



Should I be supplementing trace minerals to my beef cows?

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It has been well documented that beef cattle require several trace minerals. In most U.S. beef cowherds, major clinical trace mineral deficiencies probably do not exist and do not have a substantial effect on cow or calf performance. Marginal trace mineral deficiencies do exist and commonly go unnoticed since only slight reductions in performance occur. It has been reported, in some situations, that a deficiency can lead to a decrease in performance of up to 20%, including reduced growth in young livestock, lighter body weights or condition scores at breeding, and decreased milk production. On many beef cattle operations, subclinical trace mineral deficiencies can affect cow reproduction and/or calf performance, but these deficiencies probably contribute most to health-related (immune-response) problems in cattle. The major challenge to beef cattle operations is that many forages across the U.S. are unable to supply adequate amounts of trace minerals to grazing beef cattle. Widespread analyses of forages for trace mineral concentrations have been compiled from across the U.S. by the National Animal Health Monitoring Service (NAHMS). Based on these data, researchers concluded that typical forage diets for cow/calf operations across the U.S. may not be adequate in zinc (Zn) and are marginal in copper (Cu). A reduction in the availability of Cu may also occur if a forage contains Cu antagonists such as iron (Fe) and/or molybdenum (Mo). When data from all NAHMS forage samples were summarized, manganese (Mn) was adequate in 76.0% of samples, Zn was adequate in only 2.5%, and 49.7% of samples were marginal in Cu. Relative to Cu antagonists, 9.2% of samples were very high in Mo, and 11.7% of samples were very high in Fe. Based on these data, many beef cows in the U.S. are not receiving adequate amounts of trace minerals via the forages they are consuming. Therefore, supplementation of trace minerals to beef cattle has become a common practice for many of the reasons mentioned above, in order to maintain concentrations of trace minerals within narrow limits in animals' bodies. However, producers should avoid purchasing and supplying excessive amounts of trace minerals unnecessarily. To accomplish this, producers should determine the specific trace minerals that need to be supplemented and at what concentration they should be included in a mineral mix. This can be determined by comparing the results of a laboratory analysis of water and feedstuff samples (ideally collected across several times of the year) with the recommended concentrations that trace minerals should be included in the diet, based on the physiological needs of different classes of cattle (as reported by the National Research Council, 1996). Producers should realize that trace mineral antagonists can affect the amount of trace minerals that need to be supplemented. Ultimately, a trace mineral mix should then be developed to provide supplemental trace minerals to meet the physiological needs of an animal if an adequate amount is not available from forage.

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