Regulatory Services News

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

Winter 2023

Director's Digest

Human Food Labels

A big part of our job in regulation is approval of labels to ensure that they properly represent the product. At UK Regulatory Services we approve labels for livestock feed, pet food, fertilizers, and seed. When I see what we approve and reject, I'm often fascinated by what I see on food labels in the grocery store. You may see multiple claims on a product such as organic, natural, gmo-free, and humanely raised. Some of these claims are official certifications which are enforced by the USDA or a nonprofit entity while other terms refer to qualities that are not regulated at all.

Modern Farmer recently published an article defining some of these terms and clarifying which ones are certified and or regulated. Hopefully, a review of this article will be helpful in making decisions at the grocery store.

Certified and/or regulated terms

USDA Organic: This certification prohibits the use of synthetic pesticides and fertilizers. Genetical-

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ly modified organisms (GMOs) are also not considered organic. You may find this designation on meats, dairy products, and produce. For meats with this label, synthetic growth hormones are not permitted, and the animals must have been fed a diet that is 100% organically grown. This certification is granted by the USDA and the operations producing these products must be inspected annually to maintain compliance.

Cage Free: This applies to poultry that live indoors without cages and have access to food and water. This is another USDA certification but they do not define how large this indoor space must be. Verification of these parameters varies widely, according to USDA. The Quality Assessment Division of the USDA will verify a cage-free operation during paid grade and certification services.

Free Range: This means that the animal spends part of its time outside, uncaged. However, there is no regulation on the amount of time spent outside, or how much outdoor space must be provided. The outdoor space can be fenced or netted in. Farms must provide proof to the USDA Food Safety and

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Division Contact Information Phone: (859) 257-2785 Fax: (859) 323-9931

Executive Director Dr. Darrell D. Johnson darrell.johnson@uky.edu

Auditor Robert Counts, Jr. robert.counts@uky.edu

Feed & Milk Programs Dr. Alan Harrison-Director alan.harrison@uky.edu

Kristen Green, Registration Specialist kristen.mary.green@uky.edu

Jenny Combs, Animal Feed Regulatory Program Standards Specialist jennifer.combs@uky.edu

Bob Hickerson, Milk Inspector rhickers@uky.edu

Ryan Baldwin, Feed/Fertilizer Lab Supervisor <u>rtba222@uky.edu</u>

Kristin Brock, Milk Laboratory Supervisor kristin.brock@uky.edu

Michelle Young, Staff Assistant Feed michelleyoung@uky.edu

Lydia Howlett, Staff Assistant Milk/Inspection Lydia.Howlett@uky.edu

Fertilizer & Seed Programs Stephen McMurry-Director <u>smcmurry@uky.edu</u>

Jonathan Collett, Seed Laboratory Supervisor collett88@uky.edu

June Crawford, Staff Assistant Fertilizer june.crawford@uky.edu Fax: (859) 257-9478

Marilyn Smith, Staff Assistant Seed <u>mm.smith@uky.edu</u> Fax: (859) 257-7351 Inspector Coordinator Jim True jim.true@uky.edu

Inspectors Mark Barrow mcbarr2@uky.edu

Nathan Keith nathan.keith@uky.edu

Alysia Conner Alysia.Conner@uky.edu

Daryl Derossett daryl.derossett@uky.edu

David Mason dwmason@uky.edu

Warren Pinkston wwpink00@uky.edu

Terry Prather tprather@uky.edu

Bart Young bart.young@uky.edu

Laboratories & Soils Program Dr. Frank Sikora-Director <u>fsikora@uky.edu</u>

Dr. Solomon Kariuki-Lab Manager skka222@uky.edu

Diane Hunter, Soils Lab Supervisor, Lexington diane.hunter@uky.edu

Paula Hill (Interim), Soils Lab Supervisor, Princeton paula.hill@uky.edu

Quality Control Director Dr. Sharon Webb <u>sfwebb2@uky.edu</u>

Cate Perkins, ISO 17025 Accreditation Specialist cate.perkins@uky.edu

Director's Digest, continued

Inspection Service of free-range conditions.

