

PROFITABLE PRODUCTION FROM NATIVE PASTURES  
ON THE NORTHERN TABLELANDS.

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Background

My approach to our particular type of primary production has been naturally influenced by the area in which we have operated and the things we like doing best - livestock production.

We attempt to work as much as possible within the constraints imposed by nature with as little high cost manipulation of the environment as possible. Nothing demonstrates the futility of working against nature more than in a dry climate.

The New England climate fits very well into the requirements of fibre production, with meat providing a good sideline over a large area and being the main product in the more favoured areas.

Our soils are of low fertility and surprisingly we experience extremes of moisture and temperature. On average we have 60% rain in the summer and 40% in winter. Precipitation exceeds evaporation during the winter months and we can have exceedingly high summer evaporation rates, which can outstrip the precipitation for short periods. Also west of the Divide, springs are reliable with a large proportion of dry autumns with the reverse being the case east of the Divide. At the property at Walcha Road there is a build-up of moisture in the winter and when temperatures rise in the spring, growth has to take place. This growth becomes uncontrollable unless stock are introduced early in the growing period. Then in the autumn the chances of a dry one are about 50-50 which can limit the production for up to 5 months.

The forces of nature are extremely powerful, and in the New England as elsewhere a large number of grasses have evolved which will stand the severe local conditions. These can produce with good management.

Natural pastures

A natural pasture is what evolves over a period of time as a result of the application of fertilizer and clover from the air or spreader, on a native sward. Such a pasture is one consisting of native species and others introduced by stock and is arranged by nature to grow in the areas most suited for each species.

Contrary to evidence accepted when pasture improvement first became popular natural pastures respond well to increased

fertility and stocking rates. They can be manipulated to change the species composition of the sward to spread the increased production more evenly over the year.

Without doubt they can provide the base for a very profitable enterprise. Because of their ability to stand dry conditions, they provide a very stable resource though less spectacular visually.

Winter feed is very expensive to produce. Fibre producing animals can produce well on a "stop-go" type nutrition, so by encouraging the all-season green perennials to help fill the winter trough and manipulation of winter - summer stock numbers there is no need to produce expensive winter feed such as oats, etc.

We initially looked to exotic pastures. The drought of 1965-66 showed us that this was not appropriate and we needed to reassess our thinking. A lot of improved pastures had reverted to natural pasture and needed replanting. This suggests that conditions suited the natives better. Importantly, a natural pasture recovers after a drought without having to do anything much to help it.

One of the main reasons that native pastures in the New England are low producers is because of our inability to control the spring-summer growth. By autumn there is a dense sward of hayed-off summer feed which becomes useless after a series of frosts and virtually chokes out the all-season green perennials which produce better when summer feed is kept short. They are the grasses that will easily carry 5 dse/ha through the winter. Couple this with the lack of expectation that natives can produce and it is easy to see why a lot of native pasture is never fertilized and carries about 2.5 dse/ha in a sort of fashion.

Natural pastures need a different outlook to exotic pastures. The production from an exotic pasture is higher than from a natural pasture in good times, but in times of moisture stress, falls off badly and if poor conditions persist too long the whole pasture may need resowing. The need for resowing could come after the next drought when there is no longer any cash in the system and the cost too high to contemplate. An interesting thought! I'll do my crystal-ball gazing at this stage and say that I believe that the system I am describing could be continued forever without degrading the land and that if it becomes uneconomic with it's low inputs and good outputs, heaven help some of the more intensive shows. The Australian environment cannot sustain the very intensive approach except for short periods.

The intensive systems cost a lot to set up and operate and need good margins to survive. Currency shifts, droughts, interest rates etc. can be devastating.

In short, by using a natural pasture we are trading off some of the maximum production that can be expected from an exotic pasture for more sustainable optimum production.

