



OTSC Quarterly Newsletter



Volume 22, No. 1

Office of the Texas State Chemist

February 2015

Virginiamycin in Distillers Grains

Antibiotics are used by the fuel ethanol industry to control bacterial growth that would otherwise compete with the yeast for nutrients during starch fermentation. The presence of bacteria is reported to reduce the ethanol yield by up to 30%. Ethanol is a fermentation co-product with distillers grains, both dried distillers grain (DDG) and wet distillers grain (WG). Both materials are a source of protein and energy in livestock feed.

Virginiamycin is a streptogramin antibiotic, which is in a class of antibiotics that are still effective on VRSA (vancomycin resistant *Staphylococcus Aureus*). OTSC monitors virginiamycin residue in distillers products used in animal feed. If antibiotic residue is detected in the co-product in excess of 0.5 ppm, it could theoretically have a biological effect on livestock. Presently, virginiamycin is ap-

proved for use in medicated feed for cattle, swine and poultry.

Virginiamycin formulations contain two forms, 75% M1 and 25% S1. A liquid chromatography–tandem mass spectrometry method (LC-MS/MS) was developed to screen distiller grains for the M1 component. Since 2010, OTSC investigators have sampled 293 dried distiller grains and 46 wet distiller grains. Of the total 339 samples, one dried distiller grain analyzed at greater than 0.5 ppm virginiamycin M1. This sample was further analyzed for biologically active virginiamycin residues of both M1 and S1 using a microbiology procedure. The confirmation analysis showed the level to be below the 0.5 ppm. These data show that the residual level of virginiamycin in distiller grains available in Texas is of little concern.

Standardization and the Role of Regulatory Science

Advancing the science of creating tools, standards and approaches to assess the safety, efficacy, quality and performance of FDA-regulated products, a working definition of regulatory science by FDA, aligns closely with the Food Safety Modernization Act (FSMA). Intertwined within this definition and implicit within FSMA is a focus on standardization for industry and regulatory agencies alike. As food and feed establishments seek to conform to regulatory requirements within this Act, a parallel activity is underway within the regulatory community involving standardization.

The Animal Feed Regulatory Program Standards (AFRPS), released January 2014, represents the third in a suite of standards designed to achieve consistency, uniformity and reproducibility within and between regulatory agencies. The Manufactured Food Regulatory Program Standards and the Voluntary National Retail Food Regulatory Program Standards were published in September 2010 and January 2013, respectively. The AFRPS, like

the other two regulatory standards, is designed to facilitate the uniform implementation and application of model standards “so that Federal, State, territorial, tribal, and local regulatory agencies conduct inspections under the same set of standards.” To encourage adoption of these program standards, FDA has encouraged Feed Control Officials to perform a self-assessment of their agency’s conformance to the Animal Feed Regulatory Program Standard. The Office of the Texas State Chemist is currently conducting a self-assessment to identify the agency’s strengths and improvement opportunities using the AFRPS.

Once the self-assessment is completed, OTSC will begin implementing actions to improve the agency’s conformance with the AFRPS. Many of the educational outreach activities at the OTSC, including the Regulatory Science Graduate Program and the Feed Industry HACCP courses, align with the Regulatory Program Standards and also assist firms in their pursuit of standardization and regulatory compliance.

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Protects consumers & enhances Agri-Business through its Feed & Fertilizer Regulatory Compliance Program, surveillance & monitoring of Animal-Human health & environmental hazards, & preparedness planning.

Fumonisin Test Kit Evaluation

Since 2009, the Office of the Texas State Chemist (OTSC) has validated aflatoxin test kits approved by the Federal Grain Inspection Service of the Grain Inspection, Packers and Stockyards Administration (GIPSA). OTSC is the only regulatory agency in the US that validates aflatoxin test kits and began this service to assist the industry improve analytical measurement capability. In 2014, OTSC expanded its validation activity to include fumonisin kits in response to a request by the OTSC advisory commit-

tee. A total of four fumonisin kits approved by GIPSA to quantitatively measure fumonisins in grains have been evaluated by OTSC. Some kits show high biases (between 20-40% higher) compared to results measured by the OTSC reference liquid chromatography mass spectrometry method. OTSC is continuing the validation effort for fumonisin kits and will present their results and seek recommendations by the OTSC advisory committee May 7, 2015.

Spring Advisory Committee Meeting

The OTSC advisory committee will meet in College Station, TX May 7, 2015. Topics of the meeting will include ammonium nitrate, validation results for fumonisin test kits and the potential expansion of the one-sample-strategy program to include fumonisin, the OTSC self-evaluation results using the animal feed regulatory program standards, new feed ingredients proposed for use in Texas, and drug use in wild-

life feed. The OTSC advisory committee meets face-to-face twice a year and represents consumer and manufacturer/distributor interests in the feed and fertilizer industry. Members serve four year terms and are nominated by industry/consumer group associations and approved by the Director the Texas A&M AgriLife Research. The advisory committee member names and the group they represent are posted on the [OTSC website](#).

Retirement Announcement

After 35 years with the Office of the Texas State Chemist, Ms. Inez Johnson retired effective January 22, 2015. Inez began her career here at OTSC in January 1980 working in the Agriculture Analytical Services under the supervision of Ms. Pat Chaffin-Supak. While in this position she entered lab results and mailed out chemical reports. In January 1985 she transferred to the Feed & Fertilizer Control Service working under the supervision of the Field Operations Supervi-



sor, Mr. Clarence (Mac) McCurry. After several years she then transferred to the Compliance Section having worked with several Supervisors' including Mr. Roger Hoestebach, Jr. and Dr. Larry Whitlock. Previous to her retirement she held the title of Senior Office Associate and was responsible for daily mail outs of chemical reports, issuing stop sale seizures, bi-weekly & monthly payroll submissions and processing fertilizer registration applications. During her retirement Inez plans to remain active in her church which includes traveling to various church conventions. She also will enjoy more time at Aerofit gym doing water aerobics, weight machines and elliptical. We wish Inez all the best in her retirement.