Naturally Grown: The process to be certified "USDA Organic" can be complicated for many farms, especially small ones, and this is an alternative to that label. The "Certified Naturally Grown" label uses the same requirements but is verified by a team of Certified Naturally Grown farmers instead of the USDA. This is different from just claiming "natural" or "all-natural" as explained later.

Fair Trade: This is one I commonly see on coffee. The Fair Trade USA certification was developed to help ensure fair working conditions for farmers and growers on some commonly imported products. In addition to coffee, it may be found on chocolate, tea, honey, bananas and more. Fair Trade USA checks for things such as fair wages, safe working conditions, lack of child labor and ability to unionize. Unfortunately, there have been multiple documented instances of companies achieving this certification without meeting labor standards.

Animal Welfare Approved: This certification is administered by the nonprofit A Greener World. This certification assures that farmers raise their animals on pasture or range and allow the animals to behave and move in a way that supports their wellbeing.

American Humane Certified: Granted by American Humane, this certification claims to use a scientifically informed set of criteria to evaluate whether animals are being raised in suitable and healthy living conditions. This includes everything from enough space to shade access. Some animal welfare advocates criticize this certification because it still allows for practices such as caged confinement.

Grassfed: This is a USDA certified label and requires that grazing animals have access to grass or other pasture forage during the growing season and derive the majority of their nutrients from this source. It does not set parameters for pesticides, growth hormones, or antibiotics. **Non-GMO Project Certified**: This certification is granted to products that do not use genetic engineering by the **Non-GMO Project**.

Raised Without Hormones: Another USDA certification and is mostly for cattle. Operations must submit documentation that they do not use hormones such as rBGH to make animals grow bigger and faster. The USDA does not allow hormones to be used for pork or poultry, so this certification is not appropriate for those meats.

Raised Without Antibiotics/No Antibiotics: This term is used in animal agriculture to denote that the animal has not been given antibiotics. Earlier in 2023, the USDA announced that it will begin an evaluation process to determine if more intensive verification is necessary.

<u>Terms not backed by certification and/</u> <u>or regulation</u>

All-natural: USDA does define the term "natural" for egg, poultry, and meat products. It means these products are "minimally processed and contain no artificial ingredients." However, you will find many other products carrying this term that do not fall under the USDA category of meat, poultry, or eggs. There is no standard definition of "allnatural." If you see this term on a product not covered by the USDA categories, seek further clarification on the label.

Eco-friendly/Climate Positive: Many labels claim that their product is environmentally friendly but this is not a measurable term. Look for further clarification on how this product benefits the environment.

Pasture-raised: "Certified grassfed" does have a definition that is USDA verified but "pasture-raised" does not. Seek further clarification on what the labeler means by this term if this is important to you.

Local: The USDA defines local as within the state of provenance or within 400 miles of its production point. However, this is a widely interpreted

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Director's Digest, continued

term and different producers or companies may have different definitions of what "local" means. Again, seek further clarification if buyng locally produced products is important to you.

This is a long list of terms you may see on human food labels but does not include them all. You can have more confidence in terms that have certification behind them than those that do not. I remember a detergent growing up that constantly had the phrase "new and improved" on the label with no explanation of what was different. If you are going to pay more for a product because it has a trait you want, then you should feel confident that the labeling is truthful.

> Darrell D. Johnson, Executive Director

Information taken from "What's in a Name? Food Labels, Explained" by Lena Beck on the Modern Farmer blog, October 9, 2023.

FERTILIZER PRODUCT REGISTRATION FOR 2024 IN KENTUCKY

All Kentucky fertilizer registrations and licenses expire on December 31, 2023 and must be renewed to legally sell fertilizer in the state for 2024. Renewal notices to all current Kentucky registrants/licensees will be mailed or emailed early November. The renewals list all products registered in the state for 2023, all licenses approved for 2023, and instructions for completing the task.

