

The grazing animals of the future in New Zealand.

I've asked a Canterbury grass seed breeder if anyone has, or is, developing a fibrous low protein grass for alpacas.

Alpacas don't like or need lush clovers except when they are growing when they need protein. Once grown they need low protein pasture to produce fine wool.

They need coarse high fibre grasses with no endophyte because they suffer grass staggers very badly.

Is there a prostrate (low growing) cocksfoot or any other high fibre one that will stand close grazing all the time?

Correct mineral levels are important because they developed on low rainfall, slow growing grasses which are higher in minerals than fast growing ryegrass in high rainfall areas. In the Pasture analysis spreadsheet, column B has the optimum mineral levels for alpacas.

The sheen from Solmin in the water that shows up in the hair of cows, beef and sheep, improved the alpaca fibre so much that David Blom of CornerStone Alpacas, 49 Peach Road, Gordonton, Hamilton 3281, phone 07-824 2274, won 11 out of the 12 first prizes at a 2014 show. Their land got LimeMagPlus, which is lime with serpentine 23% magnesium silicate, when finely ground to be like pepper.

Alpaca AGM

When I was asked to give a presentation to the Alpaca AGM in May 2008, all I knew about Alpacas was that they originated in South America and were cute. Googling and Nick Cooper's site and visiting Chris Leach of New Zealand Alpacas Ltd, south of Cambridge changed that, however, I don't plan to teach breeders to suck eggs, but hopefully, how to farm to give more show prizes and profit.

Farming systems are similar for all animals and revolve around healthy soils, pastures and animals fed minerals because our soils are deficient in many minerals. What I recommend are basic, low cost, correct farming methods, on 100% grazed pastures, but not using the organic rules that prohibit the use of Selcote Utra and Solmin, because of minute amounts of items that make them better products.

I've consulted for more than 500 farmers in many countries. In 1999 I started consulting for an organic dairy farmer who had Johne's disease in the herd quite badly. All preventative practises were strictly adhered to and my standard farming program of sweet soils by not applying any acid fertilisers (superphosphate, etc.) was done. The incidence decreased, and since 2002 has been non-existent, so eliminated which is not easy to do.

This, and other examples of natural farming, using natural fertilisers, prove to me the saying that nature has the last word.

Don't think that preventing diseases is impossible. Many of my clients have eliminated even lice, reduced flies and stopped warts forming on their animals, by applying LimeMagPlus and feeding Solmin correctly. This is getting everything to optimum levels based on pasture tissue analyses for nine elements, which will mean applying adequate LimeMagPlus, of at least four tonnes/ha or double that if cultivating, and using Gafsa reactive phosphate which reduces heavy metals and increases the good minerals, NOT superphosphate which increases heavy metals and unpalatability of pastures. Applying other deficient elements, all to optimum levels, and grazing as your animals like it, not controlled starvation as we often see, clean water, etc.

I repeat, analyse pasture leaf analysis - not soils. The first and last time I did a soil test on our farms was in 1956, when I saw that doing so was wrong and useless. My phone goes a lot asking how to read and get sense out of a soil analysis. It is impossible, and even scientists don't agree on all aspects and systems, but leaf mineral levels are straight forward and allow variations to suit, the pasture and animals. See the spreadsheet called pasture mineral analysis, Row A, called Alpacas, and copy and paste it to Row AA.

Second to most, are those who say, "You consult for my neighbour whose farm is greener and whose animals are a picture of health, can you please help me?"

Thirdly, "My cows and I are stressed, can you help?" Usually from low calcium. Read the chapter on it, which shows the resulting high manganese as one cause.

Only once, "I can't get the animals out of the paddock."

This one is worth farmers knowing. Rain had fallen after a long dry period and leakage from cheap

small electric fence insulators and grass grown over the fence, caused the current flows to run across the surface of the soil on its way to the energiser earth, so through animals when they went to walk through the gateway. Take your boots off and walk with long strides down the lane, to feel the current flow.

Acid soils and acid rumens are rife in New Zealand, partly because of AgResearch's need to get fertiliser company sponsorships, so sufficient lime has not been recommended or applied to most soils in New Zealand for decades. 1.3 million tonnes was applied in 1981. Who'd like to guess how much was applied 2006? The same amount and it was not enough in 1981. Since then pasture and milk production per hectare has about doubled, taking calcium off farms and facial eczema has increased which is reduced by earthworms. Earthworm numbers & so soil microbes are lower because AgResearch recommends a soil pH of 5.7 or 5.8, whereas earthworms don't thrive until about 6.2 at which level P is more available. Zinc becomes less available, but 6 kg/ha of zinc sulphate fixes that at a cost of only \$10/ha.

