

# Southern Soils FERTILISER

*A BALANCED APPROACH*



## Winter 2019 Newsletter

### THE YEAR SO FAR – KEEPING IT IN PERSPECTIVE

Peter Ham

After a tougher than normal 6 months, resulting from a dry spring and a very dry autumn for most, we now find ourselves just around the corner from spring and potentially a very rewarding next 6 months.

While most haysheds are empty, feed bills have been high and feeding stock unrelenting, lamb prices continue to go from strength to strength, wool is still returning well and cattle prices are strengthening, agriculture remains a rewarding and exciting industry to be in.

As with every year, those that have planned ahead and stuck to their guns, capitalized on opportunities and reacted quickly to the conditions are now in a very strong position ready to capitalize on the buoyant agriculture marketplace we find ourselves in.

Some of the strategies our clients have used to get them through this tougher than normal 6 months, include;

- Containment fed their livestock, either in a specific containment area or sacrifice paddocks.
- Prioritized their livestock classes as early as possible and sold off unproductive animals as early as possible.
- Stuck with their perennial pasture sowing plan year in year out and made sure it's done right
- Over-sowed targeted pastures early
- Applied robust soil fertility programs based on soil testing, paddock history and economics
- Assessed their feed base straight after the rain and applied stimulants accordingly to increase pasture growth rates
- Kept things in perspective and realized that returns are good and money spent wisely is delivering a good return.

The lesson that I am continually reminded of is that agriculture doesn't stop based on a calendar date, and that one year rolls into another very quickly. None of us farm in one year increments, what we do this year can and normally does affect us for years to come. And having said that what we did last year, the year before that and every year previous to that affects us now and into the future as well.

It is at the changing of the seasons that the biggest differences can be noticed between well managed properties that have a history of sound fertilizer application, pasture improvement and good grazing and livestock management. These places respond quickly to autumn rains and perform much better in trying seasons and winter conditions. They also hold on far better at the other end of the season when moisture becomes limiting heading into the spring.

It is easy to get bogged down in the day to day and lose sight of the bigger picture, it is worth remembering that summers are supposed to be hot, dry and not grow any feed, by the same token winter is generally cold, wet and also not growing much feed. Those that adapt, plan and react quickly continually turn tough years into good years and good years into great years.

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### LIME? WHY WE SHOULD BE DISCUSSING IT NOW.

Daniel Hill

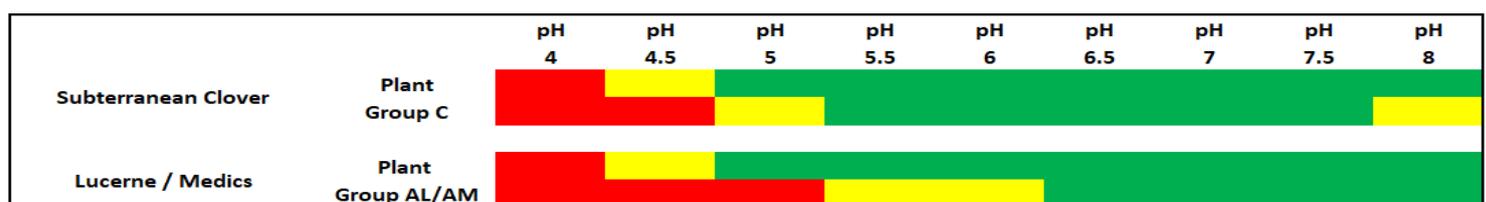
We all know that legumes are an important component of pasture productivity in most sheep and beef grazing systems. Not only from the perspective of producing high quality feed for the livestock consuming it, but also the association that legumes have with Rhizobia, and the ability of that rhizobia to fix atmospheric nitrogen. It is this fixed nitrogen that helps drive the productivity of the other pasture components, like ryegrass, phalaris, cocksfoot, cereals etc.

Atmospheric nitrogen fixed in the previous spring and stored in the soil, helps drive autumn pasture growth following the break. Whilst the timing of the break and the cooler soil temperatures had an influence on early autumn growth this year, the number of paddocks that appeared to be lacking nitrogen, that have historically had good levels of clover present, was significant. So, this begs the question 'Are our clovers underperforming? Or is the symbiotic relationship with rhizobia that is not as effective as we think?'

The main requirements of a legume species are space, light, soil moisture, adequate soil fertility and effective symbiosis with rhizobium. Whilst year to year seasonal conditions affect space, light and soil moisture, as producers we can positively or negatively impact soil fertility levels and the conditions that allow an effective symbiotic relationship with rhizobia.

It is well documented that when soil pH levels fall below the desirable range, for any given plant species, there is an impact on nutrient availability (macro and micro), elevated levels of aluminium and manganese restricting potential rooting depth and function, a reduction in the availability of most soluble fertilisers that are applied and the survival and function of rhizobia is compromised.

At the recent Grasslands Society conference, Dr Belinda Hackney\* presented some very interesting data, that shows legumes tend to be less sensitive to soil acidity than the rhizobia that form symbiotic relationships with them. For example, subterranean clover will perform adequately at a soil pH (CaCl<sub>2</sub>) as low as 4.8, whereas the associated rhizobia group requires a pH (CaCl<sub>2</sub>) of 5.5 or higher to survive and to fix atmospheric nitrogen. The rhizobia groups associated with medics and Lucerne require an even high pH level.



Coupling this information with what Lisa Miller\*\* from Southern Farming Systems presented about pH stratification, and the fact that our traditional liming practices may only be affecting the 0-10cm depth, and in some soils, 0-5cm depth, we can now start to get an idea as to why the legumes in our pastures and cropping systems, may not be fixing the quantity of nitrogen that we expect them to.

