only available online.

• In November, we began using an NIR scanner (near infrared reflectance spectroscopy) as a screening tool to estimate protein, fat, fiber components, and moisture. We are now able to scan nearly all samples, with the exception of minerals, and this has decreased the time the samples spend in the lab.

Service and education

- In 2019, our lab analyzed 78 service samples provided by Kentucky consumers, extension agents, feed dealers, or manufacturers to answer a question or address a complaint. We received fewer service samples in 2020 (34) and that could be related to the pandemic. The addition of NIR in our lab has allowed for rapid testing and reporting with service samples received in the last 3 months.
- Our division completed a sampling study funded by the Association of American Feed Officials (AAFCO) last fall. The purpose of the study was to evaluate the number of probes needed when sampling bagged feed.
- On the educational side, our efforts in the coming year will certainly involve assisting firms in compliance with FSMA regulations. If we are able to hold in person meetings this year, FSMA would certainly be an area worth discussing.

Milk program

• The pandemic did have an impact on the activities of our milk program. Inspection numbers were down due to fewer opportunities to inspect haulers at milk plants due to COVID issues.

The Division of Regulatory Services is the only state agency in Kentucky charged with ensuring the safety, suitability and quality of animal feed in producing meat, milk, and eggs for human consumption and products for companion animals. We take pride

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Still practicing, continued

in being considered as essential and we continued to do our jobs despite the challenges of less travel, less personal contact, and a large number of our staff working remotely. I look forward to being able to work with our inspectors in the field, in person visits, and fewer Zoom meetings.

Dr. Alan Harrison, Director Feed and Milk Programs

Moving Forward, After Accreditation

In the previous Regulatory Services Bulletin, I shared with you that UKDRS is now accredited to the ISO 17025:2017 Standard for eight methods and 24 analytes. I relayed to you that we will continue moving our different laboratories under the quality management system umbrella and expand our scope of accreditation. Does that mean that our "job" of quality is complete? What do you do if you replace instruments and improve methods? We perform performance qualification tests.

Analytical pieces of instrumentation may be thought of as cars. You perform the maintenance as recommended by the manufacturer. You fix and replace the various parts as they need it. You get the hardware and software updated as recommended. However, there does come a point in time where the manufacturer says, "We are no longer offering support for this model of instrument." This could be due to a particular problematic part. This could be due to improved efficiency for the environment and/or personnel. The manufacturer may not support the model of the instrument you use because they invested a lot of time and money in improvements for the new model and no longer feel it's beneficial to keep the old model up to date. There are a number of reasons why a specific instrument model may no longer be supported. The hard part is determining what direction will be taken by the end user.

In Quality, the important part of the whole process is to determine that the new piece of analyti-

cal equipment performs as well or better as the previous piece of equipment. There are a variety of ways to determine if the performance is equivalent and/or improved. But the process is a series of tests that demonstrate that the equipment performs as intended. We call that process "Performance Qualification". During this process we set out to document objective evidence that it meets our needs.

Certain questions can be answered with objective evidence such as: is the equipment capable of producing accurate data; are the results produced reproducible; does the variability meet the customer's needs; is the sensitivity of the new instrument enough to provide the level of precision required by laboratory methods.

The needs of the laboratory, which is based on the customer's needs, are well-laid out and should be included in verification and/or validation packets that were generated to meet the ISO 17025:2017 requirements. The first step is to make sure to define the performance needs of the method. This is a multistep process that requires the lab discussing what the customer needs. It will typically include defining the analyte, the concentration or range of concentration of the analyte and the matrix it is in. Then, an acceptable accuracy of the method will be defined, followed by repeatability and reproducibility definitions. The quantification and detection limits will be defined based on the customer's needs. These two limits define what is the minimum concentration of the analyte detected and what the minimum amount of the analyte can be measured. Next, is the measurement uncertainty will be defined. This explains what the acceptable variation is for the method and/ or analyte.

Once the method needs are defined by the customer, the laboratory will either develop a method or find a method that meets them. Most methods that are used at UKDRS are either Association of Official Analytical Chemists, Inc. (AOAC), ISO methods, methods developed and verified in Europe, or inhouse developed methods. Once a method has been decided on, the laboratory analyst will begin performing the method using quality reference materials to generate data. This data allows comparison of the lab's results to the results generated using the same method. It will give us information on accuracy, precision, sensitivity, concentration range, limit of detection, limit of quantification, and measurement uncertainty. All of these are calculated and compared to the methods needs as described by the customer. If they meet what the customer wants, then further tests are performed to gather data that demonstrates the capability of the laboratory or the analyst.

All of the above describe what goes into determining if a chemical method is satisfactory to use. Typically, a number value isn't determined for microbiological methods (like detection of salmonella), only if it is there or not. However, similar stringent requirements are met to determine if the microbiological method meets the customer needs.

