Minerals for Best Performance in Beef Cows

After a producer has been feeding cattle for a few years experience shows that cattle are quite tolerant of mineral levels outside of what would be called normal. In the prairies and western US states there are some areas where there are regular excesses or deficiencies of minerals in forages and water. It is not common to see classic deficiencies or excesses but they can be stimulated by stress from feed, water or weather. The challenge becomes managing the herd ahead of the breakdown by observing the conditions and adjusting the mineral portion of the ration in advance of any failures in performance. An animal getting some mineral is better off than an animal getting none. Feed test results give us great insights into how and when forages should be used and blended to minimize fluctuations in mineral intake or to minimize anti-nutritive substances like nitrates. The Highline® AMX850T is a good choice for a twin screw mixer to get accurate mixes and good cut length in rations. Using the animals' natural urge for salt the consumption of mineral can be encouraged. This is a common approach and ensures there are minerals when the body may suddenly demand them. Minerals are stored in greater or lesser amounts in the body in bones, soft tissues and physiological solutions.

We are now looking ahead for the end of calving and the beginning of pasture season. There are two major stressors at this time for the beef cow, the need to replace body fat to achieve high rebreed levels and the mineral inadequacy of new fresh grass. Now is the time to build body reserves by double checking the ration for Phosphorous (P) if high straw diets have been fed, Selenium (Se), Copper (Cu), Molybdenum (Mo), Magnesium (Mg) levels. Typical dry forages range as indicated in the table below, but can be influenced by drought during plant growing phase. Unfertilized pastures can yield forages lower in P and if droughty, minerals can be changed from normal. Potassium (K) in stored forages is sometimes problematic in that it can elevate the electrical charge of the diet (DCAB ratio) indicating the possibility of milk fever showing up. If the herd has calved successfully without cows going down the K levels were okay. Again, it is rare to see deficiency or toxicity but when it occurs it is often dramatic. Avoiding these situations can be done by accurately mixing a mineral mix which meets the farm specific needs. Assess forages by testing and take into consideration growing conditions particularly with spring weather being cold again this year. New growth can be clipped and sent in for analysis. Extended feeding this Spring allows more mineral to be fed in preparation for breeding in a couple of months. Taking steps now can reduce the number of open cows this fall.

Mineral	*Forage Level*	*Supplement*	*NRC lactating cow*
Phosphorous	.15 % -.30 %	Not always	.95gm P/kg of milk
Copper	5mg-10mg/kg	yes	10mg/kg
Molybdenum	1mg -2 mg/kg	Not usually	---
Magnesium	.2 % -.35 %	Yes seasonally	0.20%
Selenium	0 %-.2 %	Yes	0.10%

Reference:

1. Nutrient Requirements of Beef Cattle 8th edition 2016
2. Cost-Effective Mineral Supplementation Programs for Beef Cattle, KC Olson, Ph.D., PAS, ACAN Beef Nutrition and Management Specialist, Commercial Agriculture Program, University of Missouri.
3. Manitoba Agriculture, Potassium and Tetany Ratios (Nutrition Update, Volume 15)
4. Cowbytes 5.32v ARD full version.

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