

Trace

Faster Mineral
Uptake Might
Save A Calf

BY GILDA V. BRYANT

Race

“M

inerals are a hot topic,” explains Eric Scholljegerdes, Ph.D., P.A.S. (Professional Animal Scientist), Ruminant Nutritionist at New Mexico

State University, Las Cruces. “It’s a complex issue and it’s hard to get your mind around.”

Most U.S. beef herds are deficient in the vital trace minerals; zinc, copper, selenium, and manganese. Working on complex cellular levels, these elements are crucial for animal health, reproduction, and growth.

Copper is especially important due to involvement in reproduction, general growth, and red blood cell production. Plus, it’s critical to central nervous system development and immune function. If acceptable levels dip, anemia may occur. With low copper levels, cattlemen will see more respiratory disease, scours,

and ultimately, poor growth.

“You’re going to have more sickness and reduction of performance,” Dr. Scholljegerdes says. “Fertility rates can be pretty low and if you’ve got black cattle in a deficient state, you’ll start to see their hair [develop] a reddish tinge. The bad thing with copper is there are so many other minerals that interact with it.”

Antagonists, such as molybdenum, iron, and sulfur, interfere with mineral absorption in the rumen. Producers may be feeding adequate copper in their mineral program, but molybdenum in soils and forages in the northwestern part of the United States can reduce copper absorption, as do products with high amounts of sulfur, such as distiller’s grains in the Midwest, and molasses in Florida. Sulfur or iron dissolved in water also binds copper, limiting its effectiveness.



The calf’s total mineral package comes from the cow. It can take about sixty to seventy-five days on a solid mineral program to raise her mineral levels to an effective pre-calving level.

COPPER-DEFICIENT CALVING WRECK

... how one rancher came out on the sunny side

Ryan Bulkley is co-owner of the Wind Splitter Ranch, where gently rolling hills break into rough, rocky canyons, west of Springfield, Colorado.

In the fall of 2009, he purchased forty-three head of pre-bred Bonsmara heifers from a Texas breeder. Aware that his forage tested low in copper, Bulkley provided everything they needed and fed alfalfa hay to the heifers.

"They looked good and their hair coat looked fine," says Bulkley. But he knew he was in trouble when the first two calves were stillborn. The third calf was premature and lived only twenty hours despite Bulkley's efforts to save it. Then the fourth one was stillborn. "It was a big nice, healthy-looking calf," he recalls. "It was terrible. We hauled the first dead calf and the little preemie to the vet. When he posted them he discovered the lungs and liver were both really dark."

Knowing that quick action might save the other calves, the vet didn't wait for the necropsy reports. Suspecting a copper deficiency, he wrote a prescription for injectable minerals, and Bulkley gave each animal a subcutaneous shot as soon as he could.

The cows began calving about a week later, taking about a month for all of them to deliver. Bulkley says, "The rest of the calves were born healthy. They looked good, more vital. They'd get up and go right to suckling." He also gave the calves a one CC shot of injectable minerals to boost their mineral status.

Bulkley advises, "If you give it to one hundred head, it costs about four hundred dollars. If you sell one calf for six hundred dollars, all you have to do is to save one calf or get one more cow bred back and it's paid for itself."



The preferred mineral injection site is on the lateral side of the neck, at least a hand's breadth in front of the shoulder, where there's not a lot of movement. This photo illustrates an excellent example of a tented Sub-Q injection coming in from the top (to avoid gravitational leakage). Note the rubber exam gloves, always a good idea when working with any type of critter.

It's a good idea to find out where your mineral shortcomings are by taking samples of the diet, forage and whatever grains you happen to be feeding to your critters. Find out what you're working with, and discover what you need.

One way to avoid antagonists is to provide chelated minerals which have an amino acid or protein tied to the mineral. According to Dr. Scholljegerdes, "Copper, sulfur, and molybdenum can interact within the gut to form a complex that cannot be absorbed." Chelated minerals have grown in popularity because they have a tendency to avoid reactions with antagonists. He adds, "They're better able to be absorbed in the lower gut in the intestine."

Injectable minerals provide a more direct approach to bypass antagonists. They move from the injection site directly to the bloodstream within eight to ten hours. Minerals are stored in the liver, used as needed, and may last between a month and three months.

