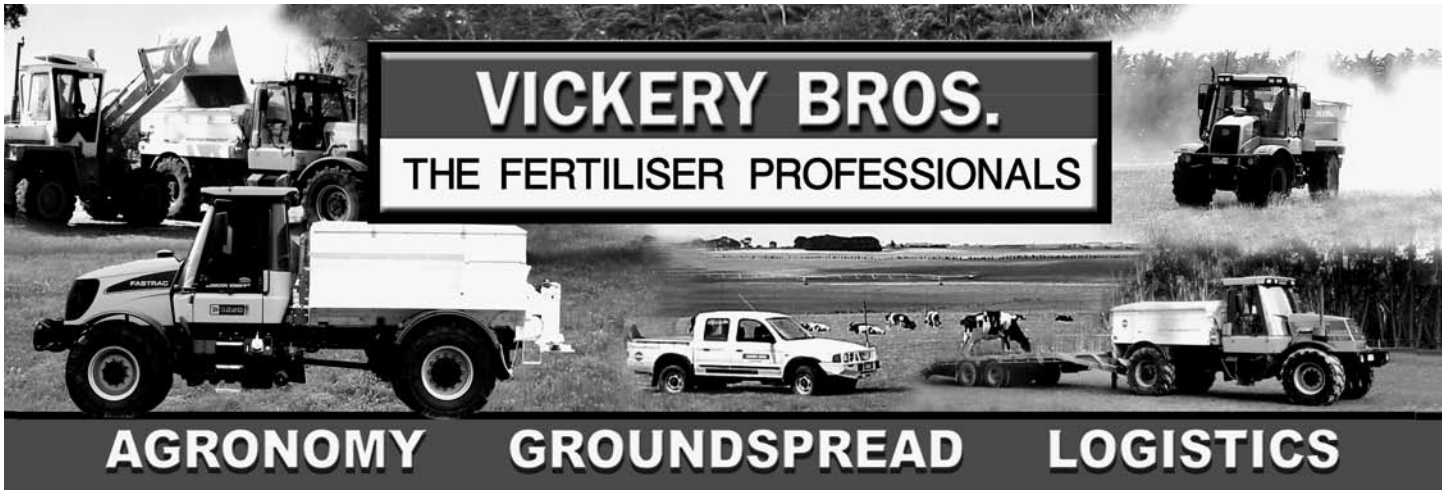


September 2006

SPRING NEWSLETTER

PLANNING AND OPPORTUNITIES

By Geoff Robertson

Yes it is staying dry, and at the time of writing this everyone has either their eyes scanning the horizon for the next sign of a rain cloud or more probably searching their favoured internet site for the current weather predictions. As yet we have been unable to find any that are able to reliably predict more than the next couple of days out and even then their predictions of rain invariable are downgraded to showers and ultimately end up as drizzle.

Contents:

But still pasture growth in August for most of South West Victoria has been excellent with good pastures achieving 30 to 40 kg of dry matter per ha per day and rotationally grazed dairy pastures assisted by nitrogen achieving 60 kg of dry matter per ha per day (makes my mouth water). Ryegrass leaf emergence rate is approximately 12 days per leaf, therefore for those that are rotationally grazing, rotation length should be approximately 36 days and falling.

I am sorry for generalising and recognise there are some areas where stock are still being supplementary fed and are going into spring with low pasture cover. However producers operating under these conditions are not the only ones needing to have a plan for the coming spring and summer and to question their strategies.

- *What are your plans if the spring fails in mid October?*
- *Will you have enough feed for summer?*
- *How much stock water do you have available if we receive no more run off?*
- *How likely is it that we will receive any further run off?*

Planning

Aim to have a minimum of 3000 kg of dry matter by mid December to ensure adequate summer feed for stock, grain will be dearer this year so extra pasture grown over the next two months will be valuable. Nitrogen is an effective tool for producing more feed (as long as it is utilised) and should be considered while we have good growing conditions in September and October. Paddocks that have good soil fertility and are "grassier" will provide the best response, if elements such as Phosphorus, Potassium and Sulphur are also limiting then a "boosta" product should be considered. If we do end up with average spring rains then the extra growth can be utilised as hay, silage or adding value to bought in store stock.