BE ON THE LOOK-OUT FOR YOUR RENEW-AL NOTICE

As always, if you have questions Call: 859 257-2785, Fax: 859 257-9478, or E-Mail: June.Crawford@uky.edu

SURVEY OF COMMERCIAL VALUES OF FERTILIZER NUTRIENTS

In early December you will receive a survey to determine the commercial values of fertilizer nutrients. Under the provisions of KRS 250.401, I am conducting a survey to determine the commercial values of the fertilizer nutrients for Calendar Year 2024. This survey is of utmost importance for the Division as well as the retail community of fertilizer sales. The values will be published and used in determining and assessing penalty payments if needed. It is important that we include as many surveys as possible. Our inspection staff will be asking if you have received and/or responded to this survey. Please note that we want the current retail value of fertilizers in dollars per ton. All information will, of course, be held in strict confidence. You can give the survey to your respective inspector or fax to 859-257-9478 to the attention of Steve McMurry or e-mail to smcmurry@uky.edu.

> Stephen McMurry, Director Fertilizer and Seed Programs

Mycotoxins and Manufacturing Animal Feed

It's harvest time and we are conducting our annual corn survey to assess both nutrient composition and mycotoxin risk. At our recent Preventative Controls Qualified Individual (PCQI) training course in Bowling Green, the topic of mycotoxin contamination of animal feed was cited as a hazard that every manufacturer should consider. This article is not intended to be a complete review of mycotoxins and all the potential effects on health and production across all species. I will limit my discussion to why manufacturing firms should include mycotoxins in a hazard risk assessment, sampling guidelines, and qualitative versus quantitative analyses.

If your firm is required to comply with Part 507 Subpart C regulations, you must have a written food safety plan and that plan must include a written hazard analysis. It is highly recommended that

mycotoxins be identified as a potential hazard when manufacturing animal feed. Firms may choose to address this hazard with Good Manufacturing Practices (GMP's) such as a sampling plan or with a more extensive preventative control but as a hazard, it must be addressed. Firms that are not required to comply with Subpart C regulations (qualified facilities) are still expected to produce safe animal feed. These firms may not be expected to have written food safety plans but they should have GMP's in place that reduce the possibility of producing contaminated feed.

The distribution of mycotoxins within a bin, truck, wagon, or any other container is notoriously heterogeneous. These compounds are not distributed evenly, particularly in whole grains, and that makes sampling a challenge. The ultimate goal of sampling is to end up with an analyzable portion that represents the lot of feed. For incoming grain, a number of sampling protocols that have been suggested but most involve collecting multiple samples throughout the lot or at least 10 collections from a moving screen of grain (around 10 lbs total). Ideally, the entire sample can be ground prior to reducing the sample size for analysis.

Testing for mycotoxins can be qualitative or quantitative. Rapid test methods are screening tests and are more qualitative than quantitative. Most of these tests can be conducted without expensive laboratory equipment or extensive training and can allow the mill to make decisions on whether to accept a load of grain. However, false positives and false negatives do occur and the tests tend to work best on

2023 Corn - NIR estimates

the specific types of grains for which they were developed. If a firm decided to test incoming corn for mycotoxins, I would recommend an aflatoxin test and either a deoxynivalenol (DON) or fumonisin test.

Quantitative testing for multiple mycotoxins is not something we would typically find in a feed mill. Our lab uses a combination of liquid chromatography and mass spectrometry (LC-MS/MS) to quantify six mycotoxins. With commercial labs, you can expect to spend \$100 or more for a full panel of mycotoxins and a week or more to get the results. The expense and time delay makes this approach less useful for determining the fate of a load of grain.

Our division has taken a survey approach to mycotoxin testing of corn at harvest time. As soon as corn harvest begins, each of our eight inspectors collects samples at their mills identified as new crop corn. The majority of these samples are collected though stream cutting as trucks unload and we collect about two pounds of corn from each truck. Using the LC-MS/MS method, the analysis is quantitative but we treat the results as more qualitative. By sampling across the state and taking a large number of samples, we are able to determine if mycotoxins are present in the corn crop and if so, in what area of the state. If more sampling is needed in a particular region, we have the capability of getting more samples in a timely fashion. During this survey time, inspectors receive weekly updates on mycotoxin and nutrient results. The completed survey is posted on our website. The tables below are the latest results from this fall's crop.

