

Vitamin and Mineral Focus:

It's fascinating that in every human drugstore there is an aisle dedicated just to vitamins and mineral supplements. Included in that aisle is everything ranging from pre- and postnatal vitamins, to vitamins for active people, to vitamins to support hair and nail growth. But when it comes to vitamins and minerals for dairy cows, it's a section on the ration that is likely quickly glanced over, or maybe even ignored. Like humans, cows also require vitamins and minerals to support growth, production, immune status, and overall health. Each month, for the next several months, I am going to write about one of the key vitamins or minerals that dairy cows require (or benefit from) and describe their role in the ration. To kick this series off, I'm going to discuss some of the basics. There are two classes of minerals: macro and micro minerals. Macro minerals are those that are required at levels greater than 100 parts per million (ppm) – these include: calcium, phosphorous, magnesium, potassium, sodium, and chloride. Macro minerals are structural components of bone and body tissues and play important roles in acid-base balance, osmotic pressure, and nervous system transmission. Micro minerals, or trace minerals, are required in much lesser quantities but still have profound importance in the diet. These include: cobalt, copper, iodine, manganese, selenium, zinc, molybdenum, chromium, iron, sulfur, silicon, and vanadium. Micro minerals are often components of enzyme function, and play a role in the hormone and endocrine system. Vitamins are categorized as either fat-soluble (vitamins A, D, E, and K) or water-soluble (B and C vitamins). Currently there are 14 recognized vitamins, but dairy cows only have a dietary 'requirement' for vitamin A and E, because the others can be synthesized by the animal.

Stay tuned, next month I'll discuss the role of calcium in dairy cow diets and the importance it has on overall health!