Water budget

Adequate stock water is obviously required to ensure good pasture utilisation. Animal intake is influenced by factors such as the quality of pasture and the water itself, daily temperature, stock age and condition. The following figures are offered as a guide to allow for some budgeting, the amount of evaporation

will also need to be considered when calculating summer water requirements.

Stock	Water requirement per day (l)
Sheep	
Weaners	2 to 4
Adult Dry	2 to 6
Ewes with lambs	4 to 10
Cattle	
Lactating Cows	40 to 100
Young Stock	25 to 50
Dry Stock (400kg)	35 to 80

Speaking with rural merchandisers, there is plenty of poly pipe being sold to shift water around farms or from creeks to dams. However paddocks that will not have enough water to carry stock through should be harvested for hay or silage or prioritised by grazing early to ensure good utilisation. Dry carry over feed left on paddocks after the autumn break have a big impact on the composition and hence quality of that pasture in the future.

Hay and silage

Paddocks being shut for hay or silage production should be weed free and monitored for insect pests. Hay and silage removes significant amounts of nutrient from paddocks and replacement needs to be considered particularly if the hay or silage is sold off the farm, the annual fertiliser program should reflect this utilising split nutrient applications with or without nitrogen. Under fertilising pastures and "mining" nutrient from the farm will become an environmental and economic issue in the future, as is over applying pasture and crop nutrient.

Nitrogen Myth Busting

The effective application of nitrogen (N) to pastures and crops to improve yield and profitability still holds some mystery for some producers. The facts are that in this region on acid soils between May and November when plants are actively growing.

- There is little risk of volatilisation
- It does not need to be applied while it is raining
- The response to N, when other elements are not limiting, is the same regardless of the product used eg. Urea, Sulphate of Ammonia or DAP
- DAP can be cost effective if Phosphorus is also limiting.

SOIL AND TISSUE TESTING

By Harry Armstrong

Planning for next years fertiliser program should start now. Assessment of pasture performance and species composition is an ongoing process on most farms. Spring is the ideal time to assess things such as clover content as well as targeting paddocks for manipulation or renovation. Regular soil testing gives an excellent guide to the fertility status of our soils.

Unfortunately soil tests are not a reliable indicator of trace element deficiencies, so if we use soil testing alone, many trace element deficiencies can go undetected. The solution is to regularly conduct tissue tests in spring. Tissue testing gives a reliable guide to the level of trace elements in pastures and crops. The most commonly detected deficiency in pastures in our region is Molybdenum (Mo) and responses to applied Mo in these situations can be quite dramatic. Poor clover growth when all other nutrients are in ample supply can be an indicator of low Mo levels. Pastures low in Mo can also be adversely affected by poor clover nodulation. Grazing management and many other factors also affect clover content, so confirm any suspicions you have with a reliable tissue test.

The cost of a tissue test is about the same as for a soil test (approximately $100 each). This small outlay represents tremendous value for money when you consider the fertiliser costs of most farm enterprises and the leverage gained from such test results to maximising financial efficiency of your fertiliser application.

Using tests from accredited and certified testing laboratories gives producers and advisers the confidence to predict responses to applied nutrients. There are soil testing labs around that only have ASPAC (Australian Soil and Plant Analysis Council) accreditation, but not that many that are both ASPAC as well as NATA (National Association of Testing Authorities) accredited. Always insist your samples are sent to a lab with **both** ASPAC and NATA accreditation.

Vickery Bros agronomy team is available to take soil or tissue samples on your property this spring. Ring now to book a soil or tissue testing appointment.

PASTURE SOWING IN SPRING

By Harry Armstrong

Why?

