

Utilizing ionophores for cattle on pasture

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When we think of feed additives, we most often think of cattle in a full feed situation whether that's in a feedlot or for weaned cattle getting started on feed. However, there are many classes of feed additives that are very useful for cattle on pasture, both in cow/calf and stocker operations. Ionophores are a feed additive that can be used to improve feed efficiency and increase gain. In addition, ionophores can reduce the incidence of coccidiosis, bloat, and acidosis as well.

How do they work?

There are 3 types of ionophores currently commercially available: monensin (Rumensin®), lasalocid (Bovatec®), and laidlomycin propionate (Cattlyst®). Ionophores are classified as antibiotics, but they don't function in the traditional sense that we think of therapeutic antibiotics. They function by altering the population of bacteria in the rumen environment, and select against gram-positive bacteria and protozoa in the rumen. By doing this the products of fermentation in the rumen are altered. Less waste products such as methane and ammonia are produced, and the breakdown of protein in the rumen is decreased. Cattle are able to more efficiently utilize the volatile fatty acid (VFA) propionate than acetate or butyrate. The shift in rumen bacteria allows for an increase in the population of bacteria that produce propionate, allowing the cattle to use energy and feed resources more efficiently.

How can you use them?

Ionophores can be added to dry or liquid commercially manufactured feeds or minerals. They can also be mixed in to manufactured feeds in small amounts. The ionophores are added to the ration at a level based on expected intakes so it's important to monitor feed and mineral consumption. It's important to note that because ionophores are classified as an antibiotic, they are a controlled substance, so it's best to purchase ionophore containing feeds or supplements from a commercial facility. There is no withdrawal time for ionophores, so finishing cattle can consume ionophore containing diets up until the day of harvest.

It is important to not allow horses to consume feeds containing ionophores, as this can cause major problems, as horses cannot metabolize ionophores.

What are the benefits?

The use of ionophores for cattle on pasture has been well studied and documented. Benefits for grazing cattle on pasture are usually focused on improvements in average daily gain (ADG). A review of research of stocker cattle on a range of pasture types supplemented with varying levels of ionophores consistently showed improvements in gain. In studies with cattle grazing Bermuda grass, steers supplemented with 200 mg/d monensin in the summer showed a 24%-44% improvement in ADG compared to controls who did not receive monensin (Roquette et al, 1980; Oliver, 1975). Improvements in gain from cattle supplemented with ionophores have been consistently shown across several different forage types over many years.

Ionophores have also been shown to influence reproduction in both replacement heifers and the cow herd. Previous research has shown that for heifers growing at acceptable rates (0.75 to 1.32 lb/d) age at puberty can be decreased and target body weights can be increased by supplementing with ionophores. Heifers that reach puberty prior to the start of the breeding season are more likely to conceive early in the season, making them more likely to calve early with improved chance of success of rebreeding and remaining in the herd. For cows, it has been shown that supplementing with ionophores (which would in turn improve her energy status) can result in a shortened postpartum interval (Sprott et al., 1988). A shortened postpartum interval is closely tied to improvements in cow body weight and condition score.

The Bottom Line

Ultimately, the decision to add an ionophore to your herd nutrition program falls to dollars and cents. Several researchers have examined the economics of ionophores. For growing cattle, the use of ionophores can improve gains by 5% to 15% on average and feed efficiency by 8% to 12% (Lawrence and Ibarburu 2008; Elam and Preston 2004). This can impact cost of production by \$11.51, such that cattle fed ionophores saw this in decreased cost of production. Also, the use of ionophores caused an estimated 1.46% in breakeven price.

In summary, the use of ionophores, can offer many added benefits to grazing cattle. There are several options available for providing ionophores to cattle on pasture including hand feeding, self-fed supplements, and mineral. For a producer, it is important to weigh the costs and benefits of using any technology for use in your herd.

For more information on Feed Additives for Beef Cattle Diets please visit:

<http://extension.msstate.edu/sites/default/files/publications/publications/p2518.pdf>

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit extension.msstate.edu/beef.

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