### Management systems

Now the first thing necessary is fertilizer + clover. This makes the grass palatable so that high numbers of stock will eat it and reduce the height of the pasture so that the *Danthonias* (wallaby grasses) can see the light, respond to the higher fertility and fill in the winter feed trough.

Sub-division is immediately brought to mind with the mention of high stock numbers to control pasture growth. Fencing is expensive, but often a couple of more dogs and a bigger receiving yard will suffice.

### Sheep camp effects

There is a spin-off from running big mobs that is very hard to put a price on. The bigger the mob the bigger the camp. Camps can contribute a great deal of low cost green feed during the winter as well as the summer. The camps comprise barley grass in the winter and couch in the summer. Both weeds you may say but don't forget a lot of so called weeds are only weeds in the eye of the beholder. Out of a total 810 ha we had 81 ha (approx) of camps which we haven't fertilized since 1969, a considerable cost saving.

The seed problem is a concern and when fertility rises to the extent that the whole paddock becomes infested, I don't know what you do, but we had the situation where it is confined to camps which in one paddock was 28 ha out of 160. This paddock was managed in the following manner:

1300-1400 wethers were carried from January shearing through until spring started. Half as many again were added until shearing, and then reduced to 1300-1400 head to give time before cold weather for some growth. The average production of wool from this paddock over a four year period was 55 kg/ha and during the 20 years at Walcha Road, we never sold a line of fleece wool that wasn't free or nearly seed-free. You cannot stop barley grass seeding but you can make it seed short, so that it is less of a problem.

The cattle then go into the paddocks left vacant by the sheep where they do better on their own. They keep the valleys cleaned out and tend to transport the accumulated fertility from them out onto the ridges for sheep to cart back up the top. Also any sheep tracks heal up if grazing cattle. This process must slow the rate at which fertilizer is lost down the gullies as well.

## Stock type

All this requires the fitting of the enterprise into the natural cycle of nature, so to speak. Sheep numbers need to rise by a substantial percentage in the early spring and decrease according to seasonal prospects. Cattle need to do the same. It therefore becomes very important that the right type of stock are used keeping in mind what you want to do. If breeding vealers are a good bet because they go off in the autumn, to make room for winter and in the case of sheep, they need to be "good doers" that can perform on a production/hectare basis and not on a per head basis with the surplus sold off-shears after a high proportion of their production has been harvested as wool to minimise the vagaries of the meat market.

Our sheep are a medium Peppin type selected under high stocking rate pressures and against fly strike. I like them plain and with a long staple of bright soft handling wool so that when things get tough, and that is always a possibility, they will not just go short and tight. Lambing in August provides the extra numbers to take care of the feed as it came away and apart from the meat market which I have already mentioned, the January shearing reduces the fly strike problem in the autumn and allows the sheep to spread out to the tall growth paddocks again.

We have learnt a bit about goats over the last few years and find they can play a very important part in improving pasture utilization, controlling weeds, improving cash flow and raising income.

## Control clover content.

One of the keys to managing a natural pasture is the management of the clover component. If the clover is allowed to become dominant the vulnerability to drought and dry hard winters is greatly increased and the hard-won profits from the good seasons are spent surviving the bad ones.

We need clover more to produce nitrogen for the grass which in turn will grow better and supply better amounts of protein than before, rather than to produce feed in itself.

At Walcha Road, being lower than a lot of the New England, it is hotter and dryer than up on top. so that perhaps this has helped us to keep the white clover at bay. However, before I knew as much as I know now, it did get away on one occasion. The magnificence of clover is something to behold, until we had a week of hot westerly winds - it disintegrated into dust before our eyes and blew away. The perfect formula for an instant drought! It took 3 years without super. to heal the bare ground up with grass again. Sub. clover is a better bet as it leaves a nutritious residue to fill in the dry autumns with burr and this is often needed.

I repeat, managing the clover is one of the keys to success, but fortunately it is quite simple.

