

UNDERSTANDING FEEDING PREFERENCES TO HELP IMPROVE ANIMAL HEALTH AND WELFARE

What's behind cattle feeding behaviour

By Sarah Van Engelen

The abrupt diet change that cattle experience when they're moved to feedlots leaves them prone to digestive upset. Although the switch from a forage diet to a finishing diet high in grain gives beef its desired marble characteristic, it also upsets the animals' digestive system, which can impact their growth. Now, an Alberta researcher is testing to see if cattle left to their own devices choose a diet lower in grain and higher in forage, and how that relates to performance and carcass quality.

Dr. Karen Schwartzkopf-Genswein, a beef cattle ethologist with the Lethbridge Research Centre, has found cattle may prefer a lower concentrate finishing diet – that is, a low grain diet. It may be one way of reducing the incidence of ruminal acidosis, a condition arising from the rapid digestion of the starch found in grain by the bacteria that exists in the cattle's rumen. Ruminal acidosis can cause cattle to go on and off their feed and can be fatal if left untreated, making it a significant health issue for producers.

“Some cattle affected by acidosis never regain the same level of performance they had before,” says Schwartzkopf-Genswein. “Combined with the labour to treat the animal, and the feeding of low levels or oral antibiotics to control and prevent acidosis, there is a huge economic cost associated with the disorder.”

Feedlot producers typically feed a finishing diet that is between 85-90% grain and 10-15% forage. But in preliminary research trials, Schwartzkopf-Genswein has found cattle prefer 75-80% grain when they were allowed to choose their own feed. This choice tended to decrease the number of severe liver abscesses caused by acidosis with no reduction in performance or carcass quality, compared to a control group that was fed a typical mixed ration containing 88% grain.

In a similar trial, Schwartzkopf-Genswein found that cattle given a choice selected less grain in the first two weeks during the study than the control group, but more grain in the last two weeks of the study. Overall, there was no difference in the amount of grain consumed between the two groups. As in her previous study she also found no differences in carcass quality or liver abscesses between the groups, suggesting that



Electronically monitoring eating habits at the trough

allowing steers to select the amount of grain they consume has no negative impact on performance.

Schwartzkopf-Genswein studied behaviour and physiology at the University of Saskatchewan and completed her Ph.D. on assessing the effects of branding on cattle. A large part of her current work now focuses on feeding behaviour.

“Monitoring feeding of individual animals is one of the best predictors of when an animal will become sick and if they are in pain or stressed,” says Schwartzkopf-Genswein.

For example, she has found that sick cattle (those treated for Bovine Respiratory Disease) spend 22% less time eating and go to the feed bunk 29% less frequently than their healthy counterparts. Changes in feeding behaviour can indicate illness as much as 10 days before an animal shows other visible symptoms of disease, says Schwartzkopf-Genswein.

Electronically monitoring the eating habits of individual cattle using radio frequency could ensure health conditions are identified and treated quickly. “Early intervention and targeted, discriminatory use of antibiotics could equate to significant economic savings on labour and drug costs,” says Schwartzkopf-Genswein.

This research is funded by Agriculture and Agri-Food Canada. [i](#)



Dr. Karen Schwartzkopf-Genswein at Lethbridge research facilities