



# OTSC Quarterly Newsletter



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Office of the Texas State Chemist

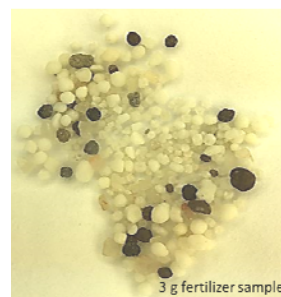
May 2016

## OTSC Fertilizer Mixer Evaluation - Update

Last year, in response to a request from industry, the Office began work on developing performance testing methodology for fertilizer mixers and establishing best practices for optimizing mixer performance. As part of this project, the Office has begun evaluating fertilizer mixers as part of the Texas Feed and Fertilizer Control Service annual plan of work. The fertilizer mixer evaluation involves two components: sample collection at the mixer and lab analysis of the collected samples. Sample collection follows the process outlined by The Fertilizer Institute. Samples are collected from the blended product and from the individual raw materials. The samples from the individual raw materials are analyzed for size guide number (SGN), density, particle number, and nitrogen (N)-phosphorous (P)-potassium (K) levels, and then using the actual formula weights the expected values for the blended product is calculated. The blended product samples are analyzed for N-P-K and a simple statistical analysis is performed to determine average weights for N, P, & K. A calculation is made about what the average analysis of N-P-K should be in the blended product using the weights of the individual raw ingredients. If the average analysis of the blended product does not compare closely to the calculated analysis from the raw ingredients, then “there has been either an equipment problem, such as scale malfunction or misread or a problem in obtaining or analyzing the samples.” To determine efficiency of the mixer, a statistical analysis is also conducted to determine how much variability between various samples of the blended product is acceptable. To date, the Office has collected samples from 8 firms. Firms were selected based type of mix-

er(s) and fertilizer components that they were currently using. A cross section of different type mixers used in industry was selected and includes cement type mixers, vertical mixers, volumetric mixers and a paddle mixer. Other criteria of selection included batch size, specifically in mixers, which were running close to capacity to ensure that the mixer is functioning as close to its design capacity as possible.

Blends tested consisted of varying mixtures of urea, ammonium nitrate, ammonium sulfate, DAP, potash and filler depending on what each firm used as components. The element analyses of available N-P-K levels were performed in OTSC laboratory for the blended product samples.



Overall, the lab results show variation in the component sample particles of N-P-K used in blending fertilizers. Based on these preliminary data, further investigation may still be needed to identify a potential tracer and optimize blending procedure during fertilizer production. The Office will continue to collect samples from fertilizer mixers for further analysis and make recommendations at the next advisory committee meeting. Feed mixer evaluations are also available upon request.

## Ammonium Nitrate Fire Safety Inspection Process Update

The Service promulgated new rules in 2014 in response to legislative intent to require appropriate signage to designate explosive hazard (National Fire Protection Association 704 Warning Placards). During rule making, the Service also required a separation of ammonium nitrate storage by 30 feet from combustible or flammable material, required the owner or operator to register the storage facility in the Tier II Chemical Reporting Program, and submit storage facility information to the Department of Homeland Security (DHS) through the online Chemical Security Awareness Tool. In 2015, during the 84<sup>th</sup> Texas State Legislative session, these rules were codified into statute via HB 942 in Section §63.158.

HB 942 indicates that the Service may direct the owner or operator of the facility to correct any hazardous conditions under §63.158 Subsection (b) and shall direct the owner or operator of the facility to correct a violation of §63.158 Subsection (a) or (c). The Service views the legislative intent of this provision to provide a uniform mechanism for a fire marshal [§63.151 (4)] to report violations to the Service and to direct the owner or operator of the facility to correct the hazardous condition or violation. The firm will be subject to enforcement action (§63.156) by the Service within 10 days for violations under §63.158 Subsection (b) or immediate enforcement action for violations under §63.158 Subsection (a) or (c).