Pasture renovation is usually undertaken in autumn. While this is still best practice in most cases, spring sowing can give outstanding results especially when establishing Phalaris, Fescue and late maturing Ryegrasses.

One of the main advantages with spring sowing is the improved weed control achieved. This is important when establishing varieties with lower seedling vigour such as Phalaris and Fescue. Inundation and waterlogging (not that there has been much of this over the last couple of years) are the main causes of failure in new sown pastures. Spring sowing avoids this potential risk.

Another advantage of spring sowing is that it is done at a time of year when feed is plentiful. Spring sown pastures can provide some green feed over summer in their first year, but care needs to be taken not to overgraze them during summer.

How?

- As with any renovation exercise, good planning and attention to detail are vital.
- Weed control and moisture conservation are the keys to success with spring sown pastures.
- Direct drilling is the preferred method as cultivated seed beds tend to lose too much moisture and make grazing more difficult as stock can pull out entire plants if the seed bed is too loose.
- Spraying with herbicides twice prior to sowing is not uncommon. First spraying should be around August, with the second just prior to seeding.
- If there is a significant amount of bent grass present, a summer crop should be considered.
- High rates of glyphosate (4 L/ha) are required to deal with bent grass.
- Aim to sow seed into a moist but friable seed bed.
- Sow 100kg/ha of DAP down the tube.
- Consider cross sowing to minimise gaps.
- Roll immediately post sowing if dry enough.
- Clovers can be included in a seed mix, sub clovers require 12 weeks of good growing conditions to set enough viable seed.
- Phalaris and Fescue can be sown together but don't mix them with ryegrass.
- Sowing rate for Fescue is 15-20kg/ha. Phalaris can be added at 2kg/ha.
- For Phalaris alone the sowing rate should be 4-5kg/ha.
- Close monitoring for insects and/or insect damage at seedling emergence is required.
- Earthmite and Lucerne Fleas are very active through spring and can decimate spring sown pastures. Crickets also need to be controlled in early summer if present.

When?

With adequate weed control and soil moisture retention, spring sowing has been successful as late as November in the Hamilton region. Optimum sowing time will vary according to season, soil type, area etc, but is typically between early August and early October in most years.

Sowing sub clover later than September is risky in most areas, but the risk varies greatly depending on the situation and variety. Generally the earlier clovers are sown, the more seed they set. Twelve weeks of growth for sub clovers usually allows enough viable seed to be set. If you are unsure about including clovers in a sowing mix please seek advice from the agronomy team at Vickery Bros.

FERTILISER FOR SUMMER CROPS

By Harry Armstrong

Soil tests should be taken prior to planting summer crops so that any nutrient deficiencies can be detected and rectified by applying appropriate fertilisers.

Summer cropping provides the opportunity to incorporate lime or gypsum if required.

A standard fertiliser recommendation for a summer crop is to apply 20kg/P/ha (actual rate would be determined from soil test results), and in most cases this level of P is adequate for the crop. Phosphorus is usually applied at or just prior to sowing, in the form of 100 kg of DAP or 230kg of Superphosphate. DAP is the most commonly applied product particularly for subsequent crops as nitrogen levels are often lower in the second crop.

Spring sown summer crops are often associated with pasture renovation; hence the paddocks selected are often of lower fertility and have poor clover content. For this reason many producers opt to apply capital rates of P (e.g. 200kg/DAP) during the summer crop phase. Where this has been done Vickery Bros agronomists have observed much less, and often no, insect damage in these well fertilised crops. This apparent tolerance to insect attack is likely due to the extra nitrogen, but the higher P rates could also be having an impact as summer crops rely on strong root growth to establish quickly, utilize available soil moisture, and yield well.

Poor yielding summer crops are seldom profitable, so check fertility levels with a soil test and then consider applying some capital fertiliser during the cropping phase. Also note that most crops respond well to nitrogen applied 3 weeks post sowing.