10/25/23

Samples analyzed= 39 Averag

> Minimur Maximur

Crude Pro- tein	Crude Fat	Crude Fi- ber	ADF	NDF	Moisture
6.4	4.2	1.3	1.6	11.7	14.3
5.1	3.5	0.5	0.7	8.9	11.5
8.1	5.4	1.8	2.5	15.8	18.0
	tein 6.4 5.1	tein Crude Fat 6.4 4.2 5.1 3.5	tein Crude Fat ber 6.4 4.2 1.3 5.1 3.5 0.5	tein Crude Fat ber ADF 6.4 4.2 1.3 1.6 5.1 3.5 0.5 0.7	tein Crude Fat ber ADF NDF 6.4 4.2 1.3 1.6 11.7 5.1 3.5 0.5 0.7 8.9

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Mycotoxins, continued

Corn Samples:	2023 crop				
# samples =	15			# tests	
	Units	# tests	LOQ ¹	> LOQ	Mean ²
Aflatoxin	ppb	15	< 5 ppb	0	-
Fumonisin	ppm	15	< 1 ppm	15	3.8
Vomitoxin	ppm	15	< 1 ppm	13	1.0
Zearalenone	ppm	15	< 1 ppm	10	0.08
T-2 Toxin	ppm	15	< 1 ppm	1	0.03
Ochratoxin	ppm	15	< 1 ppm	0	-
¹ Lower limit of	quantificat	ion			
² Mean includes only samples with analyzed values > LOQ.					

Here are a couple of references below for additional information on mycotoxin testing and mycotoxin levels of concern by species.

Mycotoxin Testing Guidelines | University of Kentucky Veterinary Diagnostic Laboratory (uky.edu) Mold and Mycotoxin Problems in Livestock Feeding (psu.edu)

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

Seed Registration and Permit Renewals for 2024

The renewal process for seed registrations and permits will occur over the next few months. Applications will be emailed or mailed to seedsmen, seed dealers, and seed conditioners who were permitted and registered in 2023.

Firms that sell seed at retail in container sizes of 40 pounds or more are required to register as Seed Dealers. Locations that condition uncertified seed for distribution in Kentucky are required to register as Non-Certified Seed Conditioners. Those who condition only certified seed are registered as a part of the certification process under the Kentucky Seed Improvement Association.

Anyone who labels agricultural seed or agricultural seed mixtures is required to obtain a Permit to Label Agricultural Seed. Those who obtain this permit are also required to file Semi-Annual reports and pay fees based on the container size of the product. Semi-Annual reporting forms are emailed or mailed to agricultural seed permit holders at the end of each period and are required to be filed within 45 days after the end of each period. seed, or combination mulch, seed and fertilizer is required to obtain a Permit to Label Vegetable Seed, Flower Seed, or Combination Mulch, Seed, and Fertilizer Products. These products are not subject to the Semi-Annual reporting schedule.

Fees for registrations and permits are \$25 each. Locations that are required to obtain both a labeling permit and a registration or both registrations only pay one \$25 fee for all. It is common for a location to be involved in conditioning seed, labeling seed and also selling seed at retail. All three applications are required, but only one \$25 fee is paid. A \$50 fee would only be required if both labeling permits are needed. The registration fees are waived if one or both permits are obtained.

Applications will be emailed or mailed to your location and are based on the applications that you currently have. Please complete the applications and return with the application fee stated to our office. If you have questions about this process, please contact Marilyn Smith at 859-218-2468 or mm.smith@uky.edu.

> Stephen McMurry, Director Fertilizer and Seed Programs

Anyone who labels vegetable seed, flower

How do you label a Biostimulant?

The Association of American Plant Food Control Officials (AAPFCO) will be voting on a Beneficial Substances Model Bill this coming February. The new bill will change how many fertilizer products are labeled. Below is an example of a fertilizer product with a potential biostimulant guarantee. Changes to labeling include the addition of the heading "Also Contains Beneficial Substances" or just "Contains Beneficial Substances" when no nutrients are claimed, a purpose statement for the biostimulant as well as directions for use. Some States will need to adopt the Beneficial Substances Model Bill in order for these changes to come into effect, while other states like KY may have this terminology already in place.

<u>SuperGro</u>

12-4-9

Derived from....