Lourens Havenga, veterinarian and C.E.O. of Multimin, U.S.A., is passionate about injectable minerals and their contribution to ruminant health. These products contain ratios of zinc, copper, manganese, and selenium based on the U.S.D.A.'s National Animal Health Monitoring System research and the National Research Council guidelines.

"Our aim is to have these essential trace minerals available in a form that can elicit a quick response in animals. There are certain times in the production cycle of our cattle where we cannot meet their mineral requirements," explains Dr. Havenga. "The day-to-day oral supply of trace minerals is required to maintain that animal's normal health, immune system, and reproduction. Sometimes people think the injection takes the place of oral minerals. That's definitely not the case."

Dr. Havenga recommends injections for bulls about three months before breeding. It often takes that long to build up hefty volumes of high-quality semen. Pregnant cows need an injection one to three months before calving and again one month before breeding back. The calf's total mineral package comes from the cow. It can take about sixty to seventy-five days on a solid mineral program to raise her mineral levels to an effective pre-calving level. Injectable minerals can make an impact within two days.

Producers may give injectable minerals to a newborn calf, and prior to weaning at two to three months of age when it has depleted seventy-five percent of its minerals due to quick growth. Dr. Havenga says, "That's why we see so many problems with scours and respiratory disease . . . the immune system is going to run out of mineral when the calf is challenged and it is going to get sick."

Available only with a veterinarian's prescription, injectable mineral dosage is based on weight and age. Dr. Havenga says, "We know that young animals grow at an exceptional rate; they need more minerals to fuel their growth and to balance the amount of mineral available for growth and the immune system. We need to keep them healthy while they're growing."

"The preferred injection site is on the

lateral side of the neck, at least a hand's breadth in front of the shoulder, where there's not a lot of movement," advises Dr. Havenga. "This is a very concentrated package of mineral that we're putting under the skin . . . if you do a nice tented (subcutaneous) technique, it's beautiful. The injection doesn't run or seem irritated, and is well tolerated."

Although injectable minerals appear to be an excellent addition to a sound mineral program, Dr. Scholljegerdes advises, "We stress sampling of the diet, forage, and whatever grains you

happen to be raising on the place that you're feeding back to the cattle. Knowing what you've got can tell you what you need."

"If the animal has adequate mineral stores, any excess is going to be eliminated," Dr. Scholljegerdes continues. "If cattle are in good mineral status providing anything above and beyond that is a waste of resources."

Dr. Scholljegerdes adds, "Minerals are something we've always taken for granted. We're starting to realize that we've got to pay attention to them." **WR**

Healthier Cattle – Less Treatment Cost



Danny Poss with his two sons, Nolan and Nate, injecting a newborn calf with **MULTIMIN® 90**. Nolan and Nate call this **MULTIMIN**ing calves.

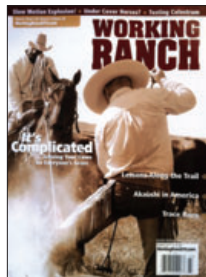
Our operation has around 330 head of mostly purebred registered Angus and is located in central Nebraska, an area that has low levels of copper, zinc and selenium. We have a good oral mineral supplement program but we wanted to be sure that our cattle are receiving optimum levels of trace minerals. The injectable is a logical choice because it gives us a sure way of getting those essential trace minerals in our cattle at the times they need them the most. We started using **MULTIMIN®** about 4 years ago on our calves. It was given at birth and again at weaning. The results were so impressive that we now use **MULTIMIN** on our entire herd.

Adding **MULTIMIN** to our herd health program has helped improve immunity and overall health. Treatment costs are a fraction of what they were before **MULTIMIN**. We're just not seeing pneumonia and other health issues that we were seeing prior to the use of **MULTIMIN**. Our reproduction efficiency has increased, especially with our first calf heifers, and the breed-back time with our older cows has improved. We are attaining higher weaning weights and getting better feed efficiency with improved daily gains. The red rusty look that used to be in some of the hair coats is gone.

MULTIMIN more than pays for itself in the herd health and reproduction improvements that we're seeing, plus treatment costs have decreased with **MULTIMIN**.

Danny Poss Poss Angus, Scotia, Nebraska

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