



# Office of the Texas State Chemist

**Roger D. Hoestenbach, Jr.**  
**Associate Director**

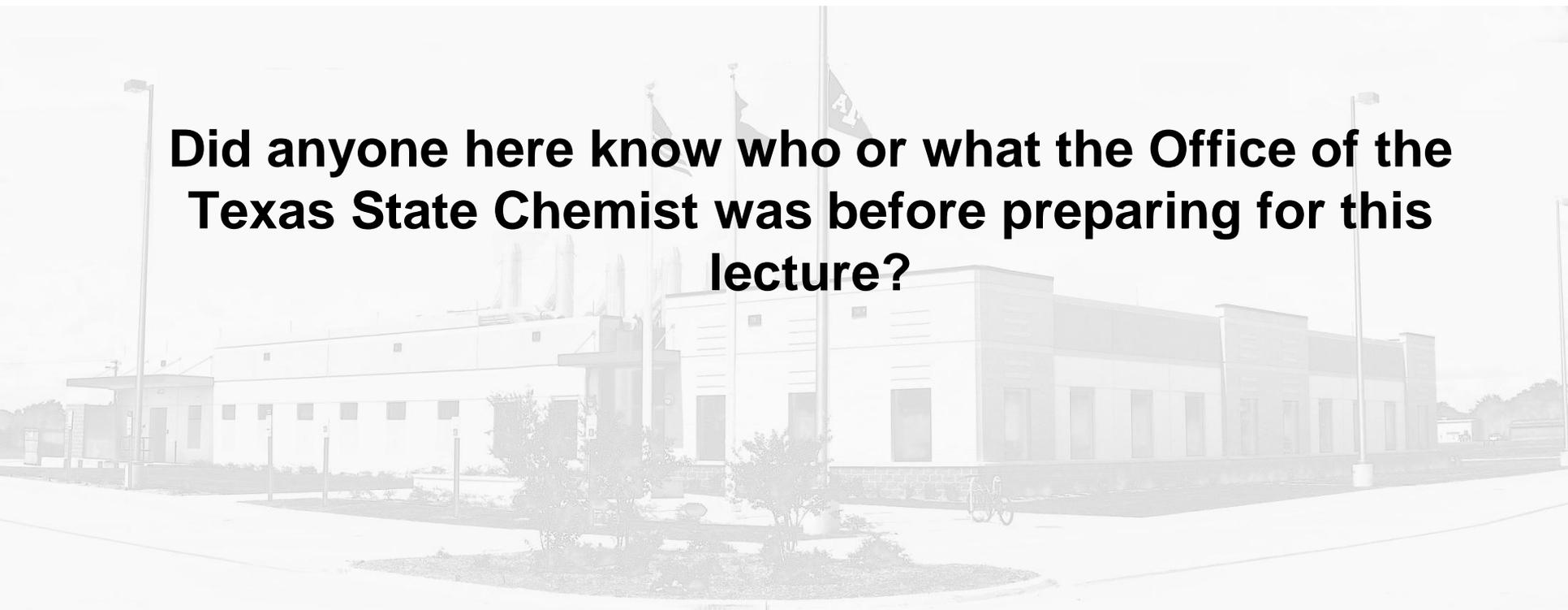
**ANSC623.POSC625 17/1/2013**

**OFFICE OF THE TEXAS STATE CHEMIST**

Texas Feed and Fertilizer Control Service • Agriculture Analytical Service

TEXAS A&M  
**AGRI**LIFE  
RESEARCH

**Did anyone here know who or what the Office of the Texas State Chemist was before preparing for this lecture?**



# The Office of the Texas State Chemist

- ✓ We aren't part of the Department of Agriculture or Health Department;
- ✓ We're not located in Austin; and
- ✓ We're self-funded, do not receive money from either general revenues or from the university

# The Mission of OTSC

- **The Office of the Texas State Chemist protects consumers and enhances agribusiness through its feed and fertilizer regulatory compliance program, surveillance and monitoring of animal-human health and environmental hazards, and preparedness planning.**



# The Office of the Texas State Chemist:

- Inspects products and facilities to determine compliance with both State and Federal Statutes;
- Investigates complaints involving crop loss, animal illness or death, zoonotic diseases and pathogens that are implicated by feeding practices;
- Investigates any improprieties reported to it or encountered during its normal business; and
- Performs Federal inspections/investigations per cooperative agreement and through grants with the Food and Drug Administration.