PASTURE UTILISATION ON DAIRY FARMS

By Bill Feely

As the cheapest feed available pasture forms the basis of the Victoria dairy industry. For this reason it is important to use as much pasture as possible before turning to other forms of feed. The amount of pasture grown on a hectare varies greatly depending on climactic factors and edaphic factors. It has been estimated that a hectare of dryland pasture in southern Victoria can produce between 5 and 14 tonnes of dry matter (DM) each year. In any district there are farms on which cows eat 100% more pasture over the year than others. Some farms turn 5 tonnes of pasture/ha into milk and others use up to 10 tonnes of pasture/ha. Basically this difference is a result of different management techniques.

How much pasture is used on dairy farms?

Pasture consumption can be estimated from the amount of butterfat (BF) produced annually. Over the whole season a cow needs to eat 25 kg of pasture for each kilogram of butterfat produced, (this includes a requirement for when the cows is dry). Dividing by the number of hectares off which the butterfat was produced will produce Consumption per Hectare figure.

For example a herd producing 20,000 kg BF/year would consume 500t DM/year.

20,000 kg BF (Butterfat) x 25 kg/ha DM/kg BF (Butterfat) =500,000 kg DM/year or 500t DM/year.

Divide this by the number of milking hectares

500t DM year / 70 ha = 7.1 tonnes DM/ha/year

Work out your consumption here.

Your annual BF production is x 25		kg Butterfat
= kg's dry matter consumed by your cows		kg DM
Divide by 1000 to convert To tonnes.		t DM
Divide by milking Hectares		
= This is tonnes of pasture consumed / ha		t DM/ha

The pasture consumed per hectare figure above gives an idea or an appreciation of how efficiently pasture is being used. To be more accurate we need to take into account and subtract bought in feeds such as grains, pellets, hay and other supplement plus factors such as agistment. These feeds go towards producing butterfat but are not grown on the farm. For the example herd to produce 20,000 kg butterfat it took pasture grown plus the following feed bought in. Bought in feeds do not include any supplements cut off the milking area.

For the example feed bought in included
80 tonne barley
Barley has say 15 % water in it. 80 tonne x 85% = 68 tonne dry matter
However barley has a higher feed value than pasture
68 tonne dry matter x 1.1 = 75 tonne dry matter.

180 round bales of hay
Each bale weighs 350 kg
180 x 350 kg/bale = 63000 kg
Convert to tonnes = 63 tonne
Hay has 15% water in it.
63 x 85% dry = 53.5 dry matter.

So there's an extra 109 tonne of dry matter bought in.
Divide this total by the number of milking hectares.

109 t DM / 70 = 1.5 tonne Dry Matter/ha

Subtract this from the Consumption figure
Pasture + Bought in feed less bought in feed gives a 5.5 t DM/ha/year pasture consumption figure.

NITROGEN IN CROPS

Grain and oilseeds prices are expected will be well supported due to a reduction in world supply, hence the need to focus on optimum yield and therefore profit.
Crops are approaching the correct growth stage (GS) to apply in crop nitrogen.

- Cereals at GS30-33 and canola at elongation/early flowering are the correct periods for application.
- If the decision to wait for more rain is made, the chance to apply at the correct GS may be missed, reducing the efficacy of the nitrogen applied and therefore a possible yield reduction.
- There are numerous factors in determining individual paddock and crop Nitrogen needs such as potential yield based on growing season rainfall and potential protein and paddock history.
- With some friendly advice, we will arrange the optimum Nitrogen application for the target yield.

Please call Jane on (M) 0437 752 707.

LUPIN CROPS

A Free survey of lupin crops between flowering and grain fill is being carried out by the Department of Primary Industries to search for the exotic disease Anthracnose. The DPI is encouraging all lupin growers across Victoria to participate as the disease has not yet been discovered in Victoria, but has been in WA and SA. To meet their obligations they need to inspect 20% of crops grown in Vic.
Please contact Steven Holden at the DPI on (B) 03 5573 0900.