Firstly, we look at the pasture growth and ask what kind of a year has it been? Water is often the limiting factor so the quantity of rain and the way it fell and when it fell are all important, as well as the following weather. All these things combine to influence the resulting growth - 125 mm in a deluge followed by a hot westerly is quite a different kettle of fish to a nice gentle 50 mm over a couple of days, followed by some mild easterly weather.

What is the composition of the pasture? How much clover is there - too much, not enough, considering the season? How much of the pasture is soft fertility-loving annuals that will leave large bare areas at the end of their growth or after a hot dry spell? They indicate that fertility isn't too bad anyway. How numerous are the thistles? - they don't grow on low fertility. Enough fertility is enough though, and too much is wasted unless used by animals.

How have the animals done, not forgetting prolonged wet, dry or cold weather? Fibre diameter of the wool can also be an indicator of nutrition but needs to be taken in comparison with the general district trend for that year.

I prefer the above gut feeling assessment to soil tests which cannot tell me how vulnerable we are to dry weather. Soil tests have a long way to go in my opinion. The anomalies that abound in our area would turn a lot of people off them for life.

#### Stocking rate.

The next key to success is stocking rate and its timing. This is most important. Manipulating pasture with stock (instead of machinery) and while they make you money at the same time is an attractive proposition to me.

The species we are trying to control are the summer growing perennials such as *Bothriochloa* (red grass) and the ones we wish to encourage are the winter green ones, such as the *Danthonias* (wallaby grasses) and *Microlaena* (weeping grass). We put about 50% more sheep on the pasture as the spring growth comes away. Do not wait until it has already got going too well or it will still get out of control.

A short pasture results. Because the stock go in when the pasture is short they tend to graze the whole paddock and the pressure of numbers tends to ensure that the whole paddock continues to be grazed instead of one part of it.

The shorter pasture encourages the growth of *Danthonia* and *Microlaena* and the winter trough will begin to be easier to handle each winter from then on, until winter carrying of 6

dse/ha or better is possible.

Species will fit in according to the conditions they like best - *Microlaena* (weeping grass) in the sheltered areas and more fertile spots, *Bothriochloa* on the hot hillsides and *Danthonia* in most areas.

Super. and stock will combine to increase carrying capacity and it requires some thought as to how many should be run. We take the extra numbers off in preparation for the winter about February, and use the following logic in deciding how many: The season is the main decider and if it shows every sign of being O.K. we look at the wool we got from the wethers. If it was over 5.5 kg we leave more on and sell less than if it had been lighter, taking into account what type of season it had been for production. The 7.5 kg per wether tells me we haven't got enough stock on to produce well on a per hectare basis.

Now isn't that simple?

- 1) Just put on the super. and clover.
- 2) Put more stock on in the spring.
- 3) Lighten up in February.
- 4) Manage clover.
- 5) Let nature organise the pasture.

### Profitability

The key to a viable business is optimum and not maximum production.

When the show has got out of hand so to speak, with high inputs, everything has to go right for success. We have no control over the weather, the banks, the politicians or the consumer's dollar, so that if the margins get too tight everything needs to be spot-on, and during my life time I have found, that is the exception rather than the rule.

If you glance at the production figures (Table 1) you will find that they aren't too bad considering the plant consisted of:

- |                                |                           |
|--------------------------------|---------------------------|
| 1 4x4 Toyota.                  | Jetter for weed spraying. |
| Shearing shed and gear.        | Fencing, plumbing tools.  |
| Small grader pulled by Toyota. | Carpentary tools, Dogs.   |
| Firefighter.                   | Motorbike.                |

The biggest cost was super. Our shearing costs didn't rise over a 15 year period, if related to the weight of wool needed to be sold to shear a sheep. That is another story, but briefly it was achieved by rearranging the furniture in the shed and changing the sheep.

There is a wealth of information just waiting to be collected in woolshed and horse paddocks all over the country. These paddocks often carry far more stock than the rest of the