# The Office of the Texas State Chemist

## FEED

- ~21.2 million tons

## INSPECTION FEES

\$0.19 per ton

## FERTILIZER

- ~2.8 million tons

\$0.36 per ton

# What is a label?

- “a display of written, printed, or graphic matter upon or affixed to the container in which a commercial feed is distributed, or on the invoice or delivery slip with which a commercial feed is delivered.”
- “labeling” is defined as all labels and other written, printed, or graphic matter, including advertisements, brochures, and internet.
- The label is a legal document and constitutes a contract between the manufacturer/guarantor and the purchaser.
- Most food products for humans could not be sold for animal use because of inadequate labeling.

# PURPOSE OF LABELING

- PROVIDE PROTECTION FOR THE CONSUMER AS WELL AS THE REGULATED INDUSTRY
- SAFEGUARD THE HEALTH OF MAN AND ANIMAL
- PROVIDE A STRUCTURE FOR ORDERLY COMMERCE

# Truth in Labeling

- **Type of Product and how it is to be used.**
- **Guaranteed Nutritional Qualities**
- **Listing of Ingredients (Components that make up the product)**
- **Proper Weight as guaranteed.**

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## CATTLEMAN'S SPECIAL FINISHER-Medicated

### For Show Cattle and Feedlot Cattle

For improved feed efficiency in cattle and increased  
rate of weight gain in cattle fed in confinement.

#### Active Drug Ingredient

Lasalocid . . . . . 28 g/ton

#### GUARANTEED ANALYSIS

Crude Protein, Min . . . 10.00%

Crude Fat, Min . . . . . 3.50%

Crude Fiber, Max . . . . . 10.20%

Calcium, Min . . . . . 0.60%

Calcium, Max . . . . . 1.10%

Phosphorus, Min . . . . . 0.35%

Salt, Min . . . . . 0.75%

Salt, Max . . . . . 1.25%

Potassium, Min . . . . . 0.75%

Vitamin A, IU/lb Min. . . . 7500

#### INGREDIENTS

Steam rolled corn, whole oats, crimped barley, cottonseed hulls (8.5%), cane molasses, dehulled soybean meal, dehydrated alfalfa pellets, extruded whole soybeans, peanut hulls (4%), sodium bicarbonate, yeast culture, calcium carbonate, salt, vitamin A supplement, vitamin D3 supplement, vitamin E supplement, riboflavin, niacin, biotin, choline chloride, thiamine, pyridoxine hydrochloride, pantothenic acid, folic acid, vitamin B-12 supplement, zinc amino acid complex, copper amino acid complex, manganese amino acid complex, cobalt glucoheptonate, manganese sulfate, zinc sulfate, ferrous carbonate, copper sulfate, calcium iodate, cobalt carbonate, and sodium selenite.

#### FEEDING DIRECTIONS

Feed 2-2.5 lbs per cwt for desired weight or gain. Always provide plenty of fresh water and high quality roughage if desired.

Manufactured By  
MUNSTER MILLING CO., INC.  
Muenster, TX 76252

**Net Weight 50 lbs (22.68 kg)**  
Item No. 306 (05/07)

50 lbs. NET WEIGHT

ALL AMERICAN  
SWEET MIX FEED

GUARANTEED ANALYSIS

CRUDE PROTEIN-----not less than 10%  
CRUDE FAT-----not less than 1%  
CRUDE FIBER-----not more than 15%

INGREDIENTS

FLAKED BARLEY, WHOLE OATS, YELLOW CORN, MOLASSES

FEEDING DIRECTIONS

ALL AMERICAN SWEET MIX IS NOT INTENDED TO BE A COMPLETE  
FEED. ADDITIONAL SUPPLEMENTATION MAY BE REQUIRED. FEED  
ALL AMERICAN SWEET MIX AS A GRAIN SOURCE.

guaranteed by  
CLAUDE BARRY & CO  
EL PASO, TEXAS

**Suggested Use:**

Foals (over 6 mo.)	1/2 scoop
Adult (idle)	1/2 scoop
Mares (lactating & gestating)	1 scoop
Adult (light work)	1 - 1 1/2 scoops
Adult (intense work)	2 scoops

Vitamin E and Selenium have long been recognized as a potent antioxidants. Antioxidants protect cells from being damaged by free radicals which are unstable molecules. Free radical production is a normal part of metabolism, however production can increase during times of physical or environmental stress.

