

Mycotoxins in Feeds: CVMs Perspective

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Action levels for total aflatoxins in livestock feed

Class of Animals	Feed	Aflatoxin Level
Finishing beef cattle	Corn and peanut products	300 ppb
Beef cattle, swine or poultry	Cottonseed meal	300 ppb
Finishing swine over 100 lb.	Corn and peanut products	200 ppb
Breeding cattle, breeding swine and mature poultry	Corn and peanut products	100 ppb
Immature animals	Animal feeds and ingredients, excluding cottonseed meal	20 ppb
Dairy animals, animals not listed above, or unknown use	Animal feeds and ingredients	20 ppb

Guidance levels for total fumonisins in animal feeds

Class of Animal	Feed Ingredients & Portion of Diet	Levels in Corn & Corn By-products	Levels in Finished Feeds
Equids and Rabbits	Corn and corn by-products not to exceed 20% of the diet **	5 ppm	1 ppm
Swine and Catfish	Corn and corn by-products not to exceed 50% of the diet**	20 ppm	10 ppm
Breeding Ruminants, Breeding Poultry and Breeding Mink*	Corn and corn by-products not to exceed 50% of the diet**	30 ppm	15 ppm
Ruminants >=3 Months Old being Raised for Slaughter and Mink being Raised for Pelt Production	Corn and corn by-products not to exceed 50% of the diet**	60 ppm	30 ppm

Poultry being Raised for Slaughter	Corn and corn by-products not to exceed 50% of the diet**	100 ppm	50 ppm
All Other Species or Classes of Livestock and Pet Animals	Corn and corn by-products not to exceed 50% of the diet**	10 ppm	5 ppm

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

Advisory levels for vomitoxin (DON) in livestock feed

Class of Animal	Feed Ingredients & Portion of Diet	DON Levels in Grains & Grain By-products and (Finished Feed)
Ruminating beef and feedlot cattle older than 4 months	Grain and grain by-products not to exceed 50% of the diet	10 ppm (5 ppm)
Chickens	Grain and grain by-products not to exceed 50% of the diet	10 ppm (5 ppm)
Swine	Grain and grain by-products not to exceed 20% of the diet	5 ppm (1 ppm)
All other animals	Grain and grain by-products not to exceed 40% of the diet	5 ppm (2 ppm)

Ochratoxin A

- Produced by *Aspergillus sp. (A. ochraceus)* and *Penicillium sp. (P. viridicatum)*
- Highest levels usually found in cereal grains (corn, barley, wheat and rye)
- At least nine ochratoxins identified, but ochratoxin A is the most common and has the greatest toxicological significance
- Nephrotoxic and a suspected carcinogen
- No FDA action, advisory or guidance levels established for ochratoxin A in US feed

Zearalenone

- Produced by *Fusarium sp. (primarily F. graminearum)*
- Common substrates are corn, wheat, barley, occasionally oats
- Production favored by high humidity and low temperatures
- Estrogenic mycotoxin, swine most susceptible vulvar swelling in gilts
- Toxicity related to reproductive system
- No FDA action, advisory or guidance levels established for zearalenone in US feed