AUSTRAL PARK LIME TRIAL

By Jane Wilkinson
Sales Agronomist

Introduction

For some time David Robertson of Austral Park, Coleraine has considered sowing Lucerne on farm for continual hard grazing. The pasture species being considered are Lucerne (cv Stamina) with companion species of Fescue (cv Resolute), Phalaris (cv Sirosa), Cocksfoot and Trikala and Leura sub clover. A mixed sward is to ensure the paddock is not out of production during the winter. Prior to sowing down the paddock, that seemed most appropriate for the sward, David required a soil test to determine the current soil conditions. The soil test results provided the basis for a nutrient plan which included 2.5 tonnes of lime/ha. The lime recommendation was to reduce available Aluminium to a non toxic level for Lucerne to achieve optimal growth and persistence.

As there is still some debate on the payback period with the application of lime, David asked me to set up a trial as a means of objectively assessing the financial value of different rates of lime on a small area on his property.

The paddock chosen had two distinct soil properties and plant growth habits. Due to this observation, the north side of the paddock was soil tested separately to the south side. Both 0-10cm and 10-60cm depths were sampled and analysed.

Previous trials at Nareen and Branxholme, Quigley, Schroder & Cameron (2001) found similar Cation Exchange Capacity (CEC) and Aluminium values to those at David's Property (Table 1). However the soil types, according to Schroder, were very different between those trial sites and Austral Park. This increased our curiosity as to whether this trial would return similar conclusions.

Table 1. Soil types from Nareen and Branxholme trial compared with Austral Park

Soil Test Results	Nareen	Banxholme	Austral Park		General Recommended Soil levels
			North	South	
A1 % 0-10cm	89 mg/kg	32 mg/kg	11% Cation Exchange Capacity (CEC). Approx 40mg/kg.	18% CEC. Approx 86mg/kg.	<5% or <30mg/kg
pH CaCl	4.4	4.3	4.4@0-10 5.8@10-60	4.4@0-10 5.6@10-60	4.8-7.5 for most agricultural plants
Olsen P	>12	>12	14	11	15-20

The findings of Quigley et.al.(2001) as an average over all trial areas was no significant difference in:

- Dry matter (DM) digestibility & Crude Protein (CP) (small and inconsistent).
- Annual DM production for the two years.

But then they did find for two of the years:

- Higher stocking rate.
- Significantly higher wool production @ approx 15kg/ha/yr increase.

David would like the outcome of the trial to be a visual response, this should be more than 15% extra DM growth.

This would be fantastic, but even smaller responses can be economic, hence a measured approach.

Materials and Method

David would like the outcome of the trial to be visual response, this should be more than 15% extra DM growth. This would be fantastic, but even smaller responses can be economic, hence a measured approach.

All test strips across the paddock are 30m widths, with seven test strips in total.

- A trace element recommendation on the south side that includes a dolomite and lime application.
- 4 lime test strips across the paddock running north to south. 2 x 2.5t/ha & 2 x 5t/ha lime.
- 2 test strips of 50kg/ha K (MOP @ 100kg/ha) running east to west on the two different soil types.

The trial strips are in situ for the visual response, but as the trial strips will be too difficult to measure, a small trial area is set up on each soil type.

The plots measure 2x7m and are replicated 4 times in a randomised design. As both soil types are potassium deficient, a base application of 100kg/ha MOP was applied to all plots including control. The treatments are as follows:

- Control
- Lime at 5t/ha
- Lime at 2.5t/ha
- Lime at 1t/ha
- Trace Element Blend plus 2t/ha lime and 500kg/ha Dolomite.

We intend to determine response to lime and the trace element blend by counting plant numbers at emergence, establishment and persistence at approximately six monthly intervals of the sown species. DM measurements will be calculated with rising plate measures at intervals yet to be determined, calibrated with DM cuts.