Natural methods such as using Gafsa reactive phosphate and trace elements based on pasture analyses, rather than old fashioned superphosphates based on soil analyses, have given my farmer clients healthier animals than ever before. One claimed, the "healthiest for 50 years".

The excess sulphur in superphosphate leaches and takes other elements, especially selenium and potassium, with it. Complete details are in the 300 chapters in www.grazinginfo.com

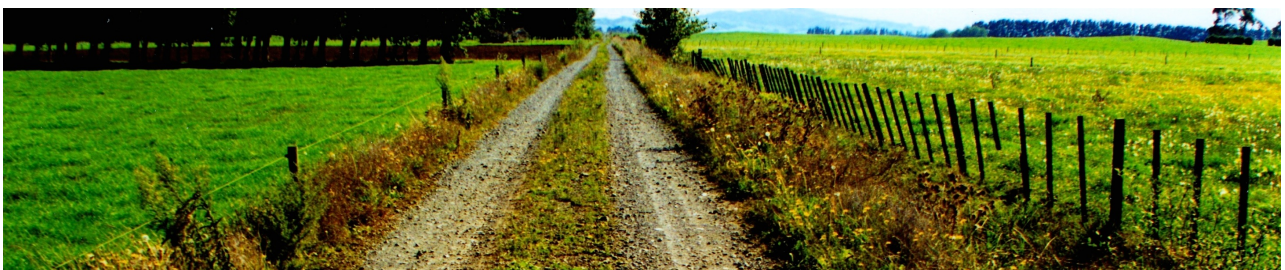
A USA Veterinarian in a study of 22,000 Llamas and 3,000 Alpacas in 27 states, found that 80% of **medical** problems were nutrition related and that even breeders with 10 to 15 years experience were still losing animals due to malnutrition.

Drainage

This is important when grazing wet soils. I worked on this heavy clay Tātuanui, Waikato farm in 1955 and was left to clean this metre wide blackberry covered drain by hand while the boss went to golf. Instead I pulled the drain bank off with the tractor and grader blade. I took this photo in 1990 when consulting for the new owner. Animals grazed to the bottom of the drain, so for 35 years it had not needed



cleaning and grew no weeds. Note the weeds and pugging on the left and none on the right. Pasture eating pests such as Grassgrub and crickets like dry soil conditions so they multiply in drain banks as on the left. This dairy land is worth NZ\$40,000/ha (without buildings) so the extra pasture grown in the right paddock is profit. This is winter. The bare poplar trees let sun through in winter and give shade in summer. The posts in the electric fence should be three times further apart to reduce costs, maintenance and leakage.



Below left is our first farm and a neighbour's on the right. Optimum lime is a main reason. Chisel ploughing and balanced natural fertilising helped.

No weeds on our farm while across the fence the neighbours' were covered shows that even under identical drainage, the extra lime and conditions on our farm that pastures like, gave weed-free pastures. We never sprayed for weeds. I carried a long handle shovel as I walked down one side of the farm to fetch the cows and back on the other, grubbing as I went. My wife and children did the front paddocks. None was allowed to seed. A Matamata client sprayed with 2,4-D. It halved the earthworm numbers. He couldn't believe it until I showed him, but hadn't looked. I found the same thing on a Whatawhata hill country farm. Weed germination on the bare patches was higher on both farms because clovers had

suffered and not covered the bare areas, and there almost no earthworms to eat the weed seeds.

Some complain about losing clovers and blame all and sundry. The reason is often insufficient LimeMagPlus. Near Matamata a farmer with a soil pH of 5.8 would not apply lime - until seeing a trial at 3 t/ha of LimeMagPlus that I did on his farm.

Boron also helps pasture take up sugars (energy), calcium and magnesium, and helps keep pasture potassium levels down. High potassium levels in pastures are a serious problem in New Zealand because the establishment, and even private laboratory recommended levels are too high. Some AgResearch scientists have admitted this, but do nothing about making changes, for fear of being called a “whistle blower”, or “rocking the boat” in a government department, so nothing happens. The owner of a private laboratory agreed with me, but didn’t want their figures to be too different from AgResearch. My overseas clients even from Slovenia couldn’t believe how wrong NZ AgResearch was. Soil tests and some hungry for fertiliser company commissions advisers, cause this. Pasture analyses stop it. The following UK clover figures in pasture tissue confirm the above.

