



NGFA Alert: Mycotoxins

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Given crop conditions this season in some regions of the country, the NGFA is taking the opportunity to remind the industry of the U.S. Food and Drug Administration’s (FDA) current action levels for aflatoxin, as well as its regulatory guidance for fumonisin and vomitoxin levels. The FDA has issued regulatory guidance for these three mycotoxins, which may be present in raw grains, feed ingredients and finished feed.

Types of Regulatory Guidance Issued by the FDA

- **Advisory Levels:** Represent levels of a substance that, when present in food or feed, are believed by the agency to provide an adequate margin of safety to protect human and animal health.
- **Action Levels:** Specify a precise level of contamination at which the agency is prepared to take a regulatory action.
- **Regulatory Limits:** Create limits for the presence of toxins or contaminants that have been established after issuing valid regulations under the public notice-and-comment rulemaking procedures set forth in the Administrative Procedures Act. FDA currently has not established regulatory limits for mycotoxins found in food or feed, although it has stated its intent to eventually establish regulatory limits for aflatoxin.

In complying with federal and state law, for most purposes a grain, grain byproduct, feed or other food product is considered to be adulterated if it contains a level of mycotoxin that is at or above the action or advisory limit established by FDA for the product’s intended purpose. Importantly, while FDA recognizes commingling, the agency does *not* permit grain, grain by-products, feed or other food products containing mycotoxin levels to be blended with uncontaminated commodities or products with lesser mycotoxin levels as a way to reduce the mycotoxin content of the resulting mixture to levels acceptable for human or animal food unless *all of the mixed lots were at mycotoxin levels acceptable for the intended species.* As an example, mixing corn containing aflatoxin at levels of up to 300 parts per billion (p.p.b.) is permitted so long as the resulting mixture is fed only to mature beef cattle, swine or poultry (see nearby chart). Conversely, the mixture resulting from blending corn with aflatoxin of up to 300 p.p.b. with corn with lower aflatoxin levels could *not* be fed to breeding cattle *even if* the resulting mixture was less than 100 p.p.b., since some of the corn used in the mixture was at levels greater than 100 p.p.b.

Aflatoxin: FDA’s current action levels for grain, grain by-products, feed and other products based upon intended use.

FDA Action Levels for Aflatoxin in Human Food, Animal Feed and Animal Feed Ingredients		
Intended Use	Grain, Grain By-Product, Feed or other Products	Aflatoxin Level parts per billion (p.p.b.)
Human consumption	Milk	0.5 p.p.b. (aflatoxin M1)
Human consumption	Foods, peanuts and peanut products, brazil and pistachio nuts	20 p.p.b.
Immature animals	Corn, peanut products, and other animal feeds and ingredients, excluding cottonseed	20 p.p.b.
Dairy animals, animals not listed below, or unknown use	Corn, peanut products, cottonseed, and other animal feeds and ingredients	20 p.p.b.
Breeding cattle, breeding swine and mature poultry	Corn and peanut products	100 p.p.b.
Finishing swine 100 pounds or greater in weight	Corn and peanut products	200 p.p.b.
Finishing (i.e., feedlot) beef cattle	Corn and peanut products	300 p.p.b.
Beef, cattle, swine or poultry, regardless of age or breeding status	Cottonseed meal	300 p.p.b.



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Fumonisin: FDA's maximum levels for food and feed that the agency "considers adequate" to protect human and animal health.

FDA Guidance for Fumonisin Human Foods	
Product	Total Fumonisin (FB ₁ +FB ₂ +FB ₃) parts per million (p.p.m.)
Degermed dry milled corn products (e.g., flaking grits, corn grits, corn meal, corn flour with fat content of <2.25 %, dry weight basis)	2 p.p.m.
Whole or partially degermed dry milled corn products (e.g. flaking grits, corn grits, corn meal, corn flour with fat content of ≥2.25% dry weight basis)	4 p.p.m.
Dry milled corn bran	4 p.p.m.
Cleaned corn intended for masa production	4 p.p.m.
Cleaned corn intended for popcorn	3 p.p.m.

FDA Guidance for Fumonisin Animal Feed	
Animal Species/Class	Total Fumonisin (FB ₁ +FB ₂ +FB ₃) parts per million (p.p.m.)
Horses and Rabbits	5 p.p.m. (no more than 20% of diet)**
Swine and Catfish	20 p.p.m. (no more than 50% of diet)**
Breeding Ruminants, Breeding Poultry and Breeding Mink*	30 p.p.m. (no more than 50% of diet)**
Ruminants three months of age or older being raised for slaughter; Mink being raised for pelt production	60 p.p.m. (no more than 50% of diet)**
Poultry being raised for slaughter	100 p.p.m. (no more than 50% of diet)**
All other species or classes of livestock and pet animals	10 p.p.m. (no more than 50% of diet)**

* Includes lactating dairy cattle and hens laying eggs for human consumption
 ** Dry weight basis

Deoxynivalenol (Vomitoxin): FDA's maximum advisory levels for grain and grain by-products used in human foods and complete animal feed diets.

FDA Advisory Levels for Vomitoxin		
Intended Use	Grain or Grain By-Products	Vomitoxin Levels in Grains or Grain By-Products and Complete Diet** parts per million (p.p.m.)
Human Consumption	Finished wheat products	1 p.p.m.
Swine	Grain and grain by-products not to exceed 20% of diet	5 p.p.m. (1 p.p.m.)**
Chickens	Grain and grain by-products not to exceed 50% of diet	10 p.p.m. (5 p.p.m.)**
Ruminating beef and feedlot cattle older than 4 months	Grain and grain by-products *	10 p.p.m. (10 p.p.m.)**
Ruminating dairy cattle older than 4 months	Grain and grain by-products not to exceed 50% of diet *	10 p.p.m. (5 p.p.m.)**
Ruminating beef and feedlot cattle older than 4 months, and ruminating dairy cattle older than 4 months	Distillers grains, brewers grains, gluten feeds, and gluten meals *	30 p.p.m. (10 p.p.m. beef/feedlot)** (5 p.p.m. dairy)**
All other animals	Grain and grain by-products not to exceed 40% of diet	5 p.p.m. (2 p.p.m.)**

* 88 percent dry matter basis ** complete diet figures shown within parentheses

NGFA Reference Corner

[FDA Mycotoxin Regulatory Guidance - NGFA](#)

[FDA Action Levels for Poisonous or Deleterious Substances in Human Food and Animal Feed](#)

[FDA Advisory Levels for Deoxynivalenol \(DON\) in Finished Wheat Products for Human Consumption and Grains and Grain By-Products used for Animal Feed](#)

[FDA Fumonisin Guidance Levels in Corn for Human Consumption and Animal Feed](#)

More safety and feed information at www.ngfa.org or contact: Senior VP of Feed Services David Fairfield or Manager of Regulatory Affairs, Education and Training Jim Seibert at 202-289-0873