Servings per container is established at 2 scoops per day.

Vetri-Science Laboratories of Vermont  
A Division of FoodScience Corporation  
20 New England Drive  
Essex Junction, VT 05453 USA

VETRI-SCIENCE  
LABORATORIES OF VERMONT

# EQUINE VITAMIN E-5000 with Selenium

An Antioxidant Supplement for Horses\*

\*This statement has not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure or prevent any disease.

**Two Scoops Provide:**

Vitamin E	2000 IU
Selenium	0.4 mg

**Ingredients:**

Vitamin E Supplement (dl-alpha tocopheryl acetate), Sodium Selenate, Apple Flavor, Dehydrated Alfalfa Meal, Mineral Oil (dust control).

**Guaranteed Minimum Analysis Per Pound:**

Vitamin E	80,000 IU/lb
Selenium	16 mg/lb

Store in a cool, dry place.  
Keep out of reach of children.

SOLD EXCLUSIVELY  
THROUGH VETERINARIANS

9164.10

SERVINGS: 320 NET WT 10 LBS

392502/05

found in the wild, and are often severely lacking in body weight, calories and nutrition. Furthermore, it is likely that the insects have not ingested any food for several days during transportation. It is therefore necessary to feed the feeder insects with GUT LOAD before they are fed to the reptiles.

#### DIRECTIONS

Feed 1/4 teaspoon of GUT LOAD per insect. Allow insects 24 hours to feed, before offering them to reptiles. Always provide insects with a shallow water dish or a slice of potato for moisture.

ESU  
*Reptile*®  
**GUT  
LOAD**

CRICKET AND INSECT FOOD



ESU GUT LOAD  
PROVIDES A  
NUTRITIONAL  
BOOST FOR  
YOUR REPTILE'S  
FEEDER INSECTS.

ESU GUT LOAD CRICKET AND INSECT FOOD provides feeder crickets, meal worms and king mealies with a "super-charge" of carbohydrates, calcium and beneficial calories to make them an ideal food source for reptiles.

Much of the nutritional value of a wild insect is found in its stomach content, or "gut load". Insectivorous reptiles rely just as much on the gut load of an insect for calories and nutrition as they do on the other parts of the insect.

Commercially raised feeder insects do not have access to the variety of vegetation

# Special areas of recent interest include:

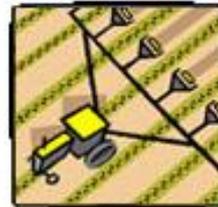
- bioterrorism and biosecurity
- bovine spongiform encephalopathy (BSE), anthrax, foot and mouth (FMD), pox, avian influenza, exotic Newcastle, Salmonella, E. coli
- misappropriation of substances
- “salvage” disposition
- heavy metal contamination and other toxins
- mycotoxins (other toxins) in feedstuffs

# Mycotoxins in Agricultural Commodities

- ❑ **Aflatoxin**
- ❑ **Fumonisin**
- ❑ **Ochratoxin**
- ❑ **Zearalenone**
- ❑ **Vomitoxin (DON, deoxynivalenol)**