ALSO CONTAINS BENEFICIAL SUBSTANCES

Humic acid from leonardite......6%

Purpose statement:

Directions for use:

Farm Co-op Hwy 1, Box 7 Centerville, Any State Zip Code Phone Number

Net Weight -25 lb (11.33 kg)

Stephen McMurry, Director Fertilizer and Seed Programs

New program for Soil Reports

A new program has been developed for county extension offices to organize, store, and print soil test reports. The current program being used was developed in 2002 and has experienced several problems in recent years due to changing computer systems. The new program utilizes updated data management features with all data stored on one computer accessed from the web. The new program has undergone testing in some county offices for a couple of years. All counties are being transitioned to the new program this fall.

A new feature of the program is the option for county offices to email reports to clients. Clients

can also be sent a URL link that will contain all historical soil reports they have submitted through a county office.

An example of a soil report generated with the new program is shown on the next page. Nutrient recommendations are now shown in a column in a table with test results. Lime recommendations are shown on the bottom of the table. Sufficiency bars are now colored showing the sufficiency level of pH or nutrients in the soil. Red being low sufficiency, orange at medium sufficiency, and green being high sufficiency.

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CO NUM: 01926, CROP: Cool Season Grass

Woodford Cooperative Extension Office

184 Beasley Drive Versailles (859) 873-4601

REPORT TYPE: A	John Doe
LAB NUM: SL-23-31716	123 Lane Rd.
CO NUM: 01926	Versailles, KY 40383
ACRES: 6	502-112-2345
	email@uky.edu



Soil Test Report

Page 1 of 2

10/6/2023

REPORT TYPE: A	John Doe
LAB NUM: SL-23-31716	123 Lane Rd.
CO NUM: 01926	Versailles, KY 40383
ACRES: 6	502-112-2345
	email@uky.edu

Steven Musen

Steven Musen Agent for Agric and Natural Resources

OWNER SAMPLE ID: Far East

AGRICULTURE CROP INFORMATION:

.... CROP: Cool Season Grass MANAGEMENT: Annual Top Dressing USE: Pasture

Determination	Result	V Low	Low	Med	High	V High	Recommendation
Soil pH	5.7						see below
Nitrogen							see comments below
Phosphorus	123 lbs/acre						None
Potassium	115 lbs/acre						70 lb K20/ac
Calcium	3004 lbs/acre						
Magnesium	296 lbs/acre						None
Zinc	2 lbs/acre						None
Cation Exchange Capacity	18 meq/100g	Typical for KY v	which is 11 to 19 me	eq/100g			
Cation Saturation	>>>>>	1% K, 42% Ca, 3	7% Mg, 50% total b	ases			

Soil pH Recommendation:

2 tons/ac of 100% effective lime is required. Adjust lime rate based on RNV of lime which can be obtained at www.rs.uky.edu/soil/technical_info/index.php.

Inspection News

Corn Protein and Label Guarantees: Feed violations for protein guarantees have been on the increase for the last few years. One possible reason for feed to not pass the protein guarantee is that several years ago it was common for corn protein to be 7.0% or higher. Currently for 2023 the 41 corn samples of new crop corn from Kentucky have averaged 6.4% protein. The low being 5.1% and the high being 8.1%. With corn protein trending lower and the wide variation in protein levels in this year's corn crop, it is important to get the corn you are using to manufacture feed tested. Ask your inspector to col-

Dr. Frank Sikora, **Director of Soils and Laboratory**

lect a sample of your corn for protein level to make certain you can formulate the feed you are manufacturing to meet your feed protein level on your feed tags.

PCQI Training in Bowling Green: Regulatory Services held a PCQI (Preventive Control Qualified Individual) training for the Kentucky Feed Manufacturers in Bowling Green on October 10-12. The 3day course was focused on how to identify hazards at an individual firm, how to control those hazards during manufacturing feed, and how to write a Food Safety Plan to ensure that safe feed is produced. Each feed manufacturer has to complete a hazard

analysis and identify the hazards that are likely to be found during the manufacturing of animal feed. A feed manufacturing facility can be exempt from the requirements of writing a food safety plan if they meet the definition of a "very small business" which states: a business with a 3-year average of \$2.5 million, adjusted for inflation, in sales of animal feed. All other firms must have a written food safety plan that has to be reviewed every three years. If you have not reviewed your food safety plan, I would suggest you get it out and review it before our inspection staff starts the FDA inspections, and make any updates that may be needed.