References

- Quigley PE, Schroder PM & Cameron.FJ (2001) - *Impacts of surface applied lime on sheep production systems in South-western Victoria*. Proceedings 10th Australian Agronomy Conference, Hobart. (In press).

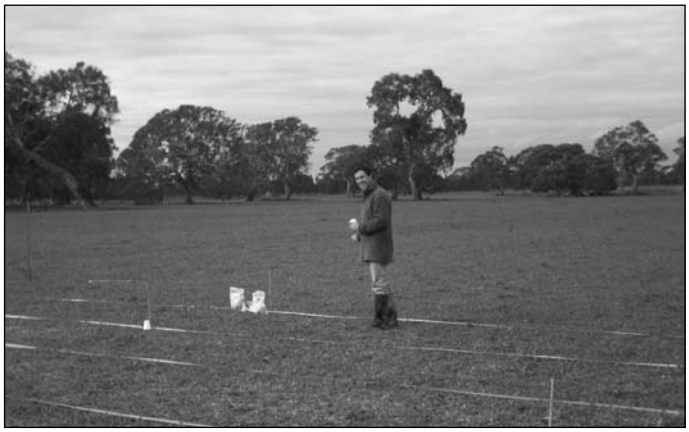
Further Reading

- Guangdi, L & Conyers, M (2006) *Pasture response to lime*. wagga wagga,
  - Significant change in botanical composition in 3-4 yrs, reducing silver grass.
  - 25% Increase in perennial pasture yield.
  - 16% Increase in annual pasture yield.

- Guangdi, L & Conyers, M (2006) *MASTER - Sheep responses to limed pastures.*
  - 25% increase in stocking rate therefore 28% increase in live weight /ha (53kg/ha/yr) and 24% increase in greasy wool (11.5kg/ha/yr) with merino wethers in a rotational grazing system.

- Guangdi, L & Conyers, M (2006) *MASTER - Crops response to lime*. (Wagga Wagga).
  - Crop responses in first year of liming, Wheat yields increased by 100% in the acid tolerant variety Dollarbird and Diamondbird, canola yields more than doubled, 47% increase in triticale yield.

- Slattery,B & Scott, B (2001) *The time to lime is now*. (Rutherglen)
  - keep above 4.3 pHCaCl to prevent clay loss. On soils 4.0 pHCaCl, clay reduced by 5-7% and is irreversible.
  - 'yield from acid tolerant wheat cultivars grown on un-limed soils was 38% lower than from the same crop grown on soil that had received 2.5t/ha of lime 12yr previously'
  - Also mention follow-up applications gave 50-70% increase from initial application. (2.5t/ha both initial and follow-up).



ALTERNATIVE FERTILISERS - TRIALS RESULTS AFTER 2 YEARS

By Bruce Lewis
Agronomist

Continually presented by varying options for supplying pasture nutrient needs Vickery Bros are keen to explore these options to quantify their potential benefits. Vickery Bros have been running two fertiliser trials in SA testing alternative and conventional fertilisers for the past two years. The trials have been established to assess pasture growth (drymatter) and pasture quality utilising feed testing for digestibility, ME, protein and soluble carbohydrate. Tissue analysis has also been utilised to compare nutrient uptake. Feed test data has also been used to run some simulations on animal performance for some of the treatments.

There is a genuine interest from many farmers to use alternative fertilisers that claim to offer soil and animal health benefits. There is also increasing interest in organic produce which requires changes in fertiliser and chemical inputs on farms. There are often alternative fertiliser products promoted for above reasons which offer a broad list of claims for improving soil health and nutrient efficiency. This trial is testing 3 different alternative products (chook manure compost added in the second year) with conventional fertilisers.