# Best Management Practices to Reduce Mycotoxin Contamination

## BEST MANAGEMENT PRACTICES TO Prevent or Reduce Mycotoxin Contamination in Texas

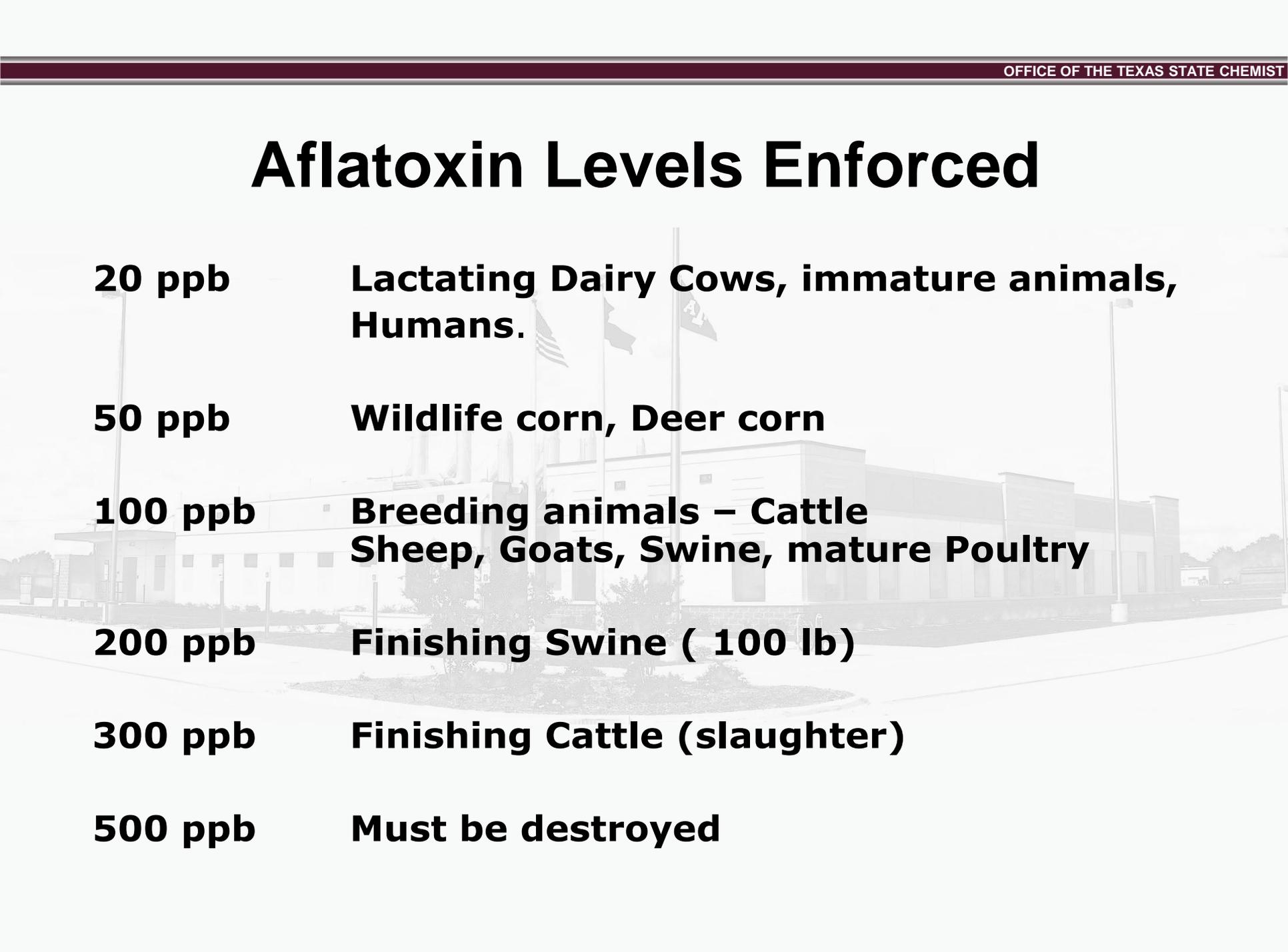


Website: <http://mycotoxinbmps.tamu.edu/welcome.aspx>

# Mycotoxins

- Initial samples represent a survey of new crop, identified to county
- These account for 1200-1500 samples and target corn, peanuts, cotton seed, other grains and their screenings
- Additional samples result from follow-up inspections for regulatory compliance and “trace back” investigations
- average ~ 500 and includes dairy feeds, pet foods, horse feeds, starter rations, etc.

