



# Beef Briefs

## The Latest Information on Beef Cattle Nutrition



### Managing Mycotoxins

By: Laura Martin M.Sc.

The 2018 corn crop in southwestern Ontario was hit with high mycotoxin levels, which has left many farmers scrambling to find other feed sources. However, ruminants have an extraordinary ability to detoxify most mycotoxins, so should beef farmers be concerned?

#### Mycotoxins and Moulds



- Mycotoxins are produced by mould on grain and grain forage crops
- Only some moulds actually produce mycotoxins
- Moulds produce mycotoxins when they are "stressed" - for example, drought
- Just because a crop is mouldy doesn't mean it has mycotoxins
- Sometimes the cleanest looking crop can have the highest toxin load
- Mould causes its own problems
  - feeds are not very palatable
  - can cause reduced feed intakes
- Even without mycotoxins present, moulds can reduce performance by 5 – 10%
- Symptoms (decreased intake/growth/reproduction) can be caused by many different things on a farm – hard to prove it's mycotoxins

#### Testing for Mycotoxins

- Testing crops is the only way to tell if mycotoxins are present
- Commercial laboratories can test for a range of mycotoxins

Cont. >>

#### Inside this Issue:

Managing Mycotoxins  
By Laura Martin  
M.Sc.

### KENPAL'S KING OF CREEP

A HIGHLY-PALATABLE CREEP FEED FOR CALVES



- Developed to promote feed intake in calves
- Helps increase weaning weights
- Helps achieve and maintain a healthy hair coat
- See results with top sale prices for calves

### GETS CALVES OFF TO THE RIGHT START

Volume 12, Issue 1  
January 2019

- Getting a good sample can be a problem
  - Mould typically grows in pockets in the field and in storage
- If a sample tests high it doesn't mean the whole crop is that high and vice-versa
- Moulds and mycotoxins can continue to form in a sample after it has been collected
  - Get samples to the lab asap

### **Vomitoxin (DON)**

- DON is one of the most prevalent mycotoxins found in feeds
- DON is a big concern for the swine industry - can cause feed refusals and vomiting
- DON research shows very little impact on beef cattle
- Beef cattle fed diets with 10 ppm DON showed no effect on intakes, gain, or feed efficiency (Nelson et al. 1984)
- Research from Minnesota showed that even as high as 18 ppm DON had no effect on performance
- The CFIA guidelines for adult cattle recommend total diets be under 5 ppm for DON

### **Zearalenone (ZEA)**

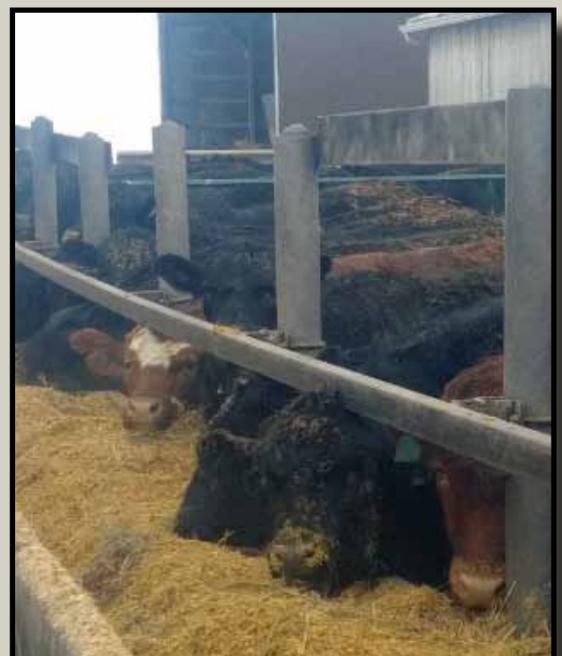
- ZEA is an estrogen-like mycotoxin
- The effects of ZEA on beef cattle are not well studied
- Heifers fed almost 25 ppm of ZEA showed no obvious effects, but did see reduced conception rate (Weaver et al. 1986)

### **Ruminants can Handle Toxins**

- Rumen microbes get first crack at any toxins that cattle consume
- In most cases, mycotoxins are converted into a less toxic compound
- Mycotoxin contaminated feed has lower nutrient value
  - May cause the negative impact on production seen from toxins
- Rations can be balanced to take this into account and correct any potential problems

### **Feeding High Toxin DDGS**

- DDGS, a cost-effective protein source, can be highly contaminated with mycotoxins
- Production of DDGS can triple the toxin level from the original corn



Toxin Calculator		
Feed	Toxin Level (ppm)	LBS As Fed in diet
Dry Corn	5.00	17.00
DDGS	15.00	5.50
Corn Silage	2.50	16.50
Total Feed Intake (LBS as fed)		42
TMR Toxin Level (ppm)	4.97	

A typical top end feedlot cattle diet, focusing on toxin sources (dry corn, silage and DDGS)

### Dilution is the Solution

- Dilute high toxin feeds with low toxin feeds - haylage or clean grains
- Wheat has been testing clean, but may be at a premium as swine farmers gobble up supply
- Reduce further mould and mycotoxin growth by managing corn silage/HMC storage
- Throw away visibly mouldy feed and keep ahead of surface spoilage
- Store dry feed away from the elements
- Adding vitamin E and selenium may help cattle deal with any immune effects from mycotoxins

### “Toxin Binders”

- Feed additives can be added to rations that are believed to help bind mycotoxins
- Most of these are not cleared as “toxin binders” by the CFIA but are instead listed as flow agents, pellet binders, enzymes or value-added yeast products
- These products can be expensive
- Many of these binders are non-specific and may bind nutrients as well as mycotoxins
  - Could have a negative impact on performance, especially if fed at high levels

While cattle can handle higher levels of toxins than monogastrics, feed contaminated feeds with caution and keep an eye on animal performance. Test feeds so that you know what you are dealing with and discuss the results with your nutritionist and veterinarian before resorting to using an expensive mycotoxin binder. Ruminants have proven, again, that they are superior to the monogastric species with their ability to take feed that nothing else can eat and turn it into a profit for the farmer.



**MINERAL MATTERS!**

## **FEEDLOT PRODUCTS**

**DESIGNED FOR RECEIVING, BACKGROUNDING AND FINISHING BEEF CATTLE**



- **CONTAIN OPTIMUM LEVELS OF TRACE MINERALS AND VITAMINS, INCLUDING THIAMINE.**
- **GOOD NUTRITION HELPS SUPPORT IMMUNE FUNCTION OF CATTLE.**
- **ECONOMICAL TO USE.**

**Nutrition that enhances health, performance and results!**

**CONTACT KENPAL OR YOUR LOCAL KENPAL SALES REPRESENTATIVE TODAY**

69819 London Road, RR#1 Centralia, Ontario, Canada, N0M 1K0

Tel: 519-228-6444 or 1-800-265-2904 • Fax: 519-228-6560

Email: [kpalen@kenpal.on.ca](mailto:kpalen@kenpal.on.ca) • [www.kenpal.on.ca](http://www.kenpal.on.ca)



**WE APPRECIATE YOUR BUSINESS**

69819 London Road, RR #1, Centralia, Ontario, Canada, N0M 1K0

Tel: (519) 228-6444 or 1-800-265-2904 • Fax (519) 228-6560 • Email [kpalen@kenpal.on.ca](mailto:kpalen@kenpal.on.ca) • [www.kenpal.on.ca](http://www.kenpal.on.ca)