



Wheat Scab: Feeding Ingredients Infected with *Fusarium graminearum* to Beef Cattle

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Reports of wheat infected with scab or a fungus referred to as *Fusarium graminearum* are coming in from across Wisconsin this year. *Fusarium graminearum* is of concern as monogastric species are sensitive to mycotoxins produced by the fungus commonly referred to as vomitoxin (deoxynivalenol or DON) and zearalenone. These mycotoxins have not been shown to be carcinogenic or toxic, but suppress performance of livestock consuming infected grains. In 1982, wheat samples submitted from NE and Kansas showed contamination of multiple mycotoxins including DON with aflatoxin. Therefore, it is important to consider the possibility of other mycotoxins being present in small grains being harvested this year.

Caution is recommended when feeding ingredients suspected to be infected with these mycotoxins. Recommended upper limits for inclusion levels of the mycotoxins of concern from wheat scab are listed in Table 1 and 2.

Ruminants are less susceptible to these classes of mycotoxins than swine. In relation to DON, dairy cattle were offered levels of 6.4 ppm and 12 ppm (dry and lactating) for 42 or 70 days, respectively, with no detrimental impacts on milk production, body weight, or milk composition. In the dry cow trial, it was noted that intakes were lower for rations containing higher levels of vomitoxin. In a sheep trial, feeding a ration containing wheat with dietary DON level of 15.5 ppm to lambs for 28 days did not influence intake, gain, efficiency, or any of the blood/serum variables investigated. Minnesota and North Dakota conducted feeding trials in the mid-1990's. NDSU results found differences for finishing diets containing infected barley with up to 12.5 ppm of DON were fed for 100 days. Two University of Minnesota trials did not see any differences in performance responses for barley-based diets containing DON up to 21 ppm and fed for 144 days.

Zearalenone possesses estrogenic-like activity and can induce reproductive problems in females such as abortions, prolapses, false heats, and others. These reproductive related responses are more apparent in heifers than mature cows. Males may also be affected. Feeding contaminated wheat containing 10 ppm of DON and 0.76 ppm of zearalenone was shown to reduce testicle weight in growing bulls with no impact on performance.

For additional information contact your county extension agricultural agent.

Table 1. Suggested Maximum Tolerable Levels in Diets offered to Beef Cattle (reported as ppm of diet dry matter).

	DON	Zearalenone
Mature cows	15	10
Replacement heifers	15	5
Growing/Finishing	15	5

Source: University of Kentucky CES publication ID-121

Table 2. United States Food and Drug Administration advisory levels for maximum concentration levels of vomitoxin in grains and grain by-products.

10 ppm	Ruminating beef and feedlot cattle older than 4 months of age with the added recommendation that the infected ingredients not exceed 50% of the diet.
5 ppm	All other classes with the recommendation that the infected ingredients not to exceed 40% of the diet.

Contact information of laboratories that can test feeds for mycotoxins

Dairyland Laboratories

217 East Main St., Arcadia, WI Phone 608-323-2123

Turn around time three to five days

Notification of results by phone, fax, or e-mail with a mailed test result certificate

DATCP Grain Inspection Office

404 Tower Ave. Superior, WI Phone 715-392-7850

Turn around time generally same day sample is received

Notification of results by Phone, fax, with mailed test results certificate.

Milwaukee Inspection Service

7070 Cypress Ct., Franklin, WI 53132 Phone 414-881-4191

Turn around time is same day sample received

Notification of results by phone, fax, with mailed test results certificate.

*At all three laboratories the shipper pays the shipping costs; and a one pound sample is requested.