

INTEGRATED CROP MANAGEMENT

FDA releases guidelines for fumonisins in corn

Last month, the U.S. Food and Drug Administration (FDA) released its official guidelines for safe levels of fumonisins in corn used for foods and animal feeds. Fumonisins are mycotoxins produced by species of *Fusarium* fungi that cause Fusarium ear rot. Fumonisins are the most common mycotoxins found in corn; because they are acutely toxic to animals (especially pigs and horses), and have been linked to increased cancer rates and other human health problems, the FDA feels that "human health risks associated with fumonisins are possible."



[Enlarge](#) [1]

Fusarium ear rot is the most common fungal disease on corn ears. It is caused by several species of *Fusarium*. Symptoms of Fusarium ear rots are a white to pink- or salmon-colored mold, beginning anywhere on the ear or scattered throughout. Often the decay begins with insect-damaged kernels. Usually it does not involve the whole ear. Infected kernels are often tan or brown, or have white streaks. These fungi can produce mycotoxins known as fumonisins.

These guidelines are NOT equivalent to "action levels," such as those existing for aflatoxins. The guidelines have been released by the FDA to provide information about what the agency "considers adequate to protect human and animal health and that are achievable in human foods and animal feeds with the use of good agricultural and good manufacturing practices." Thus, no actions will be taken by the FDA to enforce these levels: they are only guidelines.

The information from FDA can be found at [here](#) [2]. Other resources include an [article](#) [3] written by several mycotoxin researchers (including myself) with some perspective on how these guidelines might affect industry. For information about corn ear rots and mycotoxins, see ISU Extension publication PM 1698, *Corn Ear Rots, Storage Molds, Mycotoxins, and Animal Health*.

Guidelines for safe levels of fumonisins in human foods and animal feeds proposed by U.S. Food and Drug Administration (2001).

Product or Animal Species	Concentration (parts per million)
Human foods	
Dry milled products	4
De-germed dry milled products	2

Corn for masa	4
Dry milled corn bran	4
Popcorn	3

Animal feeds	Corn Portion of Diet	Total Diet
Horses	5	1
Rabbits	5	1
Catfish	20	10
Swine	20	10
Ruminants	60	30
Mink	60	30
Poultry	100	50
Ruminant, mink, and poultry breeding stock	30	15
All others (including dogs and cats)	10	5

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Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2001/12-24-2001/guidelines.html>

Links:

[1] <http://www.ent.iastate.edu/imagegal/plantpath/corn/fusarium/1355.42fusariumearrot.html>

[2] <http://www.cfsan.fda.gov/~dms/fumongu2.html>

[3] <http://www.apsnet.org/online/feature/mycotoxin/>

IOWA STATE UNIVERSITY
University Extension