So, this brings me to the point of why we should be starting the discussion about lime at this time of year. If we find the soil test results highlight a need for lime (or dolomite) and this need increases with depth, as discussed above, there is an opportunity to apply capital applications of lime prior to planting a summer crop, which can be incorporated through the cultivation/seedbed preparation process. This not only speeds up the process of the lime improving both calcium and pH levels further down the soil profile, as we are not reliant on water movement to push the lime deeper into the plants rooting zone, but it also allows us to potentially apply a higher rate of lime in one application, as it will be incorporated to depth, and not surface applied.

The first step in this process needs to be soil testing, and potentially plant testing, to better understand what is limiting the performance of your legume components, and consequently the overall performance of your pasture.

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### SUMMER CROP PLANNING

Peter Ham

As with most things in life planning your summer crop well in advance is crucial in determining whether or not it will be a success or a fail. With springs becoming more variable the temptation is always to rush a crop in chasing 'the last rain', rather than adequately preparing a good seed bed, addressing fertility requirements and ensuring weed control. In my time I have seen many underperforming crops as a result of direct drilling into country that needs working, wet country rushed and bogged in, poor spray jobs leading to weed competition, poor fertility and incorrect sowing rates.

First and foremost, a summer crop program is primarily targeted as the starting point to a successful pasture renovation, normally with the end goal of establishing a successful perennial pasture.

We should focus more on weed control, grazing and fertility management and 'topping up' paddocks (over-sowing) on a regular basis rather than allowing them to get completely run down and requiring a full renovation and summer crop. That said when starting with an underperforming weed filled paddock a spring sown fodder crop or 'green feed' crop is ideal on a number of levels.

Spring time is a great time to control early flowering annual weeds, such as barley grass, silver grass and winter grass. Spray as early as possible coming out of winter before flowering and seed set occurs. This also allows time for root release and drastically improves the seed bed whether direct drilling or cultivating. Spraying out early also retains more moisture for the summer crop.

Pasture renovations in the spring time place far less pressure on our feed supply than autumn renovations. In our environment, on average approximately two thirds of our annual pasture growth occur over the 3 month spring period.

Summer Crops extend our pasture growth curve further into the summer period levelling out our feed supply and growth curve. Depending on varieties sown we often see good regrowth in the early autumn if we receive moisture. Soil preparation and weed control in the spring period allows us to resow the paddock in a timely fashion in early autumn and build a feed wedge going into winter.



Pick paddocks early and have a plan in mind of what you want to achieve. Have them well grazed before spraying and spray as early as possible, though sometimes this means running the risk of leaving some tracks and a bit of mud. Where necessary a second knockdown may be beneficial before sowing as we rarely get 100% control on the first pass, particularly when applied early. Many a good crop has been severely impacted by competition and while initially it may appear that a bit of ryegrass growing back is beneficial it will severely retard the development of the crop and its longer-term performance.

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## SUMMER CROP PLANNING continued..

Peter Ham

In many cases cultivation will be of benefit, but this depends on soil type and previous history. Again, the temptation here is to rush it in, but where crops are 'bogged in' they rarely perform, waiting a few extra days for better soil conditions results in a far better seed bed.



As with any pasture or crop establishment soil fertility is key to success. Soil test well in advance, then if the paddock needs an amendment such as lime or dolomite, it is the perfect time to apply and cultivate in. Many paddocks require capital applications of nutrients and ahead of the summer crop will benefit not only the summer crop but further plantings going forward.

Variety selection depends on a few things and it is important to establish the end goal before selecting. Options include Forage Rapes, Turnips, Tillage Radish, Chicory, Plantain, Millet, Sorghum and Maize to name a few. The determining factors in choosing varieties include livestock class to be grazed, time of sowing (some C4 grasses such as sorghum require higher soil temperature), time to first grazing, climate, likely insect pressure and plan for the paddock the following autumn.

In a lot of cases a variety of species works really well. It gives the grazing animal some choice and a more balanced diet as well as allowing it a transition period onto the brassicas in the mix. A variety of species also has a risk mitigation factor with different species thriving in different conditions and being more or less insect tolerant, particularly towards diamond back moth.

A mix of species also has soil health benefits with different species playing different rolls in the mix. It encourages biological diversity and a mix of rooting depth and fertility requirements within the crop.

To discuss your summer crop planning contact Peter Ham on 0429 448 653 or Daniel Hill on 0409 858 346.

# SHEEPVENTION

4<sup>th</sup> / 5<sup>th</sup> / 6<sup>th</sup> August 2019

Find us at Site 290 with Vickery Bros

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### SOIL & PLANT TESTING

Daniel Hill

As we have moved past the winter equinox and the days are getting longer, we should be starting to think about strategies that maximize spring pasture production, and any potential summer cropping options. It is also a time where we can start to evaluate how effective the Autumn plans have worked. Whether it be planning the next steps or evaluating previous activities, the collection and analysis of both soil and plant samples can be great tools. Some of the reasons we encourage sampling this time of year are as follows;



1) Spring is when we are likely to see the most accurate and informative data come through, as it is a time when plants are actively growing, microbial activity is high and we normally have soil moisture and nutrient availability is at its highest.

2) When we collect samples this time of year, we have time to adjust our plans/applications, to correct any deficiencies/imbbalances.

3) Spring is also a great time of year for a farm tour to discuss what has worked over the past year and what we can do to improve, and start planning for the new year.

If you would like either Peter or Dan to talk to you about soil and plant testing this Spring, please feel free to contact one of our team to arrange an appropriate time, or catch up with us at Sheepvention at site 290.

References: Lime? Why we should be discussing it now -

\* Dr Belinda Hackney – 'Underperforming Legumes?' Grasslands Society Conference, Creswick, 2019

\*\* Lisa Miller – 'Lime movement through the soil profile' Grasslands Society Conference, Creswick, 2019

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