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DoloZest® News

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Why more is better – always

“We know we grow less, but the quality is better.”
It’s easy to say but it’s illogical and therefore wrong.

The quality of browntop dominant pastures can never be higher than that of a high-quality grass/herb and clover sward growing twice as much drymatter in a twelve-month period.

When it comes to pasture and crops more is always better. Leaves are the solar panels that turn nitrates into protein and carbon dioxide into energy and bigger leaves mean more of both.

Bigger solar panels result in increased sunlight intercepted and photosynthesis takes place on a grander scale, which means additional soluble sugars are formed.

Over winter more soluble sugars results in improved animal performance, and during spring and early summer extra protein provides greater amounts of milk and meat.

Increased winter crop growth

Recently received yields for fodder beet, kale, and swede crops from a property two years into a total nutrient programme indicate a significant increase in dry matter, even allowing for excellent growing conditions since planting.

Growth during the rapid growth phase was exceptional and there was insufficient pest damage to warrant the crops being sprayed with insecticide.

There is a double whammy here as the energy content of the crop will also be higher, which means fewer kgs of dry matter are required to maintain animal body weight over winter.

Observationally, animals are more easily satisfied spending more time sitting ruminating and less time grazing.

Calcium is king

It’s easy to understand how the conventional growing system has become N, P, K, driven, but that doesn’t make it right or the best.

Phosphorus, potassium, and nitrogen are essential growth elements and at any given time most plants will respond to extra applied nitrogen. There’s nearly always an immediate change in colour, and because

time, money, and effort have been invested, that change is seen as positive.

Synthetic nitrogen applied to the soil stimulates rapid bacterial activity. As populations grow there is a requirement for energy and soil carbon being the most readily available is therefore consumed.

Because nitrogen and carbon are linked, any loss or ‘burning’ of carbon results in the freeing up of nitrogen which is taken up by plants.

See *The Dark Side of Synthetic N Fertilizers* (Dr Richard Mulvaney) <https://youtu.be/Kgy6g44pEIo>

Nitrogen being an anion (negatively charged ion) attracts cations (positively charged ions) and in most soils, particularly when moist, the most readily available cation is potassium.

N boosted plants with excess potassium relative to calcium are increasingly prone to insect and disease pressure.

Calcium provides the structure resulting in plants that are stronger and less likely to be damaged by wind. The uptake of calcium also increases the trace mineral concentration in plants.

Testing

Soil tests help with the formulation of solid nutrient inputs, however they don’t necessarily indicate plant uptake of the major elements, and usually provide little useful information on trace mineral uptake.

A leaf test is the best means of knowing what is being eaten by animals, particularly in spring, and a leaf test of rapidly growing pasture in September/October helps with the formulation of trace element supplementation.

Sodium, in the form of salt, is an essential animal requirement although only required by most pasture plants in very small amounts. Having salt available at all times, when practicable, is likely to improve animal weight gain, milk production, and overall health.

The Dominion Salt Technical Bulletin 1 states, “**No man or animal can live without salt.** Man’s body contains almost 450 grams of salt and the bodies of domestic animals a larger or smaller quantity in proportion to their size.”

The following chart from Technical Bulletin No 3 shows the difference in plant uptake of salt, which means it is not possible to formulate an effective daily salt allowance for animals, whether a commercial dairy herd or mob of fattening animals.

The easiest and most effective means of satisfying animal demand is to have salt available at all times. Salt blocks or large lumps of natural salt work well. Salt dissolved in troughs can cause issues if the flow of water is insufficient or interrupted