### OTSC POLICY:

#### I. Compliance policy for §63.158 (a)(c)

- Refusal of entry will result in immediate suspension of the ammonium nitrate permit §63.156 (1) (2) and further regulatory action including prosecution described in §63.145.
- Upon notification by the fire marshal that the firm is not in compliance with §63.158 Subsection (c), the Service will notify the firm to correct the deficiency within 10 days. Failure to comply will result in the suspension or revocation of the ammonium nitrate permit §63.156 (1)(2).

#### II. Compliance policy for §63.158 (b)

- Fire marshals shall inspect ammonium nitrate storage facilities and communicate with the Service following a process flow provided, if a hazardous condition is present.
- The facility shall provide the Fire Marshall a corrective action plan, which will be forwarded to the Service.
- The Fire marshal shall notify the Service if the corrective action was not satisfactorily performed by completing and submitting to the Service an ammonium nitrate violation report.
- The Service may notify the firm that they are in violation with the Texas Commercial Fertilizer Control Act [§63.158 Subsection (b)] and shall notify the firm if they are in violation of Subsection [§63.158 Subsection (a) or (c)].
- The Service shall implement enforcement action within 10 days of receipt of an ammonium nitrate violation report.

Visit our website to review the entire Fertilizer Industry Memorandum No. 5-9 Fire Marshal Inspection of Ammonium Nitrate Storage, the compliance policy, and example forms. <http://otscweb.tamu.edu/Laws/PDF/Fertilizer/FertInd-5-9.pdf>

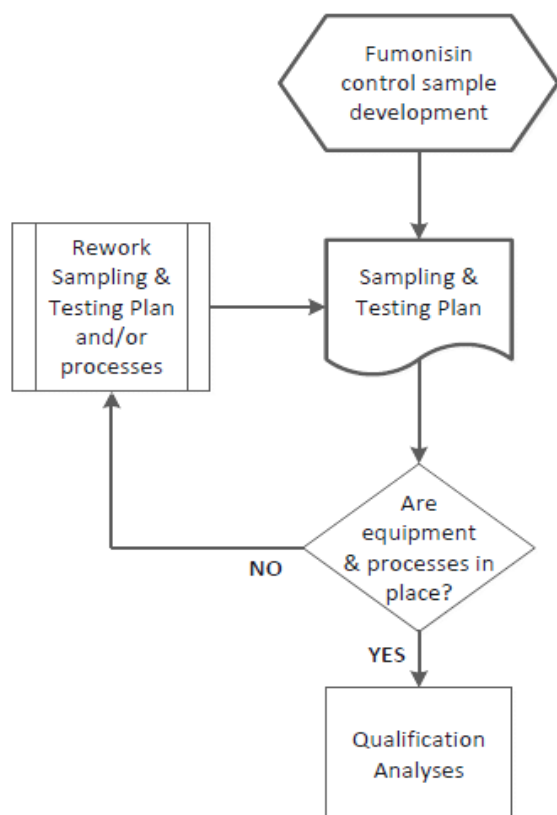
## Proposed Policy of Fertilizer Grade Statements

To address the issue of how fertilizer grade statements are deviating away from the standard definition of N-P-K and extending the grade statement to include beneficial substances and non-plant food ingredients, numerous states have agreed to enforce their existing laws/rules relating to grade statements and adopt the AAPFCO (SUIP#1) Statements of Uniform Interpretation and Policy. At the previous OTSC Advisory Committee meeting, it was decided to create a subcommittee to review the proposed changes and provide recommendations. The proposed OTSC Policy on grade statements was drafted and will be discussed at the upcoming May 18<sup>th</sup>, 2016 Advisory Committee Meeting.

The policy reads, in summary, “The Office of the Texas State Chemist will use the Texas Commercial Fertilizer Control Act (§63.001 Definitions, §63.004 Rules; Standards, §63.021 Grade Statements, §63.051 Labeling of Commercial Fertilizer), AAPFCO (SUIP#1) and OTSC Policy (Fertilizer Industry Memorandum No. 2-1) as guidelines for grade statement requirements. “

## One Sample Strategy Expands to Fumonisin in 2016

The One Sample Strategy (OSS) will expand to include fumonisin in 2016. The program will be piloted at several firms to assess the suitability of this approach to manage fumonisin risk. Similar to aflatoxin, firms will submit a sampling and testing plan that contains details about the equipment and methods the firm will follow. Individual analysts may qualify for the program using any fumonisin kit that is currently approved by the United States Department of Agriculture (USDA) Grain Inspection, Packers, and Stockyard Administration (GIPSA). Control samples with a known level of fumonisin will be provided to firms to verify testing accuracy.