After the purchase of a new piece of equipment it must be demonstrated that it produces data similar to or much better than the previous piece of equipment. This is a very thorough and deliberate process. The results from the new piece of equipment are compared to the results from the previous piece of equipment. This allows the lab and the customer to have an increased confidence in the new instrument and the data generated by it.

By using validated methods, participating in proficiency check sample programs, and by including quality reference materials in our analyses, we monitor the precision, accuracy, and bias of each analyte. This ensures that when we report analytical values for an Official Feed or Fertilizer Sample that has been taken by one of our highly trained inspectors, our findings are accurate and unbiased. We are continually looking for ways to improve our quality standards. This is why we are heavily involved in organizations at the regional, state, national, and in some cases international levels. It is important to keep on top of new strategies of analyzing samples. We take a leadership role at the national level so that quality standards are upheld and improved upon. We will continue to improve so that our consumers, stakeholders, and farmers are protected.

Dr. Sharon F. Webb Director, Quality Program

Inspector News

Inspection Summary Review for 2020

The Division of Regulatory Services has eight field inspectors that perform sampling and inspections at all agricultural facilities within the state of Kentucky. The four program areas the inspectors are responsible for are feed, fertilizer, seed, and agricultural lime. These include any manufacturing facilities, all retail ag stores including lawn and garden centers in addition to all pet food retail stores, and lime quarries.

The goal of the inspection program is to ensure safe products for the consumer and/or animals. The inspectors sample feed for livestock and pets to make sure the manufacturing process is correctly meeting the nutritional guarantees. We also test medicated feeds for the correct level of the drug being used for treating animals. In addition, we also sample ingredients that you receive from suppliers to make sure the products you purchase for manufacturing your final feed products are meeting their guarantees. Sampling fertilizer is to make sure the fertilizer product is meeting the analysis guarantees on the label. Seed samples and tested for germination, purity and weed seed present. Lime samples are analyzed for the Relative Neutralizing Value of a ton of lime needed to correct the pH of the soil. In addition to sampling products the inspectors are also looking at all labels for feed, fertilizer and seed products sold in Kentucky to make sure they are labeled correctly.

Inspections are also conducted at feed manufacturing facilities to make sure the cGMP's (current Good Manufacturing Practices) are being implemented for the type of facility and the feed being

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Inspector news, continued

produced. Inspectors are checking production processes and equipment along with other facility related issues such as cleanliness or any issue that could affect feed safety.

For all fertilizer facilities that blend samples the inspection and sampling of custom mixes is to ensure the fertilizer blender is properly working and the mixing process is adequate for the fertilizer to meet the custom mix guarantees.

This past year the inspectors collected 2,837 feed samples. This would include livestock feed, bulk ingredients, minerals, bulk custom mixed livestock feed, pet food, pet treats, and specialty pet food products. In addition, we also started sampling some pet food from online suppliers this past year.

There were 2,444 fertilizer samples collected this year and those were bulk bin materials, custom mixes, bagged fertilizer, liquid fertilizer and specialty products.

There were 1,478 seed samples collected this year and those consist of ag crop seed, grasses, clovers, vegetables, and lawn and garden products.

The lime program goal is to test the lime quarries twice each year, once in the spring and once in the fall. The total lime samples for the year was 131.

Because of Covid-19 the total samples for the year were down about 10% for each program but I want to thank our inspectors for the work they were able to accomplish during 2020 under Covid-19 working conditions.

Covid-19 update and FDA inspections

I want to start by letting you know that the entire inspection staff is in the process of getting vaccinated for the Covid-19. We have all had our first shot and are in the process of getting the 2^{nd} dose in the next two weeks. It will take a few weeks after the 2^{nd} dose for the vaccine to fully work, but we are hopeful that this will keep our inspectors safe going forward.

We have worked extremely hard this last year to keep our inspectors safe and healthy and to keep

from bringing Covid-19 into any of the facilities that we inspect.

Because of Covid-19, the management of the Division of Regulatory Services decided to wait until later into 2021 to conduct the FDA inspections for the 2020-2021 year. We normally try to get the majority of these completed by December, but as of today we have completed very few and those were at smaller firms that could be inspected in one day. This is the first year of the Preventative Control inspections at the larger firms and we will be completing these sometime later this spring or early summer. We hope to get these finished by the end of June. As the Covid-19 risk subsides the inspectors will be working with the firms that are scheduled for this year to get these completed.

If you have any questions, please contact me. Thanks, and stay safe.

Jim True, Inspector Coordinator

UK Beef IRM Mineral Formula Update

Dr. Jeff Lehmkuhler recently provided an update to the beef IRM minerals primarily based on the unavailability of prilled magnesium oxide but also with adjustments to some trace mineral specifications. The unprilled mag ox is very unpalatable and this is why the magnesium content was lowered to hopefully insure cattle will consume the mineral in adequate quantities.

