

Attempting to get the right balance

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"Maneroo", Moree NSW 2400

Abstract. "Maneroo" is a 2220 ha mixed farming property located south-east of Moree. Pastures have an integral role on the property. Experiences with both new and old pasture species, fertilisers, native pastures, and the effects of state legislation on rotations are described, along with plans for the future.

"Maneroo" is a mixed farming property situated 38 km south-east of Moree in what is normally considered as a safe rainfall district. It has an area of some 2220 ha, all of which, except about 400 hectares has, at some stage, been cultivated. Generally, at any one time, about 220-270 ha is under some form of cash crop. The remainder runs livestock, consisting of Corriedale sheep for prime lambs and wool, and a breeding herd of Hereford cattle. We rely on storing our own drought reserves and feeding in dry times. Soil types are from flooded, rich chocolate loams through to the predominate self mulching brigalow grey soils and about 200 ha of very heavy black soil. There is about 120 ha of a lighter sandy ridge that has been left in its natural heavily timbered, very diverse state. Average rainfall is about 600 mm. The property was first purchased by my father as 3 separate blocks in 1927. The first cash crop was grown in 1932. The primary reason to move into cropping was to get rid of the almost monoculture of wiregrass on the creek country and replace it with lucerne. The first lucerne was established in 1933 or 1934. This was the beginning of rotational farming and improved pasture at "Maneroo".

Ten years ago I addressed this same conference in Tamworth on my pastures and how I manage them. At that time I thought I was well along the way to getting it right. Now 10 years later I feel that, although I have made some progress, there is still a lot more to be made. The last 10 years have been more ones of consolidation rather than progress. Some of the seasons have not been all that conducive to trying new varieties or techniques, but have provided experience with what we have.

The drought we have just been through, although not as severe in my area as in some others, most

certainly showed up some strengths and weaknesses of the various types of pasture. As the drought tightened its grip, the introduced grasses such as Bambatsi panic and purple pigeon grass totally closed down. The lucerne, on the other hand, was the last to shut down. Meanwhile, the native grassland provided dry feed well after the others had been destocked. The dry feed may have had little value in itself, but at least it provided some bulk which could be supplemented. This eventually cut out, but well after the others. When the drought did break in this area with substantial rains, the native grasses were the first to be able to be stocked. The exotics were not far behind them, and when they did take-off provided more bulk in a shorter time. Some lucerne stands totally died out. Those that did not were the first to provide a high quality feed source. This experience re-enforced the message that it is the mixture of species that gives the most sustainable grazing rather than any one single species.

I feel that in the past we have been concentrating too much on some of the exotic grasses, while not putting enough effort into maximising the potential of the native species. To a large extent this has been because of the simple reason that, in a rotation scene it has, to-date, proved to be very hard to establish a native grass pasture. Unfortunately, this still remains the case.

The method I had been using to try and establish native grasses was to plant an exotic grass into crop country and to let it revert back to native grass. By doing this, the vigorous and competitive nature of the exotics, in the early years, keeps on top of the weeds and then, as the exotics thin out the native species gradually replace them. I have used the same process in lucerne stands as well. These stands revert

to native pastures in a shorter time, but have the drawback of needing cleaner country to start as the lucerne is not as competitive with the weeds.

I have had to rethink the strategy of re-establishing native grasses in long-term rotations. The type of country I am dealing with is prime farming country. State legislation has made me very wary of re-establishing a stand of grassland that fits into the definition of native vegetation. First, we were stuck with the '10 year rule' which saw me digging up very good stands of re-established grassland to keep the option to cash crop farm these paddocks open. We are now in the process of converting over to the new 'Native Vegetation Conservation Act'. Even with this new Act where so much can be altered by regulation and knowing the fickleness of Government, I would be very wary of having a re-established pasture on good country that fits under the definition of 'Native Vegetation'. It does not warrant the risk of tying up future options for that country.

With the above points in mind, I have, over the last few years, changed direction slightly with regard to pasture. The pasture phase tends to be shorter and the cropping phase more intense.

We have put more emphasis on improving the quality of the true native grassland, this being the grassland that has never been farmed. Undoubtedly, one of the best investments I have made in this regard is a large mulching slasher. This means we can cover a lot of ground in a short time instead of just picking away at the edges. By appropriate slashing at the right time we have changed the composition of some of the native grass paddocks. These paddocks were predominately wiregrass and not much else. This was the result of grazing practices of probably 100 years ago when the country, especially nearer the water was continuously flogged. By slashing the grass at the appropriate time, just as the seeds are forming we have thinned this grass right out and let the softer annuals and perennials re-establish. It is amazing how they will come back given the opportunity. This has turned country of dubious grazing value that may otherwise have been destined for the plough, regulations allowing, into highly productive pasture.