No Boron Applied

B	K	Ca	Mg
11 ppm	2.1%	0.7%	0.4%

Boron Applied

B	K	Ca	Mg
50 ppm	1.6%	1.1%	0.7%

All these changes in levels after applying B, are beneficial to livestock health, but B should not be as high as their 50 ppm. See Pasture Mineral Analysis for accurate Alpaca mineral requirement figures.

Alpacas on the farm of Chris Leach of New Zealand Alpacas Ltd south of Cambridge.



One kg/ha of slow release Selcote Ultra, or if organic, Selenium Chips which are not as good because of their fast release. Half a ml of Selovet 5 per adult Alpaca in the water helps reduce staggers. Cocksfoot eliminates it.

Clovers - Kopu large leafed white clover is bad. Kopu failed in 1988 after there years in my trials, but the establishment kept recommending it until 2013, costing farmers collectively millions of dollars. Kotare ll medium leafed white clover has replaced Kopu. Tahora small leafed white clover highest N. Many of the things mentioned above reduce facial eczema. Read the chapter on how to eliminate it completely without zinc, but with LimeMagPlus.



Which heifer is healthiest?

Both were bred and reared on the same farm until six months before the photo. The one on the left grazed conventionally fertilised pastures on Hamilton clay loam while the other grazed peat pastures fertilised correctly and had Solmin, a soluble mineral mix. Holding the head higher is the first sign of good health. Healthy animals can tolerate small amounts of endophyte and facial eczema.

Forget about soil tests. Get a ryegrass analysis and use the Lime Nutrient Planner spreadsheet to get half a tonne of LimeMagPlus from Rorisons or less from Lynda Kamphuis and do trials like described below. Read Calcium in Minerals in Soils, Pastures & Animals to see more.

Phone Farmlands or RD 1 for agricultural lime prices which can vary from \$5.80 to \$8 per 25 kg bag. Buy one and put down several comparative trials to see how better LimeMagPlus is on different parts of your farm at 6 kg on 20 m², 4.5 by 4.5 metre trials, which is 3 t/ha (3,000 kg/10,000 m² or 3 kg/10 m²). Draw plans of your trials and record the dates. It might take a year to see all the improvements in earthworm numbers, improved soil and less dead ryegrass. Dead ryegrass (not at ground level) breeds endophyte spores. Take note of the grazed height before and after each grazing. Most will graze limed areas shorter so it will start from below the surrounding pasture.

The grazing habits and fibre requirements of Alpacas make it hard to prevent endophyte toxicity and facial eczema, but it is not impossible.

Trojan NEA2 perennial ryegrass is preferred by animals because NEA2 is a palatable endophyte. Old perennial ryegrasses, especially Yatsyn and the newer AR7 ones, are high in endophyte, so disliked by animals. Growing clovers in the pastures improve it by providing other than just ryegrass. Lime increases the availability of selenium, calcium and magnesium, all of which help reduce endophyte toxicity effects.

Selection

On our second farm near Hamilton we grazed dairy heifers. One mob got bloat while another didn't, so I did some research. They came from farms in the same area. Both were Jerseys. The bad ones came from a farmer who had always drenched, the bloat-free ones from a farmer who never drenched, but kept replacements from bloat-free animals.

Some sheep farmers have bred facial eczema-free flocks, which took three decades or more.

Pasture Species

Wana (short) and/or Tekapo (taller) cocksfoots and Tonic Plantain have no endophyte and almost no facial eczema spores.



Herbs

The green below left photographed on Waitangi Day at the height of the 2008 drought is Tonic Plantain giving feed on Waikato dry peat pasture. It's a deep rooting herb that Camelids should like and thrive on. It is comparatively low in protein (23%, versus pasture at 28%), but higher in calcium, sodium, copper and boron. That on the right is in winter. Plantain can be oversown in spring or autumn, but can fail if not trampled in and/or if rain doesn't fall. This was oversown on a Whatawhata clay.

Get some Choice or Chico Chicory seed and oversow the whole farm with 1 kg/ha with your lime mix.

Forage crops

Ones like Pasja (Nutrifeed or Japanese millet should be added) and can produce dry matter more cheaply than pasture in dry summers. See Spreadsheets > Pasture Silage Hay Crop costs. Also see Forage Crops.

Summer forage crops reduce facial eczema and endophyte problems.

Many of my clients have done their own comparative trials before changing completely to ideas I have suggested - which seem so opposite to what they have read and been told all their farming lives. I encouraged them to do their own trials and I suggest that you do too. Once you have seen results on your own farm, you won't forget or give up an idea - even if peer pressure gets strong from those tied to the establishment. Father and son, and sharemilker and owner differences can be fixed amicably after seeing one of these trials.