



## TECH TALK

# Performance Trace Mineral Supplementation Improves Calf Weaning

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Veterinarians and nutritionists alike estimate that up to 40% of beef cattle in the United States never receive trace mineral supplementation during grazing seasons. Many beef cattle producers consider performance trace minerals, such as Zinpro Performance Minerals®, to be breeding minerals and will try to save money by only supplementing cows and bulls leading up to the breeding season, if at all.

The period from birth to the start of breeding season is crucial, but performance trace mineral nutrition is also important for fetal development, lactation, immune challenges, growth and performance and during periods of poor forage quality. It would be improper to say that there's only an 80- to 90-day period where we want to feed beef cattle the best we can.

#### Performance Trace Minerals Kickstart Feedlot Performance

Trace minerals are key for helping weaned calves mount a rapid and robust immune response to challenges they encounter. If calves are more resilient as a result of being supplemented with performance trace minerals during weaning, they will start consuming feed and start gaining weight to a greater degree when they enter the feedlot. Zinpro worked with the Texas Agricultural Experiment Station and North Carolina State University to determine the effect of performance trace minerals in overcoming infectious bovine rhinotracheitis virus (IBRV).

Forty steer calves were included in the study. The dams of the steers in the study were sorted into two groups by body weight and assigned to one of two mineral supplements containing zinc and manganese from Zinpro Performance Minerals or inorganic zinc and manganese from 100 days prepartum to weaning.

The calves were born in January and weaned in August at an average body weight of 586 pounds (266 kg) and shipped 1,553 miles (2500 km) from Raleigh, North Carolina, to the Texas A&M University research feedlot at Bushland, Texas.

At the feedlot, the calves were not vaccinated for IBRV and remained in the same mineral source treatment as assigned to their dams at pregnancy. Calves received the respective supplements delivered in a complete diet for 28 days (stress phase), then subsequently were challenged with a Cooper's strain of IBRV (IBRV phase) on day 29 while remaining on the supplements.

Zinpro Performance Minerals: 50 ppm Zn and 40 ppm Mn  
Inorganic trace minerals: 50 ppm Zn and 40 ppm Mn

The calves that were fed performance trace minerals maintained feed intake, and therefore their bodyweight gain was greater in the stress phase and during IBRV challenge. Cattle fed the Zinpro performance trace minerals were more resilient to the stress and immune challenges they experienced after weaning.

While the birth weight of the steers did not differ between the performance trace mineral and inorganic trace mineral research groups, upon arriving at the feedlot the steers from dams fed performance trace minerals were 7.6% (37 pounds; 17 kg) heavier than the steers born from cows fed inorganic trace minerals. In addition, the steers fed performance trace minerals were 8.7% heavier by day 28 post-transit. This increased weight gain was driven by better dry matter intake in the steers fed performance trace minerals. The steers were consuming 18.7 pounds (8.5 kg) daily at the end of the first 28 days in the feedlot compared to 16.7 pounds (7.6 kg) consumed daily by the steers fed inorganic minerals. This demonstrates that the performance trace minerals received via the dam helped the steers better handle the stress of shipping and adjusting to a new environment.

During the IBRV challenge, steers fed performance trace minerals experienced a 20% reduction in dry matter intake, while the steers fed the inorganic trace minerals experienced a 49.9% drop in dry matter intake. In addition, steers fed performance trace minerals had a less severe decline in overall body weight — losing body weight on only six days compared to 10 days for the steers fed inorganic trace minerals. Steers fed performance trace minerals also exhibited lower rectal temperatures during the IBRV challenge, indicating a lower fever than the calves fed inorganic minerals.

#### Continue Performance Trace Mineral Supplementation to Weaning and Weaned Calves

While calves are learning how to forage and graze from their dams, it's not unusual to see a calf sticking its head into a mineral feeder or licking a liquid supplement even at just a few days old. Preparing calves nutritionally with Availa®4 for at least 90 days prior to weaning is a great idea. However, if you are supplementing Availa-4 to the herd year-round, you have already accomplished this.

Cattle producers and nutritionists should consider including Zinpro Performance Minerals in their calf creep feed at a level of 2.5 pounds of Availa-4 per ton of feed, assuming a 1% bodyweight daily intake for those calves prior to weaning. From the time calves enter the weaning pen until the preconditioning period is complete supplement Availa-4 at a level of 7 grams per head, per day (10 grams per head, per day in Europe).

#### Add Insurance Against Poor Feed Intake With Performance Trace Minerals

Weaning is the most stressful time in a calf's life. Feed intake is initially poor for weaned calves, just as it is with any other cattle experiencing stress. Since Zinpro Performance Minerals are better retained by beef cattle, supplementing pre-wean and weaned calves with Availa-4 is insurance against poor feed intake. Even when cattle are not consuming as much feed, they will better retain performance trace minerals to help fulfill their nutritional requirements.

To learn more about including performance trace minerals, such as Availa-4, in your beef cattle operation, contact your Zinpro representative today.