If you are selling any High-Mag minerals, I hope you will encourage producers to monitor intake. Cattle need to consume 15-20 grams of actual magnesium/head/day during tetany season to prevent grass tetany. It takes 4.4 ounces of a 12% magnesium mineral to provide 15 grams of actual magnesium. If cattle are not consuming this amount, then they are not receiving the desired intake of magnesium. If intake is inadequate, producers should evaluate mineral feeder placement or take other steps (such as blending in some distillers grains or dehy molasses) to increase intake.

Dr. Lehmkuhler's comments on the formula changes are shown on the next page and the specs are on page 10.

RE: UK IRM Mineral Specification Update

This update to the UK IRM specifications is a bit overdue. We appreciate those of you providing us feedback on the lack of availability of prilled Magnesium Oxide. I called Marietta and another provider with both indicating a lack of availability of prilled MagOx which we realize has been the case for some time. Thus, prilled MagOx has been removed from the formula. As granular or powder magnesium oxide will have a greater surface area resulting in the potential for a decrease in palatability, the magnesium oxide level has been reduced to 12% from 14%. Additionally, to promote intake near the target level dehydrated molasses should be added at 50 pounds per ton or an additional 50 lbs of dried distiller grains should be added. Magnesium oxide is bitter and unpalatable to beef cattle. Having a high magnesium oxide product that is not consumed near the target level is of concern.

We continue to review the literature on mineral research to make adjustments as needed. We have opted to reduce the manganese level in the basic beef cow mineral. Adams (1975) reported forage levels for manganese of 44-76 ppm (mg/kg). West Virginia researchers collected forage samples from 1999-2001 and reported the mean manganese level to be 110 ppm from 589 samples and 95% of the forage samples met the recommended requirement for beef cattle (Rayburn et al., 2002). Recently in spot checks of pasture samples from the Little research station, we found manganese to range from 41-79 ppm in fescue/bluegrass-based pastures. Further. communication with the VDL indicates that they rarely see manganese deficiency cases with cattle that are independent from deficiencies of multiple trace minerals. In other words, deficiency cases seen are generally from an overall lack of any mineral supplementation leading multiple trace mineral deficiencies.

The recent recommendations for beef cattle suggest manganese in the diet to be 40 ppm for beef cows and 20 ppm for growing calves. There is limited data on the exact manganese requirement for beef cattle. However, if one assumes the recommendations of 20-40 ppm to be accurate, this would suggest no supplementation would be required for the majority of forage samples reported above. This said, we know that a significant portion of manganese in plants is within the cell wall and as plants become more mature, manganese availability will be reduced. As we do not know the potential release and absorption of manganese for each possible forage scenario, we have not completely eliminated manganese from mineral supplementation recommendations at this point.

The 2016 NAP Nutrient Requirements of Beef Cattle 8th edition, simply utilizes a fixed manganese requirement of 20 ppm for growing cattle and 40 ppm for cows. A mature beef cow consuming 12 kilograms of forage (26 lb) would have a daily requirement of 40 mg/kg x 12 kg/d = 480 mg/d. A mineral supplement formulated to have an intake of 4 ounces/d or 113 grams with a manganese concentration of 3,000 ppm would provide 339 mg/d manganese or 70% of the daily recommended need. This would be in addition to the forage manganese intake.

The previous UK IRM basic beef cow formulation had a target intake of 3 ounces/d or 85 grams. The previous basic beef mineral manganese concentration was 5,000 ppm which would have provided 425 mg/d or 88% of the daily needs. Given what we now know about the manganese levels in forages, we believe reducing the manganese level is plausible. The new manganese level has been reduced to 3,750 ppm which would provide 66% of the daily requirement at the targeted 3 ounce intake.

We have opted to not change the manganese level in the high magnesium or stocker mineral at this time. This is partially due to intake variability with minerals containing magnesium oxide and ionophores. As an example, if the beef cows consumed 3 oz instead of the target 4 oz intake of the UK High Magnesium mineral, 65% of the daily recommended need would be provided by the supplement.

The 2016 NAP Nutrient Requirements of Beef Cattle 8th edition increased the cobalt recommendation to 0.15 ppm from 0.10 ppm. Cobalt levels vary greatly in forages. We increased the cobalt level in the high magnesium product to 12 ppm. At a target intake of 4 ounces, the mineral would provide approximately 75% of the daily recommendation. The basic cow mineral would provide 70% of the daily requirement at the target 3 oz intake. Cobalt has been shown to be important in fiber digestion in the rumen and is a cofactor of the synthesis of vitamin B12 by rumen microbes. As a reminder, the maximum tolerable level for cobalt reported for beef cattle is 25 ppm of the total diet (NRC, 2005).

