

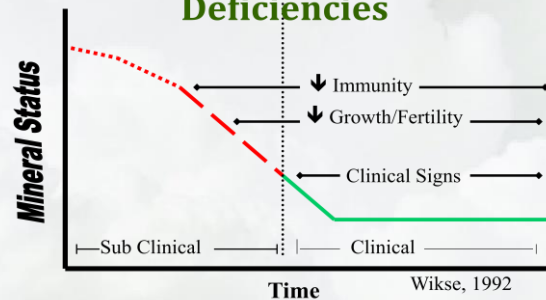
Micro Minerals

- 10 micro minerals required by cattle
- Copper, Zinc, and Selenium are deficient in forages
- Copper is the most common deficiency in grazing cattle
- Copper deficiencies include...
 - 1) Lower conception rates
 - 2) Increased embryo death
 - 3) Delayed puberty
- Zinc is a component of many enzymes and important for immunity male reproductively and skin and hoof health
- Cattle have a limited ability to store zinc and thus zinc supplementation is always necessary

Feeding By-Products

- Select a mineral that is in higher amounts of calcium with little to NO phosphorus
- Sulfur is higher in these products, an excess of which can interfere with the metabolism of copper resulting in trace mineral deficiencies and reduce reproductive efficiencies

Effects of Mineral Deficiencies



The chart above shows as availability to minerals become less deficiencies become more abundant and clinical signs are not seen until profits are lost.

Cows crave salt, important in grazing...

- Voluntarily consume 1 oz. per day
- Consume more when forage luscious than when mature
- Salt provides proper function of the nervous and muscular systems
- A salt deficiency includes...
 - Loss of appetite
 - Body condition loss
 - Inefficient weight gains
- Salt is one of the main drivers of free choice intake and can be used to maintain mineral consumption at the recommended levels

Macro Minerals

- 99% of total body calcium and 80% of total body phosphorous is stored in the bones
 - However these are used to meet short term deficiencies
- A lack of calcium or phosphorous...
 - Decrease in efficiency of gain
 - Lower body condition scores
 - Lower milk production during lactation
 - A phosphorous deficiency can delay cows from returning to heat following parturition and can delay puberty in heifers
- The optimum Calcium phosphorous ratio is 1.5:1 (with a range from 1:1 to 4:1)
- Potassium adequate for grazing cattle but high levels may inhibit magnesium absorption
- Magnesium deficiency is mostly associated with grass tetany
- Deficiencies include...
 - 1) Increase abortions
 - 2) Increase calving problems
 - 3) Decrease ovulation rates
 - 4) Decrease conception rates

Introducing



*A mineral made to be
as tough as you!*

Land O'Lakes is taking on Minnesota weather

- Through wind and rain a mineral that will hold up and keep money in your pocket!
- Various products to satisfy your needs for any occasion and help with various deficiencies

RangeLand also has a variety of tubs...

- Cattle will only consume ½ to 1 lb. per day
 - Dry Matter content 96%



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