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The Use of Organic Trace Minerals in the Commercial Cowherd

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Organic mineral is a generic term used to describe the condition whereas an inorganic, soluble salt is joined with an organic carrier, typically a portion of a protein, sugar, or amino acid. This complexing action may occur in a variety of manners, most of which are defined and controlled by the American Association of Feed Control Officials. Often the term "chelated mineral" is used to describe all organic mineral sources. This is a misnomer. Some common organic mineral categories include, trace mineral amino acid complexes, trace mineral amino acid chelates, and trace mineral proteinates. The trace minerals commonly found in commercially available supplements include zinc, copper, manganese, and cobalt.

The theory behind the benefit of organic minerals is based on improved efficiency of absorption compared to the traditional inorganic counterparts. This improvement in mineral availability is thought to have an impact on cowherd reproduction, calf weaning weight, immune function, and structural soundness (i.e. hoof integrity).

Conclusive research supporting the benefits of organic mineral inclusion in commercial cow-calf supplements is lacking. Although some studies show a benefit to organic mineral supplementation, many do not. With this concept in mind, we have completed a three-year study using the Braford cowherd at the Range Cattle REC. In this study, we compared the effectiveness of organic versus inorganic trace mineral supplements on cowherd performance. The supplement used in this study was Availa-4® (Zinpro, Eden Prairie, MN) and contained organic sources of copper, zinc, manganese, and cobalt. Control cows received the same minerals in the inorganic salt form. Over the entire three-year study, the organic mineral treatment had no effect on reproductive performance, cow body weight or body condition, or calf weaning weight. However, performance improvements were realized when young cows were considered separately. Young cows

nursing their first or second calf experienced an 18% average increase in pregnancy rate (84 versus 66%) and a 16 d shorter calving interval (364 versus 380 days).

The results of this three-year study suggest that organic trace minerals may be an important management tool for the commercial cattlemen. Our results suggest that due to the increased cost of organic trace minerals, their use might be most economically effective on the young cows in the herd. If young cows are separated from mature cows then this management option may be simple and effective alternative to traditional inorganic trace mineral supplementation.