FDA Inspections: The inspection staff will be conducting FDA inspections during the next several months at feed manufacturing facilities in Kentucky. This year's contract with FDA is for:

- All 32 firms on this year's contract will be scheduled for a cGMP507 inspection.
- Eleven Preventive Control inspections are scheduled for firms that require a Food Safety Plan to ensure that the hazards identified by the firm are being mitigated during the feed production process. Hazards that are common in the production of feed in Kentucky are mycotoxins, metal, drugs, nutrient toxicity, etc., which all should be listed if identified in the firms Food Safety Plan.
- Sixteen Medicated Feed Mill inspections. These include three licensed and thirteen nonlicensed feed mills and will include a VFD inspection for those firms manufacturing feed that require a VFD. During these inspections inspectors will be reviewing medicated feed manufacturing records and records for medicated feed that requires a VFD.
- Ten Non-Medicated firms are scheduled for only a cGMP507 inspection which will review the firms manufacturing processes. These firms are qualified as exempt from being required to write a food safety plan, however they are still required to identify hazards they may encounter during their feed manufacturing process. During

the inspection they need to be able to explain and show the inspector how they are controlling the hazard during the feed manufacturing process at their firm. The two potential hazards that all Kentucky firms need to mitigate during feed manufacturing are mycotoxins and metal. There may be other hazards at a firm that need to be identified depending on what feeds they are making for different species.

Seed Testing Program: Before my career with Regulatory Services, I spent almost twenty years in the seed industry working for several companies. The importance of seed testing is critically important and the industry does an outstanding job getting viable seed from the production, processing and finally to the end user. The difference between seed and the other products that we test is that seed is a living organism and can have problems when the seed dies and will no longer germinate. In my twenty years in the seed business, this only happened one time when a corn hybrid lost its germination and had to be recalled before it was planted. Fortunately, this was discovered in early March before planting season and the company was able to replace the corn hybrid before it was planted.

The reason I brought this up, is recently we tested some wheat seed where the germination had died between harvest, processing, and the time it got to the retail store to be sold. The importance of seed testing is to identify these problems before the seed gets to the consumer and then fails to grow. Anytime you have a seed lot you would like to have tested, please have your inspector collect a sample so we can confirm the germination for you and your customers.

> Jim True, Inspector Program Coordinator



Emily Hamilton started with our Division on September 5 as a Laboratory Technician Senior working in our sample preparation area. Emily is a native of and currently lives in Mercer County. She received a Bachelor of Science degree in Animal Science from the University of Kentucky in 2019. As a student she worked for the USDA/ARS Forage Animal Production Research Unit. Since graduation she has worked for Alltech and continues to help with the family farm. We are glad to have Emily as part of our laboratory team.

Catherine O'Neal started working as a Research Analyst in our Seed Department on October 2. She will be working with seed germination. Catherine is a native of California and has a Bachelor of Science Degree from Boston University in Biochemistry and Molecular Biology plus a Master's Degree in Biotechnology (also from Boston University). As a student she worked for the Boston University School of Medicine Pulmonary Center Bosmann Lab. Catherine also worked as an intern one summer for the Department of Defense Forensic Science Center in Forest Park, Georgia. She came to us from the UK Medical Center. We welcome Catherine's experience to our seed laboratory.

Upcoming Events

<u>Kentucky AgriBusiness Summit</u> November 7-9, 2023 Holiday Inn Hurstbourne Louisville, KY <u>KY AgriBusiness Summit — AgriBusiness Association of</u> <u>Kentucky (kyagbusiness.org)</u>

Association of American Feed Control Officials (AAFCO) Midyear Meeting

January 23-25, 2023 Chattanooga, TN Midyear and Annual Meetings - AAFCO

Kentucky Farm Bureau 103rd Annual Meeting

November 29-December 2, 2023 Galt House Hotel Louisville, KY

Association of American Plant Food Control

Officials (AAPFCO) Winter Meeting February 18-20, 2023 Renaissance Mobile Riverview Plaza Hotel Mobile, AL <u>AAPFCO Meetings</u>



We at Regulatory Services hope each of you have a Happy Thanksgiving, Merry Christmas and Happy New Year. Regulatory Services News is published by:

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