

Vomitoxin (DON - Deoxynivalenol) Fact Sheet



Background Information: Deoxynivalenol (DON) is a *Fusarium*-produced mycotoxin. It is most commonly referred to as “Vomitoxin”, because of one of its potential side-effects of vomiting.

Major crops affected: Cereal grains and their corresponding silages.

Associated Mold: *Fusarium sp.*

Conditions favoring production: Wet, rainy and humid weather from flowering to harvest in corn and small grains. The results are *Gibberella ear rot* in corn and scab or head blight in sorghum, barley, wheat, oats and rye. Low temperatures following infection may increase DON production. DON can proliferate in stored grain with high moisture contents.

Symptoms: Digestive disorders (vomiting, diarrhea, reduced feed intake, & feed refusal); reduced feed efficiency, reduced weight gain or slowed growth; anorexia (DON increases the secretion of satiety hormones in the gastrointestinal tract, subsequently disturbing the levels of serotonin in the brain, & therefore leads to changes in appetite. Also, DON induces the up-regulation of pro-inflammatory cytokines, and with an increased concentration of cytokines in the brain leads to reduced feed intake.); depression; hemorrhages (stomach, heart, intestine, lung, bladder, & kidney); edema (inflammation); oral lesions; dermatitis; blood disorders (anemia & leukopenia); infertility & abortions; immunosuppression; and even mortality.

Interpretation Guidelines

Detection Limit	Concern Level* (TRDM)	Potentially Harmful Level** (TRDM)	
		Cattle	Swine
0.1 ppm	0.56 ppm	2.5-6.0 ppm	0.6-1.0 ppm

*Level indicating possible favorable conditions for mycotoxins and probable need for further testing of all feeds or the TMR. Pending further tests, negative samples should be considered at concern levels in the presence of moderate symptoms and at harmful levels with marked symptoms. Limit amounts fed if moderate performance effects are present. Discontinue use at least temporarily if pronounced performance effects or acute clinical symptoms are present. Closely observe animals and continue checking for other possible causes.

**Mycotoxins at these levels indicate probable involvement in performance effects or acute clinical symptoms. Discontinue feeding at least temporarily in the presence of either type of symptoms. Observe animals closely in the absence of symptoms and do further testing of all feeds or the TMR.

TRDM = Total Ration Dry Matter

Dairyland Lab Packages that include Vomitoxin (DON):

- Individual Mycotoxin request
- Mycotoxin Basic Package
- Mycotoxin Select Package
- Mycotoxin Complete Package

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FDA Advisory Levels

Class of Animal	Feed & Portion of the Diet	DON Levels in Feed Ingredients	DON Levels in Total Ration
Ruminating beef and feedlot cattle older than 4 months	Grain and grain by-products	10 ppm	10 ppm
	Distillers grains, brewers grains, gluten meals, and gluten feeds derived from grains not to exceed 33% of total ration	30 ppm	10 ppm
Ruminating dairy cattle older than 4 months	Grain and grain by-products not to exceed 50% of the total ration	10 ppm	5 ppm
	Distillers grains, brewers grains, gluten meals, and gluten feeds derived from grains not to exceed 17% of the total ration	30 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

Sources

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