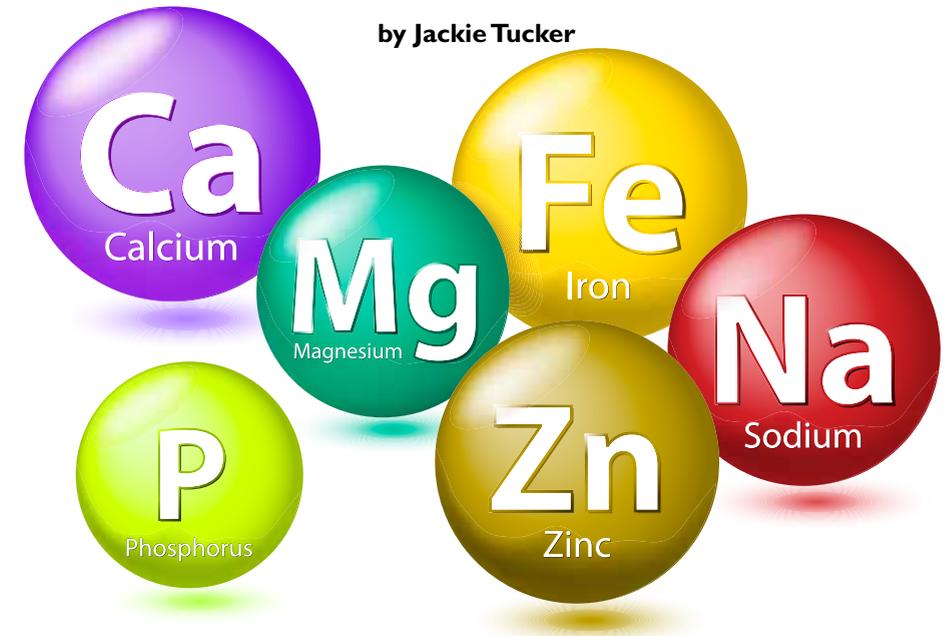


MINERAL MANIA

by Jackie Tucker



Minerals are essential components in the building blocks of enzymes, hormones and cells. They are required for optimum growth, muscle and nerve function at varying levels according to the cow's requirements, which will vary according to pregnancy status, milk production level and growth rate. These all have a significant effect on animal performance.

The bioavailability of trace minerals fed to ruminants depends on the source, as well as amounts of other trace and macro-elements in the diet. Attempting to improve the trace mineral status of an animal by feeding higher levels of

inorganic sources (eg sulphates and oxides) not only increases costs, but also creates imbalances and can act as an antagonist to other trace minerals, increasing excretion of these minerals into the environment.

Penny wise, pound foolish
It is understandable that during tough economic times (high feed costs and low milk prices), one is tempted to reduce the cost of the ration, and reducing minerals is often considered. The long-term



impact of incorrect or reduced mineral supplementation on herd health and overall performance should first be carefully considered before removing them from the diet. Dairy health

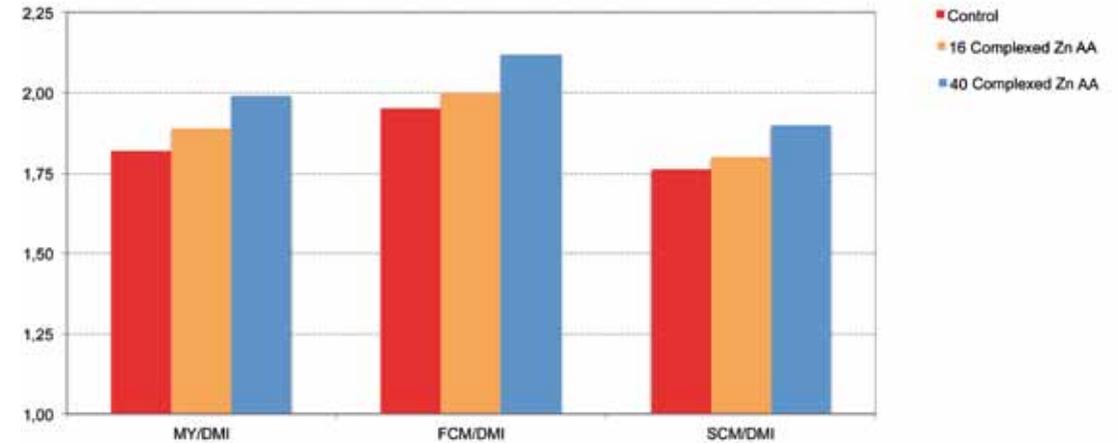
and economics experts caution against reducing costs in key areas such as nutrition and cow comfort that may compromise herd health and lead to lower milk production, offsetting any short-term savings.

Trying to save 30 to 50 c/cow/day could result in increased somatic cell counts, delays in conception and other health issues that could cost more than 50 c/cow/day. Dr Mike Hutjens of the University of Illinois in the USA says: "Dairy farmers must make economical, sound feeding decisions which return a profit when milk prices are either high or low". Decisions based on return on investment are good decisions and these shouldn't change during low milk price (or high feed price) seasons. Therefore, feed additives (including minerals) should be strategically included once you are sure they can provide a research-based profitable benefit-to-cost ratio of 2:1 or greater.

LESS STRESS = MORE MONEY

Cows will always notice sudden diet changes and the resulting stress may challenge a cow's immune system, compromising herd health and performance. Unfortunately, the signs of inadequate mineral intake may go unnoticed in the short term, as producers are under pressure to maximise milk production at a lower cost. The challenge still remains one of keeping cows healthy and getting them into calf sooner. The most effective way to reduce feed costs and improve milk income of the dairy herd is to increase milk yield and improve the efficiency of milk production. Increased milk production is a function of a healthier herd, through stronger immune function; improved health and improved reproductive performance.

Figure 1 Effect of supplemental, complexed zinc levels on feed efficiency.



New research results

Zinc is one trace mineral that gets a lot of attention as it plays an important role in over 300 enzyme systems in the animal body. There is very interesting new research linking zinc to critical immune functions that may significantly improve production efficiency. A healthier cow ultimately consumes less feed as she is more efficient in using available nutrients from the same mouthful of feed as

an immune-compromised cow. A recent study by Nayeri et al (2014) determined the optimal level of zinc amino acid complex for lactating dairy cows and the results showed that improving the zinc supply to the animal through an effective source can have positive implications on milk production through improved feed efficiency (Figure 1), as well as improved fertility and decreased linear milk somatic cell count scores.



// Dairy producers should realise that efficient, high-producing cows will always make money, regardless of the milk price."

CONCLUSION

Balancing dairy cow rations requires that we balance to deliver proper amounts of amino acids, energy, carbohydrates and fats, and the correct amounts of macro and trace minerals in forms that the animal can utilise. "Dairy producers should realise that efficient, high-producing cows will always make money, regardless of the milk price," says Dr Hutjens. Therefore, it's important to continue focusing on milk production and not be tempted to take short-term shortcuts that could jeopardise herd health and productivity.

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