Plant Species	Sodium (% dry matter)		
	Shoots	Stubble	Roots
Natrophiles			
Phalaris	0.44	0.45	0.13
Oats	0.41	0.53	0.28
Chou moellier	0.41	0.23	0.14
Yorkshire fog	0.40	0.33	0.11
Kale	0.38	0.30	0.19
Subclover	0.36	0.53	0.25
Cocksfoot	0.35	0.40	0.18
White clover	0.35	0.34	0.20
Tama ryegrass	0.34	0.39	0.10
Nui ryegrass	0.34	0.37	0.14
Prairie grass	0.34	0.37	0.24
Ariki ryegrass	0.34	0.35	0.19
Barley	0.33	0.54	0.34
Ruanui ryegrass	0.33	0.38	0.15
Lotus	0.30	0.24	0.23
Tall fescue	0.24	0.23	0.19
Rape	0.23	0.48	0.25
Natrophobes			
Brown top	0.17	0.46	0.20
Meadow grass	0.17	0.29	0.24
Japanese millet	0.13	0.24	0.19
Red clover	0.07	0.25	0.44
Paspalum	0.06	0.15	0.28
Kikuyu	0.05	0.11	0.22
Timothy	0.04	0.37	0.24
Lucerne	0.04	0.26	0.42
Alsike clover	0.03	0.35	0.21
Lupin	0.03	0.14	0.74
Desmodium	0.01	0.29	0.49
Sudax	0.01	0.09	0.37
Maize	0.01	0.01	0.28
Soya Bean	0.00	0.02	0.41

trend over time that is important and the measures that Landcare Research and others have acquired are just as readily obtained by farmers.

Revolutions historically have occurred because of what a sector of the population deems as unfair taxes.

Plants differ greatly in their ability to absorb and transport sodium from their roots into their shoots.

Natrophiles (Sodium-loving):-
Plants which readily absorb and transport sodium from their roots into their leaves.

Natrophobes (Sodium-hating):-
Plants which have low rates of uptake and accumulate sodium preferentially in their roots and lower stems, and therefore, have very low concentrations of sodium in their leaves.

Natrophobes are incapable of providing enough sodium for grazing animals, even when the soil they grow in is not deficient.

We are rapidly approaching that point here in New Zealand and the farming community has not only the right but the obligation to make their feelings known.

Filling the feed-gap in the second half of September

The use of synthetic N is a tool available to all farmers and a useful one if there is a looming deficit in the feed budget. A one-off application 6 weeks prior to the start of the deficit, typically occurring in the second half of September will provide

some extra growth over that time.

When applied in the form of WinterZest, a 50/50 mix of Zest and Sulphate of Ammonia, less N may be applied with a similar growth response and the lag phase that follows appears to be minimized.

All fertiliser inputs go better with carbon, carbohydrate, and an inoculation. Zest contains a proprietary mix of beneficial fungi and bacteria, carbon and a carbohydrate.

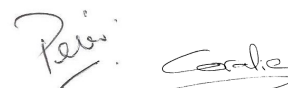
Low nutritional value of second round pasture

There are two issues to be mindful of regarding second round pasture in spring. It will contain less fibre and energy than pasture that has grown over winter. And our testing shows a lower concentration of essential trace elements relative to autumn/winter grown pasture.

The ideal supplement at this time is high quality meadow hay as it contains high levels of essential energy, fibre, and trace minerals. Made freely available, animals will only eat what is required to balance their diet. Production is enhanced and weight loss lessened.

When high quality hay from excess summer pasture is in short supply, lucerne hay or baleage made from mature pasture can be highly effective.

Regards,



resulting in a slurry developing. Animals drinking this can suffer from excess salt intake.

‘Greening’ momentum underway

The greening of the planet is picking up momentum and everyone, farmers included, is being caught up in a movement where perception and reality may radically differ.

Incentives to buy electric motor vehicles are now in place and coal is being banned as a fuel source. It is all happening at a speed that allows little time for thorough research. The danger for farmers is that there is a widely held perception that pastoral farming is a net polluter and animal numbers will have to be reduced.

As with all reform, good technology will be thrown out and the new stuff replacing it ultimately may not be significantly greener, when everything is taken into account.

The data in the models being used to determine carbon loss or gain in pastoral farming needs to be made available. It’s also essential to know how those measures have been made so that farmers can monitor their own properties, and ensure the model accurately reflects what is occurring.

The argument that because soil held carbon fluctuates it cannot be accurately measured is invalid. It is the