Solmin & Mineral Feeding Version 1.5 19 July 2015

Pastures and crops can't supply enough essential minerals that are not in the soil.

I used to think that New Zealand grazing animals were well fed on correctly fertilised pastures. However, after consulting in USA from 1980, I saw the sheen on their best fed dairy cows which were fed total mixed rations (TMR) which included deficient minerals, and realised that ours needed minerals and trace elements too, so with our son-in-law and daughter share farmers for us, Ian and Sue Dobbs, we developed Solmin between 1982 and 1987.

Ruakura (AgResearch Hamilton, NZ) checked Solmin in 1990 and found they could be fed with facial eczema zinc treatment without any conflict. It has not been changed since it was formulated in 1987. DeLaval sold 1,000 tonnes a year.

When I encouraged US dairy farmer clients to change from confinement feeding to grazing, their cows produced reasonably well on good pastures with legumes, but they didn't look as well. The farmers thought it was because they weren't getting concentrates, but it was the minerals in concentrates that they were not getting.

I then paid even more attention to analysing pasture leaves and fertilising with elements that were deficient, and developed a soluble nine-mineral mix to be fed in the drinking water through a dispenser that I helped develop. The minerals improved their coats, condition, conception rates, milk fat, and protein percentages and temperament, and lowered milk 'somatic cell count' levels. The minerals were salt (sodium chloride), the sulphate forms of magnesium, sulphur, zinc, copper, selenium and cobalt and iodine. Some areas need boron, but fertilising with it is best because legumes and some crops, especially maize need it. The same applies to calcium, phosphorus and potassium. Never feed any of these. If deficient, apply them to the soil for added benefits in improved soils and plant growth.

History

When I was developing Solmin I checked hundreds of pasture analyses, animal blood and liver levels, and did on farm animal mineral feeding trials and adjustments to the mixes over about seven years. Trials were done without ARB approval because I didn't know that their permission was required, thank goodness, because I would have had to get permission for each of the dozens of trials.

Imitation copies of Solmin by companies have less of the minerals in them because the analyses were of pure element, but the minerals in the mix were in sulphate forms which have only about 25% of the mineral.

Animals Tamer

Almost all users reported that dairy animals and dry stock became noticeably tamer when on Solmin and that animal health improved and young stock grew faster. Sheen improved and dew on the muzzles increased (salt). Eyes became brighter and stopped running (magnesium). Heads and tails were held higher and brown dung on tails and body decreased (selenium). Droppings firmed (selenium and copper). Front hooves had hair grow over the joins and less hair then over the crown (zinc). No long hair on the main (cobalt) as shown on the 100% healthy cow on right and main hair growing on deficient cow on left.

Only natural sulphate minerals are used, with no flavourings. Minerals include fine sea salt, magnesium, zinc, copper, cobalt sulphates, iodine and selenium - all essential elements for livestock

production. There are many Solmin benefit photos in GrazingInfo.

Dispensing Systems

The recommended way to supply Solmin is through an inline dispenser, which is a tank type, whereby the animals' daily requirements are dissolved and put into the dispenser (twice a day on dairy farms, or once a day on drystock farms) so all animals get their required amount each day.

If a metering dispenser is used, then a check must be kept to ensure that the animals get the required amount, because the volume of water consumed changes with the weather. This means that more soluble mineral mix is consumed on hot days and less on cold wet days. With a tank dispenser this is overcome by applying the correct amount into the dispenser daily (twice a day for dairy cows milked twice a day), all of which goes out on the day.

When using a tank dispenser soluble mineral mixes can be dissolved and put in immediately before or after other elements like zinc sulphate for facial eczema or bloat preventers.

Cows before Solmin and my CalciumMagPlus and fertiliser mixes. Pukeroro Stud two years after correct fertilising and Solmin they looked like this on the right and produced double the New Zealand average.

Most of New Zealand is high in manganese, and almost all USA is low. Read Elements > Manganese and the other mineral chapters.

Surveys of Solmin while developing it for the last 12 and 14 months and then by 20 users.