Trial Design

The trial layout is a replicated block design with 4 replicates. Treatments are listed below for the bull beef trial;

Treatment No	Description	Rate kg/ha	g/plot	Nutrients N	Kg/ha P	S
1	Control	0		0	0	0
2	Alternate 1/2	400	600	?	?	?
3	Alternate Full	800	1200	?	?	?
4	Bio Super	200	300	3	20	17
5	Conventional 1/2	113	170	23	10	10.5
6	Conventional Full	225	338	46	20	21
7	Conventional No N	227	341	0	20	25
8	Chook Compost	500	750			

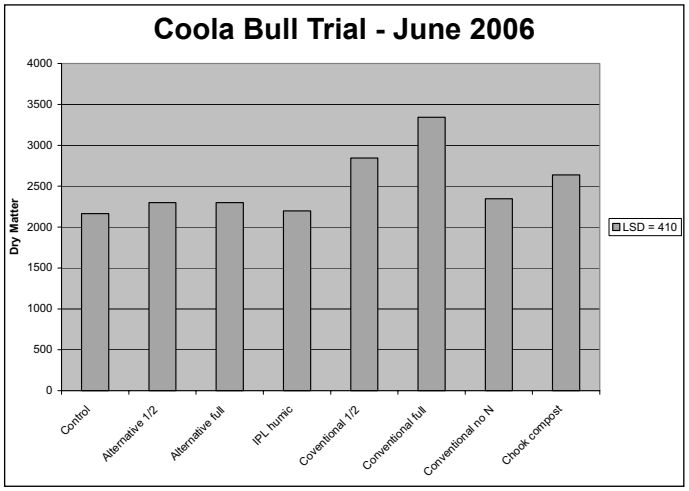
Results

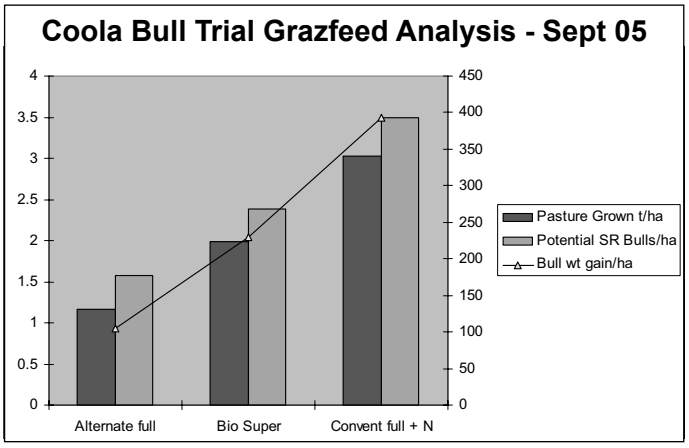
In the second year of the trial, results are beginning to allow some conclusions to be drawn.

- Not all alternative fertilisers perform the same. Some products have given effective pasture responses however performance of some products do not align with marketing claims made.
- The trial with cell grazing has developed a more dominant perennial grass base and is more responsive to nitrogen fertiliser.
- Conventional fertilisers produced the highest drymatter with the lowest cost.
- Measured pasture quality improvements were minimal however there were detectable improvements in digestibility, soluble carbohydrate, and protein levels which aligned with the fertilisers producing the best pasture response (conventional fertilisers).
- Incitec Pivot has developed an alternative soft rock phosphorus product (Bio super) that has given effective phosphorus responses in the first year.
- When lower pasture growth is combined with lower pasture quality the potential differences in animal production per ha can be dramatic (over 2 times higher levels of production).
- Composted fowl manure applied in the second year has given effective pasture responses.
- Nutrient uptake of phosphorus and nitrogen by plants in the first year was highest where conventional fertilisers were used.

Conclusion

Farmers need to be analytical when deciding to use alternative fertiliser products. Not all products perform as claimed. Products which don't perform can have dramatic effects on animal production which flows through to financial returns. Premiums for organic type produce need to be established to help cover the higher cost of production likely with alternative fertilisers.





Contact the professional team at Vickery Bros.
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Agronomy Team

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