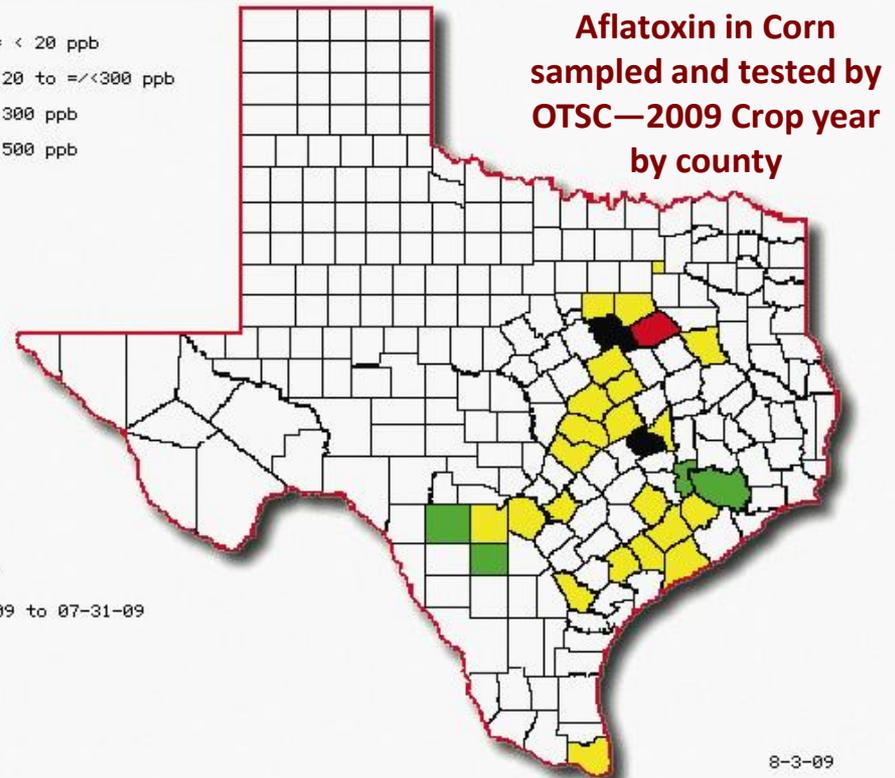
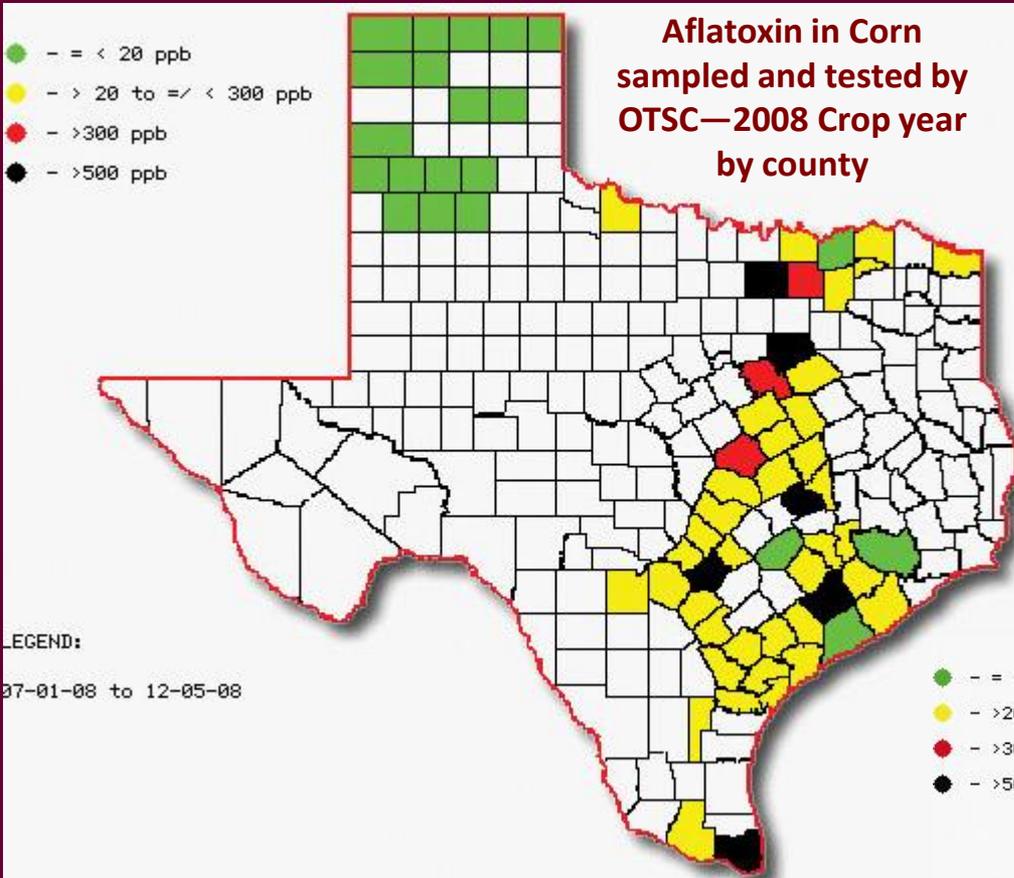
# Aflatoxin Levels Enforced



