

Ionophores & Reproduction

What's the benefit for cows and heifers?

by Troy Smith, field editor

For whatever reasons, too few cow-calf producers are using ionophores. That was the take-home message delivered by Oregon State University Range Cow Nutrition Specialist Travis Mulliniks, in a presentation to ranch folk attending the 2023 Range Beef Cow Symposium. During the Dec. 13-14 conference in Loveland, Colo., Mulliniks said more cow-calf producers ought to consider how adding ionophores to cow and heifer diets might help improve profitability.

Ionophores are feed additives that have been shown to increase feed efficiency and enhance weight gain in cattle due to their effect on rumen microflora. Ionophores also reduce the incidence of some disease-causing bacteria, including coccidia, and can help deter bloat.

For all of these reasons, ionophores have been used extensively in the diets of growing and finishing cattle. Rumensin® and Bovatec® are brand names for monensin and lasalocid, respectively, which are two of the more commonly known ionophores.

Why not cows?

While dietary supplements containing ionophores are available for beef cows and heifers, they are not widely used by cow-calf producers. According to Mulliniks, that should change. He insists ionophores can help reduce feed costs while potentially improving the reproductive performance of breeding females. They can be particularly beneficial to young cows that drag down pregnancy rates — the first- and second-calvers that fail to breed back.



PHOTO BY SHAUNA HERMEL

the capacity to consume enough energy from forages to fuel maintenance and growth plus lactation and reproduction.”

According to Mulliniks, when the diet can't meet energy demand, young lactating cows may exhibit a prolonged postpartum interval — a longer period of anestrus — before they start cycling again. Reproduction typically suffers first when energy demand exceeds supply. Genetic selection for increased milk production increases energy demand, which exacerbates the problem.

More energy

In oversimplified terms, ionophores can help cattle derive more energy from their diet by altering the rumen microbial population responsible for forage fermentation.

Ionophores inhibit gram-positive microbes that are least efficient at digesting feedstuffs. This results in reduced production of waste products, including methane. The shift in rumen microbe population also allows beneficial bacteria to more efficiently use feed resources and increase energy availability to fuel animal performance, including reproduction.

Calling replacement-heifer development the most expensive period in a breeding female's lifetime, Mulliniks said feeding ionophores can be useful to help manage costs associated with management of nutrition during development of yearling heifers.

He cited studies suggesting the addition of monensin to heifer diets resulted in

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“It's sometimes a challenge for cows to recover from giving birth, return to estrus and rebreed within 90 days of calving, thus maintaining a 365-day calving interval,” said Mulliniks, emphasizing the increased postpartum nutrient requirements of lactating cows. “Pregnancy rates in 2- and 3-year-old cows probably suffer most, because those young cows often don't have

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reduced feed intake while achieving higher average daily weight gain and increased feed efficiency when compared to heifers not receiving an ionophore.

Research support

According to Mulliniks, feeding an ionophore during heifer development has been shown to have a positive effect on puberty attainment. Results of studies using monensin have shown that heifers fed the ionophore reach puberty at an earlier age, with a higher percentage of heifers cycling at the start of the breeding season.

In studies involving beef cows, feeding an ionophore has been shown to decrease feed intake and increase feed efficiency. Research suggests feeding an ionophore may prompt a 13% improvement in weight gain, on average, and the ability for cows to maintain weight on 10% less feed.

Forage intake, body weight and body condition score (BCS) responses to ionophore supplementation are dependent

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on forage quality and physiological stage of cows. However, ionophore supplementation can be useful in helping cows derive the most energy possible from low-quality forage diets.

Mulliniks also cited evidence of positive effects on reproduction resulting from the addition of ionophores to diets of lactating mature beef cows. In a study involving monensin, the postpartum period of anestrus was reduced by 18 days.

“Feeding an ionophore can be a big benefit to thin mature cows, but the biggest benefit comes from feeding an ionophore to young 2- and 3-year-old cows,” said Mulliniks, “to increase feed efficiency, get them gaining weight, and also to shorten postpartum interval.”

Feed delivery

Delivering an ionophore to a cow herd can be challenging, Mulliniks cautioned. The label restrictions don't make it easy for everyone. A variety of ready-made feeds and supplements containing ionophores are commercially available, but such products must be fed so that cattle consume a correct amount consistently every day, or at least every other day.

The desired effect is not achieved if a proper level of consumption is not maintained, and overconsumption can lead to a toxic response. Intake must be managed, but Mulliniks thinks more cow-calf producers should consider how they could make ionophores work for them.

“Ionophores have been around for a long time, and they are widely used on the feedlot side of the industry,” concluded Mulliniks, “but they are not used enough on the cow-calf side.” **ABB**

Editor's note: Troy Smith is a freelance writer and cattleman from Sargent, Neb.