Process flow for fumonisin OSS pilot project

Unlike the aflatoxin program, OTSC has not validated fumonisin kits. Rather, the agency will rely upon verification data comparing the firm's results to those analyzed by the Agricultural Analytical Service of OTSC. Based on results from this year's pilot project, OTSC will explore after-market validation of the fumonisin kits and approach the Risk Management Agency of the USDA for their approval of test results for crop insurance indemnification.

Fumonisin poses a significant animal and human food safety threat. In horses, the toxin causes leukoencephalomalacia or brain liquefaction. However, it has also been associated with esophageal cancer in humans. Over the past 10 years, both the geographical scope and magnitude of fumonisin has increased in Texas (<http://mycotoxinbmps.tamu.edu/mapsupdate.aspx>).

The incorporation of fumonisin into the One Sample Strategy form of co-regulation is in response to requests by the grain industry to extend the same level of risk management that has offered for aflatoxin in Texas. Similar to the aflatoxin program, it will likely be adopted by millers and grain handlers in other states and countries.

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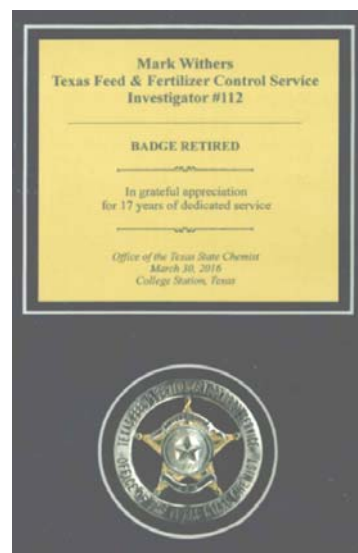
*Protects consumers & enhances Agri-Business through its Feed & Fertilizer Regulatory Compliance Program, surveillance & monitoring of Animal-Human health & environmental hazards, & preparedness planning.*

## Mark Withers Badge Retired

In recognition of 17 years of dedicated service, the Texas Feed and Fertilizer Service (FFCS) badge worn by Mark Withers was retired on March 30, 2016 during the FFCS staff conference in College Station, Texas. Mark, who passed away on October 17, 2015, started his career with the Office as a college intern during his senior year at Tarleton State. Upon completion of his degree in 1998, Mark began working as an FFCS inspector in the Houston area but he soon took an opportunity to move closer to family in Lockhart while working in counties surrounding San Antonio.

In his duties as an Investigator II, Mark demonstrated an unwavering commitment to Texas agriculture. His practical and uniform application of state and federal regulations, intelligence, professionalism and personable approach, especially his sense of humor and kindness, reflects well on the Office.

A plaque placed in honor of Mark's contributions now hangs at the Office of the Texas State Chemist.



## OTSC Bids Farewell to Mick Runyon

After almost 22 years of service with the Office of the Texas State Chemist, Mick Runyon retired effective May 20, 2016.

During his tenure at the OTSC, Mick initially served as an analytical chemist and then transitioned to the role of lead chemist for new microbiological methods/instruments. In addition, Mick leads the Microscopy and Microbiology laboratories and serves the co-administrator of the OTSC's Laboratory Information Management System. Prior to joining the OTSC, Mick worked for the Texas Veterinary Medical Diagnostic Laboratory in their drug testing laboratory.

Mick obtained his BS in Microbiology from Texas A & University and served in the US Army, Artillery Fire Direction Center for 4 years (1.5 years as a Noncommissioned Officer) prior to joining TAMU.



Mick has no definite plans for his retirement, but he assures us that it will not involve any science related activities. In honor of Mick's retirement, the office hosted a breakfast feast on May 20, 2016. Mick has been an invaluable member of the OTSC team and will be missed greatly.