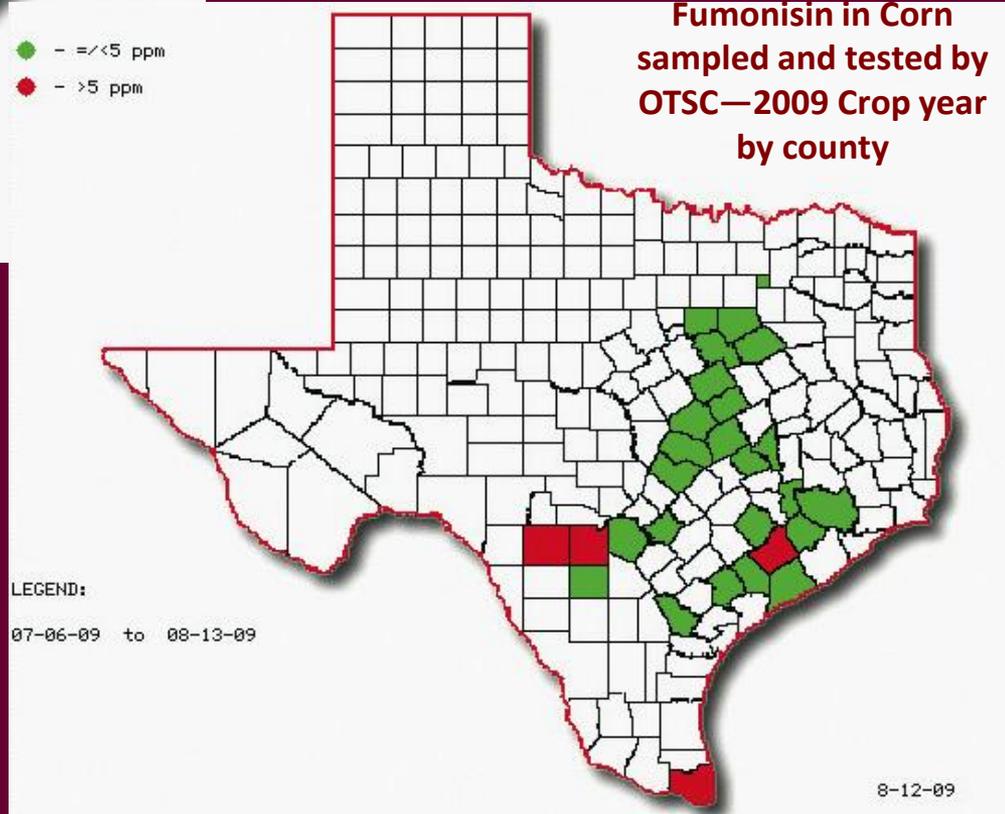
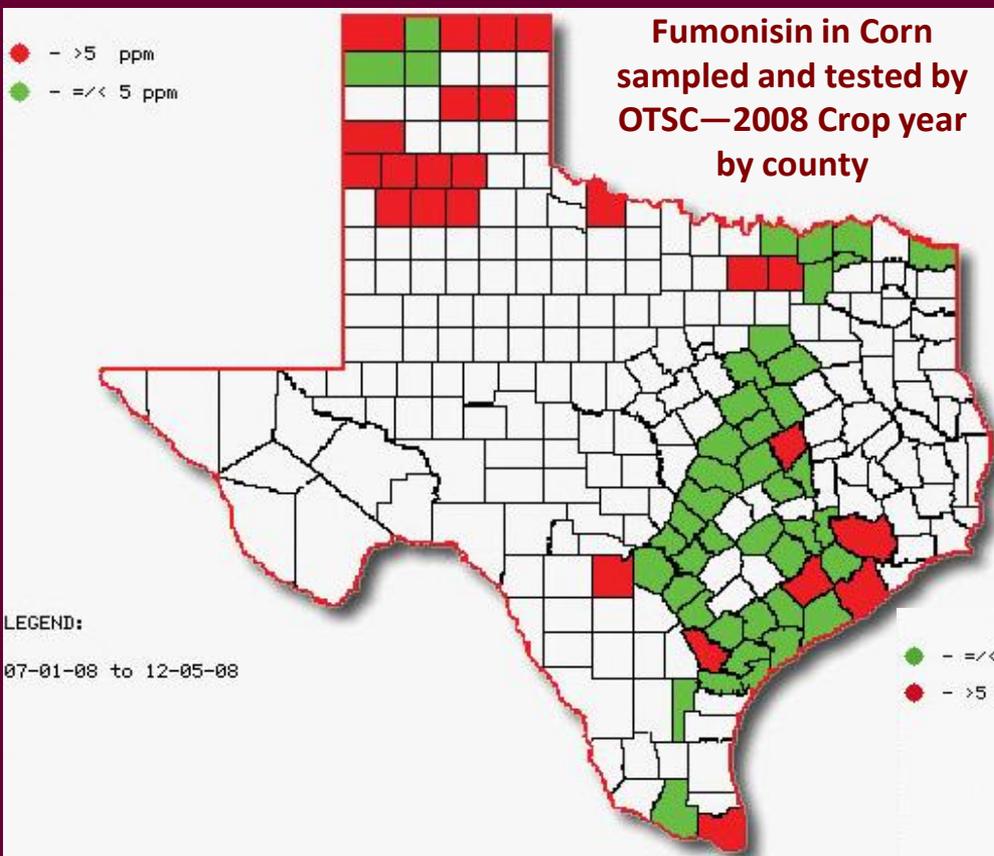
<b>20 ppb</b>	<b>Lactating Dairy Cows, immature animals, Humans.</b>
<b>50 ppb</b>	<b>Wildlife corn, Deer corn</b>
<b>100 ppb</b>	<b>Breeding animals – Cattle Sheep, Goats, Swine, mature Poultry</b>
<b>200 ppb</b>	<b>Finishing Swine ( 100 lb)</b>
<b>300 ppb</b>	<b>Finishing Cattle (slaughter)</b>
<b>500 ppb</b>	<b>Must be destroyed</b>

