

**SUBSCRIBE: NEW SUBSCRIBER: CANADIAN CATTLEMEN 3 ISSUES FREE** [SEE DETAILS](#)**TARGETED  
LUNG-LASTING POWER** **ZUPREVO**  
(PROBIOTIC)

## The potential of probiotics to promote greater livestock health

Unlike antibiotics – which kill bacteria – probiotics are live cultures of beneficial bacteria

By **Michael Flood**

Published: July 22, 2015

**Beef Cattle, Dairy Cattle, Livestock** ■ 0 comments



Photo: File

Last year Health Canada changed its regulations on antibiotics to prevent them being used as growth promoters in livestock. Drug makers like Bayer, Merck, and Novartis had already begun the change, removing labels on their products that advertised them as suitable for non-medical purposes. Antibiotics are still available to Canadian ranchers and feedlot operators but they will now require a veterinarian's prescription and producers will no longer be authorized to feed their animal continuous low doses to promote growth.

The primary concern with regard to antibiotics is that they may be contributing to the growth of antibiotic-resistant bacteria. This is not only a public health hazard; it's also a serious image problem for the beef industry. Environmental and consumer health advocacy groups have been drawing attention to this problem for years, and it is becoming a serious sticking point for claiming that beef is an environmentally sustainable food.

Got mobile?  
Get Canadian Cattlemen.  
Click to get the free app.  
Sponsored by **MERCK** Animal Health  
iPhone, Android & BlackBerry Versions Available

As a result of this, many cattle producers have begun transitioning to probiotics, which are also known as direct feed microbials (DFM). Unlike antibiotics, which are drugs which kill bacteria (both harmful and health-promoting ones) probiotics are live cultures of beneficial bacteria. By introducing them into an animal's diet a cattle producer can, in theory at least, promote greater animal health and resistance to infection by replenishing the healthful bacteria in their cow's gut.

Animal product manufacturers have been swift to provide a range of probiotics to ranchers and feedlot operators, claiming that they can be used to replace antibiotics. Companies like SCD Probiotics, Life Products Inc., and others offer a range of live culture products and make strong claims for their efficacy in promoting animal health and growth. The probiotics have three main claimed potentials: promoting cattle health, reducing foodborne illness occurrences, and improving the public perception of the cattle industry.

MORE SELECTION  
Find it fast at **AGDealer.com**

It's important to distinguish probiotics from "prebiotics," which are digestible sugars that promote the growth of healthy bacteria. These substances, like chicory root fibre (inulin) and turmeric have been shown in recent studies to produce noticeable (i.e. greater than expected by random chance) positive effects on nutrient digestion and immune system responses in a broad range of animals. Their results in ruminants are less certain and remains an area for investigation.

Given that they are just additional supplements of the healthy bacteria that already naturally live in cow stomachs and intestines, probiotics are unlikely to be harmful. But will they be beneficial enough to justify the cost to cattle producers?

This is still an uncertain issue. There have been a number of promising independent studies conducted but not enough that there can be said to be a scientific consensus about their effectiveness. Part of the problem is the complexity of the ruminant digestive tract, which makes the effects of probiotics harder to trace than in monogastrics like pigs, sheep, and chickens.



French researchers, publishing in the journal *Beneficial Microbes*, analyzed data from studies in Europe and North America and found probiotics, in particular live yeast, showed a strong ability to reduce acidosis in cattle, a common digestive disorder that is linked to bloating, laminitis, and liver abscesses. It is believed that the probiotics contribute to animal health by outcompeting harmful bacteria in the cow's gut. They also showed a notable ability to reduce methane gas emissions, an important factor for reducing cattle's contributions to climate change.

In research published by the University of Guelph probiotics had a notable effect on preventing the shedding of *E. coli* O157 bacteria in feedlot cattle. This would be a notable advance because that strain of *E. coli* is one of the primary contributors to a foodborne illness in humans. Similar effects have been shown in chickens as well, leading scientists to believe that the effects are general across different animal populations.

Through the Beef Science Cluster, the Beef Cattle Research Council is funding a major Canadian research study into these and other potential benefits of probiotics. Under Dr. Wade Abbot of Agriculture and Agri-Food Canada the scientists are working to develop the passage of probiotics and prebiotics through the digestive tracts of cattle, enabling them to isolate the effects of them from other environmental and nutritional conditions. They expect to publish their research next year.

Once the data is in from that trial and others we will still need to wait to find out how much economic impact the probiotics can have. Assuming their effects and costs are similar to the currently used antibiotics then there is a case to be made for substitutions. Agricultural economists will need to study just how much benefit they produce to determine whether they make sense to a rancher's bottom line.

Regardless of just how much benefit the probiotics produce they will give ranchers and feedlot operators a new talking point with consumers. They are naturally occurring, are not a product of genetic engineering, and contain no synthetic chemicals, and thus fit all definitions of an organic product. If they are shown to be beneficial in an economically justifiable way they will have an added benefit in improving public perception as an "all-natural" product.

---

## ABOUT THE AUTHOR

### Michael Flood's recent articles

- The potential of probiotics to promote greater livestock health  
*2 days ago*

[More Articles](#)

---

## RELATED ARTICLES BY TOPIC

### Latest Agriculture and Agri-Food Canada articles

- The potential of probiotics to promote greater livestock health

- Are ionophore antibiotics a risk for antimicrobial resistance?
- HoloS – a farm tool to assess GHG emissions from beef production

### Latest antibiotic resistance articles

- The potential of probiotics to promote greater livestock health
- Sask. looking for beef research ‘centre of excellence’
- Talk, tweet and shout about antibiotics for food animals

---

## COMMENTS

# Canadian THE BEEF MAGAZINE Cattlemen

Enter search words here



News  
Crops  
Livestock  
Machinery  
Markets  
History

Video  
Digital Editions  
Classifieds  
Subscriptions  
About  
Advertise  
Contact us

Signup to our Newsletter

Terms and Conditions | Privacy Policy | © 2013–2015, FBC Communications LP