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## **DoloZest® News**

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### **The potential upside of M. bovis**

The harsh reality of Mycoplasma bovis will continue to be felt by an increasing number of farmers, their families, and communities. There's vets, MPI staff and others that will also have to cope with the trauma of this disease.

Getting through will be tough, good farmers will be lost to the industry, and the healing process for those impacted will take time. Hopefully eradication is achievable.

Having farmed through drought, a severe outbreak of facial eczema, and the financial turmoil of the late 1980's we empathise with all those affected.

It's often said that for every calamity there's an equal and opposite upside. Although at the time that can be very difficult to accept, it's later that it becomes apparent.

We were invited recently to a two-day Collaborative workshop at Manaaki Whenua - Landcare Research at Lincoln. The topic was, **Can enhancing biological and ecological relationships, functions and systems provide an alternative agricultural pathway for NZ?**

A full-house of sixty-five attended including farmers, land owners, consultants, researchers, and policy makers. It was two days of intensive, superbly organised and convened workshops, with everyone taking the opportunity to contribute.

What became apparent was the overall awareness and acceptance that fundamental change is required for the farming industry to move forward on a genuinely sustainable basis, and it is essential that the process of large scale change starts immediately.

For Functional Fertiliser clients those steps and processes are already well underway, and over time as soil health steadily improves and total pasture growth lifts, the system strengthens and the benefits become increasingly obvious.

The link between soil, plant, animal, and human health is undeniable, and it is the health of the soil that determines the vibrancy and resilience of all other aspects. It is important to bear in mind that the purpose of farming is providing **food for people.**

Pest and disease is always present, and healthy soil does not mean that damage by either or both will not occur.

New disease, to which animals have not built immunity, will inevitably result in animals being infected. However the health of the overall operation will determine the severity, the number affected, and the speed of recovery.

A formerly widely held concept, that hopefully is being rapidly debunked, is that pastoral systems resulting in modest growth throughout the year produce higher quality feed. It's been a while since I've heard the comment, "we know we grow less but the quality is better".

In our view the natural world doesn't operate that way. It is the strongest and healthiest plants that provide the best tucker for animals, and food for people.

And the healthiest animals and plants require the least antibiotic and pesticide support, an increasingly important aspect of food production. The latest Total Diet Study, just released by the Ministry of Primary Industry showed that 22% of baby foods tested positive for insecticides.

The same report also raised the issue of increasing glyphosate residues in a range of widely consumed foods.

We fully appreciate the importance of protecting animals and crops through the use of remedies, fungicides and pesticides. The goal is to build natural systems sufficiently robust that intervention becomes unnecessary.

Our work with deer over nine years, using a Functional Fertiliser programme and sound

grazing management, showed that the use of worm drenches was unnecessary, with faecal worm and egg counts dropping steadily over time to almost zero.

Farmers and growers are increasingly caught in a short term versus long term dilemma.

Eliminating potential threats is strongly advocated by those selling drenches, and they do provide peace of mind. However it's important to question whether this comes at the expense of long term sustainability.

The same applies to the regular use of applied nitrogen to gain extra short-term pasture production. The MAF data prior to the regular use of nitrogen fertiliser shows that annual growth under N driven systems is now 15 – 20% less than that achieved 30 years ago.

One of the consequences of regular and continued 'bag N' use is the loss of soil crumb. The subsequent compaction impairs root development and the speed at which soil-held nutrient is cycled.

Under this system the usual 'remedy' for slow growth is a further application of nitrogen, which often provides a visual increase, but this simply masks the underlying issues.

**The dangers of excess nitrogen in growing systems has been known about for many years.** Freams Elements of Agriculture, 13<sup>th</sup> Edition 1949 contains the following passage, *"When growth is forced, and the leaves and stems are luxuriant and sappy, plants are usually more susceptible to parasites. Thus a too liberal use of nitrogenous manures, in attempts to produce exceptionally heavy crops may defeat its purpose by inducing a severe attack of some fungoid disease."*

The first edition was printed 1932, 20 years after the first ammonia plant was built, the forerunner of today's ammonia-urea industry.

Functional Fertiliser total nutrient programmes are based on the requirement for soil nutrients to be maintained at appropriate levels based on sound long-term scientific data.

The difference lies in the requirement for fertiliser nitrogen. By stimulating natural soil processes and an increase in natural nitrogen fixation, primarily by clover, a sustainable

increase in pasture production is achieved, without the requirement for extra N.

Greater leaf surface area leads to more plant sugars being created via photosynthesis. Pasture become more palatable and stock intake increases, with a subsequent lift in per animal production.

When plants photosynthesise more efficiently an increase in full protein also occurs. This is important as milk and meat is consumed primarily for its protein content.

This results in more rapid weight gain, particularly of young animals, and the milk of lactating animals also contains more protein. The protein to fat ratio of the milk from the Berryman property in 2012/13 season was 0.86: 1 well above the district average of 0.73: 1.

There's a further advantage available from pasture with both higher energy and protein levels. Less total feed is required to produce a kilogram of meat and milk, with independent data showing 21% less feed consumed over twelve months to produce each kilogram of milk solids.

Doing things differently is seen as fundamentally risky and, as a result, we naturally resist - that's normal. However, when we know change is essential there's an added incentive to embrace the new, particularly when there's time to do so at one's own pace.

As new-to-our-system people are appreciating there is no 'transition', or loss before gain period. Extra growth is available from day 1. What often takes time is the implementation of the grazing systems that ensure maximum benefit is obtained.

Functional Fertiliser provides good background information, and there's an increasing number of clients that are willing to share their experiences, and support.

It's often been said that many a true word is spoken in jest. We thought the following from *Eeyore's little book of Gloom*, inspired by AA Milne, worthy of inclusion.

***The Wrong Answers are the ones you go looking for when the right answer is staring you in the face.***

***Functional Fertiliser – the Future of Farming***