Chelating Minerals Version 1.1 16 May 2015

Chelation is promoted by some as better for mineral absorption by using lots of flowery meaningless statements, but no comparative costs and benefit trials.

From Florida University, "Information presently available does not consistently show advantages for chelated minerals in the diet."

A student from Wisconsin wrote, "Scientific studies do not support the idea of chelated forms of minerals to be better for growth or health. He asked for such studies done by reputable universities. Companies that have an agenda and are selling a product are not unbiased." There were no replies.

A successful person in mineral mixes, wrote to me, "They like to use terms like 'chelated', which I am very sceptical about, having never seen any objective scientific proof of effectiveness."

A client fed Solmin which has all sulphate soluble minerals, from 1989 with excellent results. In 2005, he was talked into chelated minerals by a salesman, after which his heifers become smaller and showed mineral deficiency symptoms. They had smaller bodies and showed cobalt deficiency (hair growing on top of its neck), zinc deficiency (hair on its crown) and thinner bones.

Mercury is usually used when chelating, to bind elements as done with silver in amalgam teeth fillings. Chelated minerals cost 10 to 15 times more per milligram of elemental mineral compared to normal, fully soluble, natural sulphate sources.

All comparative trials should be done on an equal cost basis, otherwise they are useless. I've been suggesting to Ruakura and NZ research people for 60 years that they do all trials on an equal cost basis, but still very few do, making some of the millions of research dollars spent annually a waste. Some of it is farmer's money. An example is the AgResearch $5,000,000 spent on research trying to reduce methane production by ruminants. It was a complete waste because the suggested solutions were to grow Sulla, a low producing legume that doesn't survive. Clover pastures make less methane than ryegrass pastures, but that has not been promoted, the opposite has, by those recommending the use of urea, but not recommending LimeMagPlus (Lime, serpentine for magnesium, and deficient elements based on the farm's ryegrass.) that grows more clover and pasture.

A client who fed Solmin for decades changed to chelated minerals, and his animals started to show deficiency symptoms, which they hadn't for the previous 20 years. Another changed from chelated minerals to Solmin, which with other improvements, reduced milk fever from about 10% to almost none, with a dramatic improvement in overall animal health and no worm drenching of calves, if LimeMagPlus is applied to increase earthworms which eat the dung, reducing parasites breeding base.

Animals need sulphur. Feeding the sulphur forms of minerals provide it. The oxide forms are not soluble in water and because many people are allergic to oxides, they are best not used unless necessary, such as when dusting pastures with magnesium, because magnesium oxide takes more rain to wash off the plant, than magnesium sulphate. Magnesium oxide is bitter, so some animals avoided it, so don't get their magnesium unless made palatable by mixing salt based minerals like Solmin with it.

It is known that copper, zinc and some others, are poorly absorbed by animals. Absorption figures are as low as 3% for some elements, however, part of the remainder benefits soils, so is not lost. Low absorption is not just from supplements, but also from pastures and other feeds.

Chelating was developed to overcome poor absorption, but I have not seen trial that it does, when compared with ordinary minerals on an equal cost basis, and there are times when the sulphate in minerals helps animal health. North American trials have shown that sulphur helps prevent milk fever.

I've asked chelated mineral manufacturers for figures based on costs and returns to show that chelating is rewarding, but have not received any.

Statements such as 'bio-availability of minerals is improved' mean nothing.

I believe that some chelating is done solely to be able to patent an item to be able to charge more.

If anyone has evidence of the financial benefits of chelated minerals please send them to me or tell me where I can access them. Thanks.

Vaughan Jones ONZM*, Dairying honours, M.Mkt.I

*Queen's honour for services to the farming industry.

International Agricultural Consultant, Journalist & Author.

GrazingInfo Ltd