# Fumonisin Levels Enforced

- **5 ppm**      **Horses and rabbits**
- **20 ppm**    **Swine and catfish**
- **30 ppm**    **Breeding Ruminants, Breeding Poultry, Breeding Mink, Lactating Dairy, Laying Hens**
- **60 ppm**    **Cattle for slaughter, mink for pelts**
- **100 ppm**   **Poultry for slaughter**
- **10 ppm**    **All other species of livestock and pets**

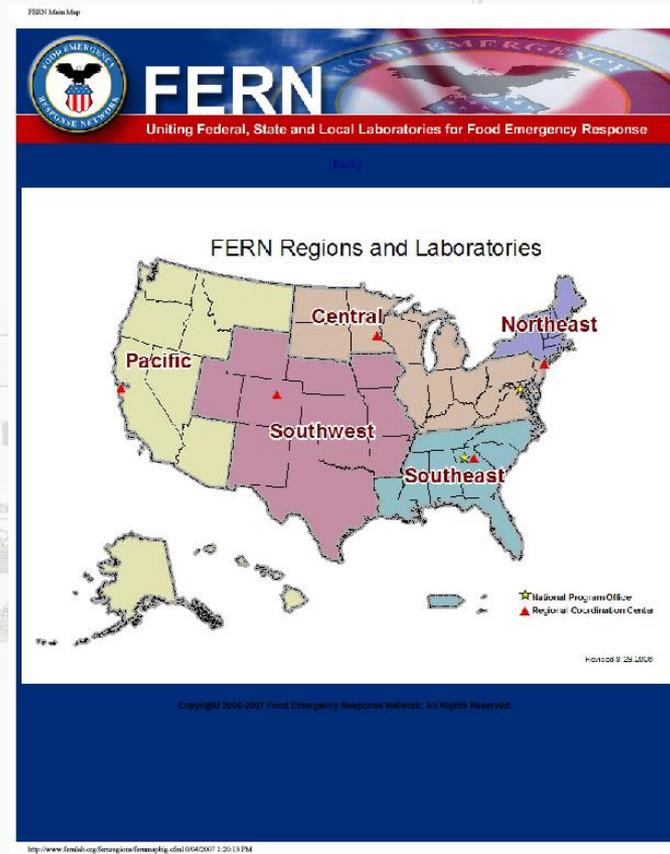


- ✓ Aflatoxins are naturally occurring mycotoxins that are produced by a fungus (*Aspergillus*)
- ✓ Commonly found in crops exposed to high-humidity environment or crops grown in stressful conditions such as drought
- ✓ Aflatoxins, especially B1, are carcinogenic and causes liver damage and cancer