UK Beef IRM Mineral Recommendations				
(free-choice supplements for grazing beef cattle) Date: January, 2021				
	Basic Cow-Calf Mineral ¹	High Magnesium Mineral ²	Stocker Mineral with Monensin ³	
Salt, %	22 - 25	15	22-26	
Mg, % (from MgO)	2	12 ⁴	0.15	
Ca, % (minimum)	11	11.5	9	
Ca, % (maximum)	12	13	10.5	
P, %	4.0	6.0	6	
К, %	0.5	0.1	0.8	
S, % (maximum)	1.0	1.0	0.8	
Cu, ppm ⁵	1,600	1,400	2,000	
Zn, ppm	3,200	3,000	4,000	
Se, ppm ⁶ (See below)	35	26	35	
I, ppm	65	50	60	
Co, ppm	15	12	15	
Manganese, ppm	3,750	3,700	3,000	
Fe (iron) Added ⁷	None	None	None	
Vit A, IU/lb	150,000	100,000	150,000	
Vit E, IU/lb	150	100	150	
Monensin, grams/Ton ⁸	None	None	1,620	
Nutritional adequacy based on intake (oz/hd/day)	3	4	3	

¹Distillers dried grains (40 lb/ton), wet molasses (20 lb/ton), and mineral oil (20 lb/ton).

²Distillers Dried Grains (no less than 150 and up to 250 lbs/ton as space allows), wet molasses (20 lbs/ton) and mineral oil (20 lbs/ton). (May substitute 50 lbs of dehy molasses for distillers grains to improve intake). To be fed when conditions for grass tetany exist. Formulated for cows during pre- and early lactation.

³Contains Monocalcium phosphate 29.49%, Dried cane molasses 20%, Ground limestone 13.75%, cane molasses 3%, Distillers dried grains 5%, Mineral oil 1%. FDA approved free-choice formula.

⁴Magnesium oxide should be the source of magnesium, not dolomitic limestone or magnesium mica. Prilled magnesium oxide is not available currently and has been removed as a recommendation.

⁵Minimum one-fourth of copper in an "organic" (chelate, proteinate, etc.) form. No copper oxide shall be used.

⁶Minimum of 50% of selenium shall come from selenium yeast product (i.e. Sel-Plex[®]). Three oz. supplement intake at 35 ppm or 4 oz. intake at 26 ppm provides 3 mg of selenium per head daily.

⁷No iron oxide for coloring.

⁸Three oz. supplement intake provides 152 mg of Monensin per head daily.

NOTES:

If an additional ingredient is needed to meet the 2,000 lb formula, we specify distillers dried grains with solubles.

These products are not recommended for sheep, goats or Jersey cattle due to potential copper toxicity.

Please note, the University of Kentucky has formulated these recommendations specifically for otherwise healthy cattle based upon National Research Council (NRC) guidelines for animal requirements, average forage analyses in Kentucky and research on mineral availability in forages. Actual forage levels may vary. If you have any concerns about the health or special needs of your herd, you should contact the Extension Service or your veterinarian. While the University provides these recommendations based upon currently available data, it assumes no responsibility for any errors on the part

Jenny Combs wins 2020 Poundstone Award

Jenny Combs was awarded the 2020 Poundstone Award at our 2020 socially distanced Christmas celebration. Jenny started with Regulatory Services in 2014 as a Lab Tech Sr. in our Feed & Fertilizer Lab. In 2016, she became the coordinator for our efforts to meet the Animal Feed Regulatory Program Standards (AFRPS) where she helped us become fully implemented in 3 years (vs the 5 years allowed). She has also become very active in the Association of American Feed Control Officials where she co-chairs the Current Issues and Outreach Committee.

Jenny has a B.S. in Agriculture from EKU and is working on an MS degree here at UK. She and her family have a farm in Mercer County.



As one of her nominators noted, Jenny sometimes has to be told whoa but she never has to be told to go. Congratulations and thank you for all you do for Regulatory Services.

History of the Poundstone Award

The Poundstone Award was created to honor an outstanding employee in the Division of Regulatory Services. The award is named in honor of Bruce Poundstone, who was Director of Regulatory Services for many years. He was nationally renowned for his leadership and innovations in the feed, fertilizer, and seed regulatory arena. He was founder of the Feed Microscopy Association, started the AAFCO Feed Control Seminar, and was a participant in the development of the GMP concept for feed manufacturing. Mr. Pound-stone was a distinguished leader in the Association of American Feed Control Officials, the Association of American Plant Food Control Officials and the Association of Southern Feed, Fertilizer and Pesticide Control Officials. The Regulatory Services building is named in his honor.

Upcoming Meetings



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