



PHOTO BY SHAUNA ROSE HERMEL

Hydroxy Minerals Introduced

Trace minerals important for calf development.

by **Troy Smith**, field editor

In conjunction with the 24th Range Beef Cow Symposium hosted in November, mineral feed ingredient manufacturer Micronutrients hosted a breakfast for cattle producers interested in learning about the company's relatively new hydroxy trace mineral products. Micronutrients representative Jeff Heldt called hydroxy trace minerals "unique" because of their crystalline structure.

According to Heldt, more traditional trace minerals used in animal feed have been categorized as either inorganic or organic. Chemically, inorganic minerals are the sulfates and oxides that make up a large majority of copper, zinc and manganese used in feed. Organics are mineral salts whose ligands (ions or molecules that bind to metal atoms) contain carbon. Heldt said the widely used sulfates are very soluble and reactive due to their weak ionic bonds, and reactions undergone in the rumen may reduce mineral absorption in the lower gastrointestinal tract. Organic minerals have sometimes exhibited

higher relative bioavailability due to having covalent bonds, making them less reactive.

Heldt said the hydroxy trace minerals are less reactive and will not bind with other ration ingredients. Thus the minerals are "protected" in the rumen and more available for absorption in the lower tract. Heldt said hydroxy trace minerals are environmentally friendly and less subject to costly waste because they will not leech out after being mixed with feed or salt.

Also speaking during the breakfast was University of Florida ruminant nutritionist John Arthington, who explained how hydroxy trace minerals had been used to help prepare calves nutritionally for weaning. Arthington said that while a calf's mineral status is adequate at birth, it tends to decline thereafter, often

leaving the animal mineral-deficient by weaning time. Typically, copper and selenium are most limiting in many areas.

"Mineral demand is high for a fast-growing calf," explained Arthington. "Milk is only a marginal source of mineral elements and mineral intake from other sources may

be inadequate, so a calf usually is deficient at weaning. It may even be mineral-deficient by 90 days of age."

Arthington said calves from the research herd had been limit-fed a creep feed containing concentrated trace minerals in preparation for weaning, since the stress of weaning also contributes to mineral loss. However, due to poor palatability, calves would not readily eat creep feed containing traditional sulfate minerals. The problem was overcome by changing to a hydroxy trace mineral formulation.

According to Arthington, an experiment evaluating calf acceptance of a salt-mineral mixture was conducted to compare hydroxy trace mineral with the more traditional sulfate form. Over time, Arthington said, calves preferred the blend of salt and hydroxy mineral to salt blended with sulfate mineral.



Editor's Note: Troy Smith is a cattleman and freelance writer from Sargent, Neb. This summary is part of the Angus Journal's online coverage of the 2015 Range Beef Cow Symposium hosted Nov. 17-19, 2015, in Loveland, Colo. For additional coverage, visit the Newsroom at www.rangebeefcow.com. The Angus Journal's coverage of the event is made possible through collaboration with the event committee and sponsorship of LiveAuctions.tv.

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