NZ GRASSLAND ASSOCIATION
Fuelled by Science, Tempered by Experience

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Fuelled by Science, tempered by experience …It's the strap-line for the New Zealand Grassland Association (NZGA) and together we are upholding the line. We look critically at statements that are made about agriculture: products and systems must stand the test by presenting evidence, statistical analysis and credible interpretation. They must stand the test of time, too.

'Evidence based decision making' is increasingly the Government approach, stimulated and backed by Professor Sir Peter Gluckman, Prime Minister's Science Advisor.

In agriculture, however, there is an increasing plethora of advertisements that are backed with testimonials rather than data, some offer little or any evidence of scientifically-based trials and experiments (though at times offering the catch-phrase 'scientifically proven' or 'that's a fact').

NZGA has had an on-going role in supporting scientists and assisting farmers to understand the various options being presented as solutions for increasing sustainable production.

The Association has also stressed the importance of time in research. Dr John Caradus, for instance, has talked eloquently and written on the subject of cultivars and early claims. The Blenheim NZGA Proceedings (2008) contain his Presidential address. The newsletter that was produced at the end of that year contains the main points, and in the same newsletter we summarised the research from the long-term phosphate withholding fertiliser trials, showing that the effect of withholding phosphate fertiliser didn't appear for 3-7 years, depending on the geographical location and the original phosphate status of the soil. Nutrient cycling disguises the effects of a change in inputs – it buffers the ecosystem – and the cycle takes time to wind down.

Professor Tony Parsons, AGMARDT Chair in Carbon Cycling at Massey University, and colleagues, have explained the challenges with measuring soil carbon, the effect of increasing fertiliser, and stocking rates, (and more recently of using dairy vs dry stock systems), on the prospects for soil C sequestration, and given the *caveat* on cost (see NZGA Proceedings 2009). He has also explained that to reach a new equilibrium takes time – 50 to 100 years, for instance, and that being the case, it is difficult to see how a three-year trial could give the answers required on what changes it. Tony has also played an important role in assisting in the understanding of why methane is an increasing problem in the atmosphere (see newsletter July 2010).

In the last newsletter Dr Bruce Thorrold, DairyNZ wrote carefully and clearly on biological farming; carefully because it is, like organics, an emotive issue. Bruce has pointed out that considerable work over the years has shown that the response to any input or 'active ingredient' is proportional to the amount applied. Research has shown that nutrients (P, K, S, N, Mg etc.) lime and gibberellic acid are active ingredients. "The effectiveness of products such as DAP slurries, fine lime, seaweed extracts, di-calcic phosphate, serpentine and compost teas can be predicted from the amount of nutrients and lime contained by these products. There is no evidence that fine-grinding, foliar application, slurries or biological material in these products improves their effectiveness over and above the active ingredients applied."

Associate Professor David Horne, Massey University, has investigated various products currently on the market recently, and concludes, like Bruce, that efficacy is in line with the nutrients they contain. He has submitted a research paper for the conference this year in Gore. Dr Doug Edmeades has also submitted a paper on different products in use in New Zealand. He has analysed publicly-available research results and concluded where the balance of evidence sits, based on statistical analysis.

Scientists are frequently accused of not evaluating what are presented as alternative products. The fact is that considerable research funded by governments through universities and scientific research institutions (and therefore funded by the tax payer) has not supported claims. There is, paraphrasing researchers in Australia 'a moral limit to the amount of tax payer money that should be spent on evaluating products that companies with what they believe to be a commercial advantage should be testing themselves'.

It is also worth noting that the medical profession is also being challenged to consider alternative treatments in therapy. The response is that if they work they are called 'medicine'.

The issue of time is vexed. Commercial entities are under pressure to put products on the market; scientists and academics are under pressure to report 'ground-breaking' outcomes; farmers want [simple] answers, and politicians want policy advice, on what is topical, and while it still is. Some hypotheses and evaluations can be tested in this short a time frame. But In biological systems the appropriate time frame can be several years in order to encompass generations and seasons and years. Or decades if it is to address the deterioration (un-sustainability) of the agro-ecosystem and ecosystem 'services'. If the time frame is too great for direct observation, different approaches have to be used. 'Proof of concept' is a good start (e.g., the High Sugar Grass paper, Parsons et al 2007 Wairakei Conference). Another approach is to use process-based modelling. This type of model uses knowledge of how biological processes interact with environment and have the added capacity to predict what might occur in the future (for which of course no 'data' exist). It can also be used to identify key drivers of change. This is the approach Tony Parsons uses for his work in soil carbon. More difficult is evaluation of cultivars and how long the trials should continue. John Caradus made the point in his presidential address. This year Graham Kerr, a member of the NZGA Executive, has submitted a paper on the topic.

NZGA is working with as many members of the agricultural community as it can to ensure that good information is available for farmers. The conference in Gore this year promises to be informative, challenging, and enjoyable.

We on the Executive are looking forward to seeing you there, in the knowledge that your attendance and engagement will enable us to go on being fuelled by science and tempered by experience.

2012 Gore Conference dates

6-8 November

Venue: Gore Town and Country Club, Bury Street

(http://grassland.org.nz/eventdetails.php?eventnum=10)

Opportunities available for famers

Farm smarter - not harder: Agribusiness training for farmers

Beef + Lamb NZ, the Agriculture Industry Training Organisation (AgITO) and Open Polytechnic have partnered to produce a pilot programme to help you to improve your on-farm productivity and get the returns you deserve. Learn how to efficiently use existing resources and customised tools that will save you time and add value.

The first workshop will be at Invermay, Mosgiel, 23 July.

http://www.openpolytechnic.ac.nz/campaigns/enrolment/agribusiness-production-and-profiitability-training-for-farmers

The annual Lincoln University Foundation South Island Farmer of the Year Award—entries close Aug 1

The annual competition acknowledges excellence and innovation in farm management practices and their contribution to leadership in land-based production. It is open to South Island land-based farmers, managers, partners and businesses. The entry form is available through our website (http://grassland.org.nz/).

Farmers who have won say winning the competition is "good for business".

AgMardt Agribusiness Innovation Grants

AGMARDT Agribusiness Innovation Grants provide an opportunity for applicants to:

Pursue 'on the edge' ideas that can transform a business or industry;

Speed up innovation and respond quickly to opportunities that are driven by new ideas or insight arising from the marketplace;

Facilitate linkages between innovative New Zealand researchers, producers, processors and marketers; and

Gain a better understanding of world class best practices.

The closing dates for Project Applications are **30 April, 31 July and 31 October in each year.** For further information http://agmardt.org.nz/grant_applications/agmardt_agribusiness_innovation_grants/