- ✓ **Fusarium verticillioides, produces the mycotoxin fumonisin**
- ✓ **Similar to Aspergillus, the Fusarium fungus infects kernels via the corn silk or in association with insect damage**
- ✓ **Symptoms of Fusarium ear rot are a white-to-pink mold on scattered kernels about the ear**

# Food Emergency Response Network



# Melamine/Cyanuric Acid Largest Recall in History

- ❑ **Toxic element in Pet Foods**
  - **Dog and Cat**
  
- ❑ **Believed to be from Wheat  
Gluten used in the Feed.**



# *Salmonella typhimurium* TM606 Investigation

- *S. typhimurium* TM606 was isolated from reptiles Minnesota, Pennsylvania, and Michigan and implicated in human infections noted by the CDC in those states, as well as, Virginia, Illinois, Kansas, and Iowa
- Frozen mice from Texas suppliers were found to be the likely source of infection
- OTSC worked with several agencies including Dr. Beverlee Nix, Dr. Shelley Stonecipher, James Morgan, Glenna Teltow, Carol Davis, Yolanda Boaz, and Grant Davis with the Department of Health Services



# OFFICE OF THE TEXAS STATE CHEMIST



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**P**rotecting consumers and enhancing agribusiness through its feed and fertilizer regulatory compliance program, surveillance and monitoring of animal-human health and environmental hazards, and preparedness planning.

### Office of the Texas State Chemist

#### FDA Recall Notices & Alerts

Date	Product Type	Short Description
Oct 02, 2012	Pet Food	Kasel Associated Industries Recalls Nature's Deli Chicken Jerky Dog Treats Because of Possible Salmonella Health Risk ...more
Sep 11, 2012	Pet Food	Breeder's Choice Pet Food Recalls AvoDerm Natural Lamb Meal & Brown Rice Adult Dog Formula Because of Possible Salmonella Health Risk ...more
Jul 27, 2012	Pet Food	Arthur Dogswell LLC Voluntarily Recalls Catswell Brand Vitakitty Chicken Breast With Flaxseed And Vitamins Because Of Possible Health Risk ...more

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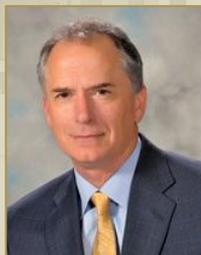
#### What's new

- [Aug 2012 OTSC Newsletter](#)
- [New Regulatory Science Courses Offered - Spring 2013](#)
- [Feed Industry HACCP Website](#)
- [One Sample Strategy Website](#)
- [OTSC Approves Aflatoxin Binders](#)
- [Testing on Private Samples \(09-09-10\)](#)
- [Chemical Facility Act and Appendix A](#)
- [Sale of Ammonium Nitrate in Texas](#)

# Faculty & Online Courses

OFFICE OF THE TEXAS STATE CHEMIST

Spring	Summer	Fall
<p><b>SCSC 634</b>  <b>Regulatory Science:                      Principles &amp; Practices                      in Food Systems</b>                      (3 SCH)</p>	<p><b>VTMI/SCSC 629</b>  <b>Laboratory Quality                      Systems</b>                      (3 SCH)</p>	<p><b>AGEC/SCSC 635</b>  <b>Comparative Global                      Standards in Food Systems</b>                      (3 SCH)</p>
<p><b>AGEC 689</b>  <b>Managerial Economics                      for Regulatory Science</b>                      (3 SCH)</p>		<p><b>SCSC 636</b>  <b>Regulatory Science                      Methodology in Food                      Systems</b>                      (3 SCH)</p>



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 Veterinary Medical Officer  
 (Toxicology)  
 Veterinary Physiology &  
 Pharmacology