

# Nutrition, Especially Trace Minerals, Impacts a Cow's Health

By: Donna Amaral-Phillips, Ph.D.



Sound nutrition programs and feeding practices help enhance a dairy cow's immunity or her ability to fight off an infection, such as mastitis, when challenged. Good immunity is also needed for vaccines to be the most effective in preventing diseases. One needs to recognize that sound nutrition cannot replace or make up for poor management practices. For example, the addition of feed additives will not correct a herd's mastitis problem. This problem is better addressed by improving milking practices and/or housing cows in a cleaner environment.

Sound nutrition programs start with testing forages and balancing rations for the milking herd to provide cows with adequate amounts of energy and protein. Both of these nutrients are very important in enhancing a cow's immune system. But, trace mineral and vitamin nutrition is equally important. Research has suggested that slight deficiencies of certain trace minerals and vitamins may detrimentally affect a cow's immune function or her natural ability to fight infections such as mastitis and other diseases. A decrease in immune function may be seen before decreases in milk production or severe deficiency symptoms, such as a change in hair coat color. Research has shown that selenium, zinc, copper and vitamins A and E are very important in improving a cow's immune system. Thus, close attention to your herd's mineral and vitamin needs are very important.

- 1) Minerals and vitamins should be fed through the grain mix. This feeding practice ensures that not only milking cows but also dry cows and heifers receive the needed minerals and vitamins. Cattle do not selectively consume minerals in the amounts needed with the exception of salt. Thus, cafeteria-type mineral feeders where cattle get to select individual minerals do not meet their mineral and vitamin needs.
- 2) Feed the recommended amount of minerals and vitamins to not only the milking herd but also dry cows and heifers. For example, if your nutritionist recommends that you add two bags of a particular complete mineral per grinder load, saving money by adding less may cost you more in decreased milk production, decreased ability to get your cows rebred, or increase the severity of mastitis.

It is my experience that mineral deficiencies are more often seen in dry cow and heifer feeding programs than those for the milking herd. The amount of mineral and vitamin mixes included in these grain mixes needs to be adjusted to reflect the lower amount of grain fed to these animals. Underfeeding trace minerals and vitamins can be very detrimental to the future health of not only the milking herd, but also dry cows and heifers.