



ANALYTICAL SERVICES **MYCOTOXIN** **TESTING**

SGS North America's Agricultural Services laboratories have the facilities, equipment and experience to service your complete food and feed testing needs. SGS routinely tests the quality of dairy products, pet food, livestock feed, co-products and grain. With cutting edge technology and standardized testing methods, SGS laboratories are fully equipped to meet your needs. Our trained scientists and technicians hold advanced degrees in chemistry and microbiology, as well as years of laboratory experience. Our laboratories are ISO 17025 accredited and are recognized by several food and feed associations as approved laboratories.

Mycotoxins are secondary metabolites produced by fungi which contaminate crops and feed products. The formation of mycotoxins is dependent on weather and environmental conditions, making them difficult to control. In addition, mycotoxins can become concentrated in some processing and production of products from these crops and feeds. High levels of mycotoxins in food, pet food and livestock feed can be detrimental to the health of humans and animals. Testing of feed and food materials is necessary to keep these products safe, and many countries have set standards to control the levels of mycotoxins.

COMMON MYCOTOXINS
DEOXYNIVALENOL (DON) OR VOMITOXIN

DON is a trichothecenes produced by various *Fusarium* species and is usually favored by cool, wet weather. DON causes feed refusal, vomiting and immunosuppression.

AFATOXIN

Aflatoxins are a group of mycotoxins consisting of aflatoxin B1, B2, G1, G2 and M1 which are produced by *Aspergillus* species and are usually most severe when drought, extreme heat or injury occurs. Aflatoxins are potent carcinogens.

FUMONISIN

Fumonisin are a group of mycotoxins (B1, B2 and B3) which are produced by several *Fusarium* species. Fumonisin affect primarily corn and are brought

on by drought stress followed by warm wet weather. They have been known to cause pulmonary edema in swine and esophageal cancer in humans.

OCHRATOXIN

Ochratoxin A, B, and C are produced by some *Aspergillus* species and *Penicillium* species. Ochratoxin A is most prevalent and is a carcinogen.

ZEARALENONE

Zearalenone is produced by *Fusarium* species and is favored by cool wet weather. Zearalenone has negative effects on the reproductive system of mammals.

T-2 TOXIN

T-2 Toxin is a trichothecenes produced by various *Fusarium* species and causes severe immunosuppression, vomiting and reduced feed intake.

TESTING METHODS

SGS utilizes both USDA-GIPSA validated ELISA (Enzyme Linked Immunosorbant Assay) testing methods and LC MSMS (Liquid Chromatography with tandem Mass Spectrophotometry), depending on the level of detection and quantification needed.

LC MSMS technology allows for differentiation of mycotoxins within a group and offers very accurate results with a turnaround time of 4 days. ELISA testing returns next-day results and is used as a quick screening method.

SGS reports results quantitatively for both methods, and results are reported as parts per million (ppm) or parts per billion (ppb) depending on the mycotoxin tested.

CONTACT DETAILS

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Maximum acceptable levels for total diet(1)					Detection capabilities(2)	
Mycotoxin	Humans	Beef	Swine	Poultry	ELISA(3)	LC MSMS(4)
DON	<1ppm	5ppm	1ppm	5ppm	25ppb - 5ppm	0.1ppb - 15ppm
Aflatoxin	20ppb	100ppb for breeding; 300ppm	100ppb for breeding; 200 ppm	100ppb	1ppb - 80ppb	1ppb - 100ppb
Fumonisin	2ppm	15ppm for breeding; 30ppm	10ppm	15ppm for breeding; 50ppm	50ppb - 6ppm	2ppb - 10ppm
Ochratoxin		No established levels			2ppb - 25ppb	1ppb - 1000ppb
Zearalenone		No established levels			25ppb - 500ppb	0ppb - 1000ppb
T-2 Toxin		No established levels			25ppb - 250ppb	20ppb - 1000ppb

(1) FDA established acceptable levels for different mycotoxins
 (2) Samples can be diluted for extended range.
 (3) Turnaround Time for ELISA testing - Next day.
 (4) Turnaround Time for LC MSMS testing - 4 day. Rush capability for an additional fee.

SGS IS THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY

WHEN YOU NEED TO BE SURE