Another change of direction we have taken in regard to pasture management is the use of fertiliser. I had never used fertiliser here until 5 years ago. A stand of Bambatsi panic on some very heavy black country was short of a legume. I had been told that this country had never had naturalised medic in it or

anything else much in the way of herbage. However, I thought I would try and get some snail medic into this stand. To do this I mixed it with some SF45 and put it on with a spreader at 100 kg/ha. The results were startling. Not so much in the first year but in the following ones. Not only was there a good strike of snail medic but an abundance of herbs and forbs that I never knew existed appeared. This has turned the paddock from a store paddock to one with the ability to fatten. It has also given the grass a new life. On that experience alone I have now decided to use SF45 (SF45 is a high sulfur content superphosphate) on a regular basis on the grass country and invested in a decent spreader for that purpose.

When it comes to exotic grasses we still have not moved from the 2 mainstays of purple pigeon grass and Bambatsi panic. In any trials we have had on the property, they have always been the more dominant ones. There is no doubt that the buffel grasses will grow and grow well, but stock seem very reluctant to eat them and the area I have put in has now been ploughed out. I have found Bambatsi and purple pigeon easy to establish and competitive against weeds. However, they are both fairly solid users of nitrogen (N) and need a good legume with them. That has been our main downfall - getting the legume established. Trying to mix them with lucerne has been a total failure. The best mix to date has been snail medic which seems to persist.

Lucerne is still the number one legume as far as this property is concerned. There are others on the horizon not commercially available yet. The mixture of lucerne and snail medic seems to have stood the test of time. Unfortunately, snail medic has been virtually unprocurable in the last couple of seasons so has been dropped out. When it comes to which variety of lucerne to sow I am left pondering. I was a great believer in Aurora over the years, but then there was a profusion of other varieties on the market all with various claims and attributes. I have tried most of these and been impressed by some, but after the last few sort out years of hard times and losing stands, I am really starting to wonder if some of these other varieties are all that much superior. Considering the fact that Aurora is usually readily available, and being an open variety without a PBR, usually much cheaper, I am tending to think along the lines of going back to using it again. One of the reasons that I discarded it in the first place was that it seemed to fade out very quickly after year 6, but there does not seem to be any variety that has done much better. Some of

the winter active ones most certainly have a longer growing season but are inclined to fade out even quicker. In our scenario, where we are mixing the lucerne with medics, growing longer into the autumn can be a disadvantage as it competes too much against the germinating medic. The one drawback that lucerne does have is that, although it does a fantastic job of opening up country and putting N back in the soil, it has very little residual organic matter. It is for this reason I am inclined to let some grass creep back into it before recycling back to farming. It has one other disadvantage when moving back into a cropping phase. That is it really does dry the profile out to quite a depth. Where salinity is a problem this may be no bad thing.

Rosedale subterranean clover has shown up in trials on the property as maybe being fast enough maturing to set seed before the hot weather beats it and I am about to experiment with spreading it in a Bambatsi stand. Subterranean clovers in general have potential but the ones I have tried have always ended up as a one year wonder because they get caught by the heat before setting seed. In legume trials being run on "Maneroo" by NSW Agriculture and the GRDC, one species, to me, has shown great potential. This is a species called sulla. On the strength of the trial I put in a commercial stand last autumn. The seed came from New Zealand and was expensive. We managed to get a reasonable strike, but after a drought year we also had a good strike of thistles. A spraying disaster wiped out just about everything. A few plants survived and set seed, and it was interesting to see that those seeds germinated in the paddock without being re-incorporated. This may be a variety suitable for spreading in the future if seed is able to be harvested. There is a problem with the seed being in a very hard pod which takes special dehulling. My thoughts would

be to spread the seed, hull and all, with a spreader. I gather sulla is not a plant that will stand abuse, in that if it is grazed to the ground it will not recover. It is only a short term perennial (2-3 years), but has a massive amount of growth and I feel is worth persisting with. I have once again managed to obtain seed for a commercial stand of 45 ha and, at the time of writing, this was planted, but not out of the ground.

Where do I see the future? I would think as far as mixtures go we will persist with a mixture of native grass, exotic grass and lucerne. I see the biggest room for improvement in the legume part of the mix. Either better varieties of lucerne or some other legumes. We really need a winter legume. Snail medic has, to some extent filled that space, but I feel there are better things on the horizon. I cannot see anything replacing lucerne as the predominant summer legume. Bloat is still the major drawback, but we have found that by being religious with the 5 in 1 vaccine and by avoiding stocking lucerne in that first spring flush we have minimised the losses.

I see us as always being rotational farmers. Any shortfalls of income in the stocking phase, if there are any are more than compensated for in the farming phase. We have, to date been disease free. This especially applies to crown rot. Our soil has stayed stable and there has been no increase in salinity or sodicity. Although not of a concern in our area to date levels are starting to move up in some continuous cropping areas close by, whilst ours are very low and static.

It is an expensive system requiring infrastructure for stock such as fences, yards, and water, but it is a system I feel is sustainable over the longer term.