OTSC Quarterly Newsletter

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OTSC Completes Study of Minerals in Feed Ingredients and Finished Feed

In preparation for the adoption of the Food Safety Modernization Act by the Texas feed industry, the Office of the Texas State Chemist evaluated potential contamination by minerals in feed ingredients and finished feed. The study is comprised of 1466 samples from 18 product categories. The study occurred between 2010 and 2018 with funding assistance from the Food and Drug Administration.

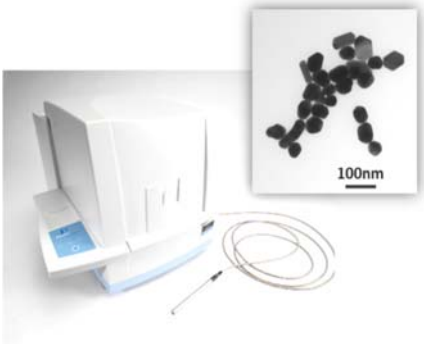
The samples included 11 finished feed types and 7 ingredient types. The 10 minerals considered were arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), molybdenum (Mo), mercury (Hg), nickel (Ni), selenium (Se), and thallium (TI). Cr, Cu, Mo, and Se are essential nutrients, and the other six non-essential minerals (contaminants). Overall, the ratios of mean concentrations of the 6 inorganic contaminants across the 11 finished feeds and the 7 feed ingredients categories were low. Likewise, the ratios of mean concentrations of the 6 inorganic contaminants across the 11 finished feeds compared to the average maximum tolerable level (MTL) across 6 species were very low.

Practically speaking, firms can refer to this work when performing the hazard analysis portion of the food safety plan as evidence of low contamination and low risk associated with heavy metals in animal feed.

The lead author of this work is Dr. Lynn Post. Dr. Post serves as adjunct professor in the Department of Physiology and Pharmacology in the College of Veterinary Science at Texas A&M University and collaborates with OTSC (where his office is located).

Application of Raman spectroscopy for rapid detection and identification of select antimicrobials in animal feeds

OTSC has investigated the feasibility and applicability of surface-enhanced Raman spectroscopy (SERS) as a rapid, simple, and low-cost analytical tool enabling efficient detection and quantification of antimicrobial residues in animal feeds and premixes using the gold nanoparticles-based SERS substrate. The SERS technique has fully demonstrated its potential and applicability as a simple and efficient analytical tool and can be an alternative to standard chemical methods for screening feed products. The developed chemometric models for classification and quantification of antimicrobial levels exhibited high predictive performance and acceptable prediction errors with no misclassification of antimicrobial samples. The SERS technique is worthwhile and provides a simple, rapid, and non-destructive method for routine analysis and real-time monitoring of antimicrobial samples at critical locations in feed distribution systems. With further improvement and advancement in instrumentation and spectral data treatment, SERS can certainly serve as an effective and powerful tool for quality control to help improve the safety of feed products by industry.



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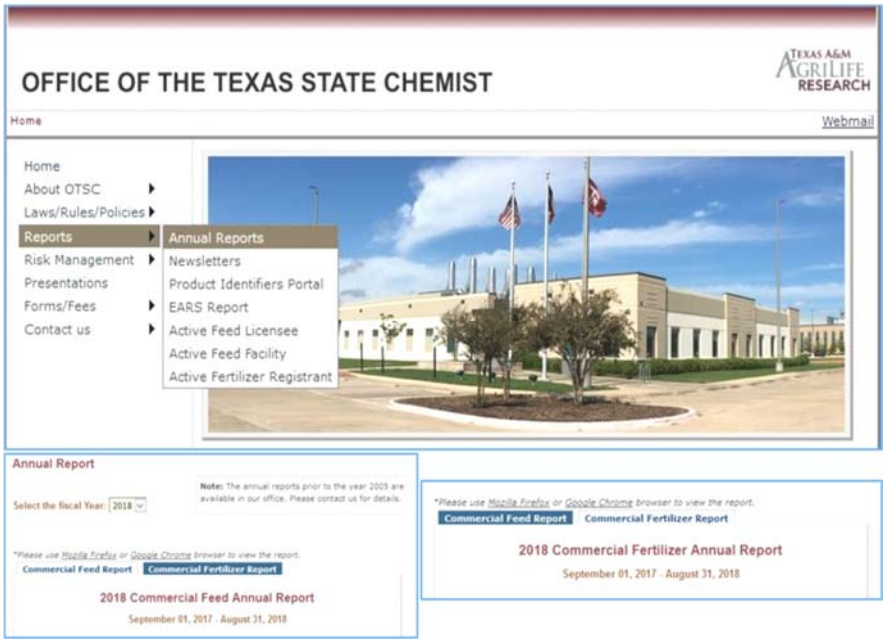
Protects consumers & enhances Agri-Business through its Feed & Fertilizer Regulatory Compliance Program, surveillance & monitoring of Animal-Human health & environmental hazards, & preparedness planning.

Overview of OTSC Annual Report

Every year, Office of the Texas State Chemist publishes a commercial feed and commercial fertilizer annual report, in the first week of September. The main report contains the summary and detailed report of all feed/fertilizer companies (alphabetically) whose product was officially sampled by OTSC and the results of the analysis. Office programs such as inspection fees and financial statement, sampling program, analytical/analyses, feed tonnage distribution and fertilizer grade distribution by quarter or county etc. are covered in the annual report.



In addition the annual report contains a live list of active feed licensee/facilities and their feed products as well as active fertilizer registrants and their fertilizer products. This list is always up-to-date and provides the information to consumer/manufacturers to locate licensed/registered firms and products to conduct their business.

The detailed OTSC annual report can be accessed through the OTSC website main menu using the link *Report > Annual Reports*.

Company Product Identifier Web Portal

In July of each year, OTSC mails the annual product billing to companies for products that are distributed in containers of five (5) pounds or less. The annual product billings only contain the product number assigned by OTSC and a product description. Requests have been made by industry to add a company product identifier to assign to the OTSC product number and product description. The company product identifier can be any unique identifier that a company may use to identify a product. Some company product identifiers that are commonly used are SKU, UPC, or product number. In August 2019, emails were sent to those companies that distribute products in containers of five (5) pounds or less only. The emails contained a link to a web portal to allow the company to enter their company product identifier to products. The company product identifiers will appear on the FY 2021 annual product billing which will assist companies in identifying the correct product.

Utilizing the web portal to enter company product identifiers is an OTSC first step in offering online services for feed/fertilizer companies. Presently, an online web portal for tonnage reporting, firm tonnage lookup, emailing of tonnage reports and other correspondence are being planned for implementation in the near future.