Location	# Months Used	Cow Temp't	Heifer Temp't	Animal Apper'ce	Dung	Cow Cycling	Retained Placenta	Mastitis	Milk	Milk Fat	Milk Protein	Young Stock
Matamata	2	O	O	B	O	B	O	O	U	U	U	O
Matamata	3	B	O	B	O	B	O	D	U	U	U	O
Te Aroha	2	O	B	B	B	B	B	D	O	O	U	B
Pukeroro	4	O	B	B	B	B	O	O	U	U	U	B
Patetonga	3	O	O	B	B	O	B	D	O	U	U	O
Whitikahu	12	O	O	B	O	B	B	O	U	O	O	B
Tatuanui	4	O	O	O	O	B	O	O	U	O	O	O
Tirau	3	O	B	B	O	B	O	D	U	U	U	O
Waharoa	2	B	B	B	B	B	B	O	U	U	U	B
Walton	4	B	O	B	O	O	O	O	U	U	U	O
Matamata	2	B	O	B	O	B	O	O	U	U	U	O
Waiuku	2	O	O	O	O	B	O	O	O	O	O	O
Kereone	3	B	B	B	O	O	O	D	U	U	U	O
Rotorua	2	B	O	O	O	O	B	D	O	U	U	O
Matamata	2	B	O	B	O	B	B	O	U	U	U	O
Tauhei	2	B	B	B	B	B	B	D	U	U	U	O
Putaruru	2	O	O	B	B	B	O	O	U	U	U	O
Waharoa	2	B	B	B	B	B	O	D	U	U	U	O
Matamata	14	B	B	B	B	B	B	D	U	U	U	B
Matamata	3	B	B	B	B	S	B	S	O	O	O	B
Waharoa	6	B	O	B	O	B	B	D	O	O	O	O

B = Better, U = Up, D = Down, W = Worse, 0 = No change sometimes because already feeding minerals.

No other mineral supplement producer I know of anywhere, has done surveys.

Solmin consists of nine soluble minerals developed over seven years of research and tests in the field, monitoring animal improvement after adjusting the proportions of the elements used.

On most soil types animal health improved in the way of faster growth in young stock, improved sheen in all animals, brighter, less anaemic, eyes, less running of the eyes, heads held higher, more dew on the muzzles, freer joints, healthier looking horns and hooves and firmer droppings.

Only natural minerals are used with no flavourings. They include salt, magnesium, zinc, copper (except during facial eczema periods), cobalt, iodine and selenium.

The recommended way to supply Solmin is through an inline dispenser, which is a tank type, so the animals' daily requirements are dissolved and poured into the dispenser, twice a day on dairy

farms, or once a day on drystock farms, so all animals get their required amount each day.

If a metering dispenser is used, then a check must be kept to ensure that the animals get the required amount, because the volume of water consumed changes with the weather. This means that more soluble mineral mix is consumed on hot days and less on cold wet days. With a tank dispenser this is avoided by applying the correct amount into the dispenser daily or before each milking for dairy cows.

The cost works out at only $8 per cow per season, so is easily recouped in increased performance. It can be drenched or supplied through the water.

The recommended way is through an inline Dispenser, whereby the animals' daily requirements are put into the dispenser twice a day on dairy farms, or once a day on drystock farms, and the animals get the required amount each day.

If a metering dispenser is used, then a check must be kept to ensure that the animals get the required amount of 20 grams per cow per day, or the equivalent for young stock. Do this by calculating how long a bag should last, and check every week to ensure that the required amount is going out. Metering systems have to be watched and adjusted each time there is a change in the weather, whereas weather changes and water consumption changes don't affect the efficiency of inline dispensers, because the daily requirements are added and dispensed within three to four hours in hot weather and within eight to twelve hours in wet cool conditions. When using an inline Dispenser, Solmin can be put in immediately before or after other elements like zinc sulphate for facial eczema and bloat control. Adequate LimeMagPlus and earthworms, after two years eliminates the thatch that Facial Eczema spores breed in. We discovered this in 1960, so have not had facial eczema on either farm, while neighbours have. It is disgraceful that Ruakura and the rest of the establishment have not used or promoted it.

Farmers testing it found that the mobs getting Solmin needed only half as much worm drenching as those not getting it. They ate less and grew faster. See GrazingInfo for many more examples.

Always ask companies trying to sell you products to give you names of happy users for four or five years. You'll get none for Humates and similar, and for seaweed products. Beware of being referred to agents as users who will rave about it.