

## Pasture under adverse conditions - Handling what you have:

### Managing perennial grasses for livestock production

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"Yalgo", Nymagee, NSW, 2831

**Summary:** "Yalgo" is a property of 26,000 hectares 100 km SW of Nyngan of which 16,000 hectares has been developed. Land has been cleared and a number of pasture varieties tried - these include lucerne, medics, perennial Veldt grass, Currie cocksfoot, Sirolan phalaris and more recently the summer growing Rhodes grass, Bambatsi panic, Premier Digit grass and Buffel grass. The summer active grass species coupled with barrel medics has been the most successful pasture mix so far. Along with the work into selecting suitable species, grazing management utilising cattle, instead of the traditional sheep only enterprise, in conjunction with electric fencing to control kangaroos has been developed. The aim is to run both livestock enterprises profitably and at the same time, through good grazing management, to allow desirable native grasses and forbs to eventually replace the sown pasture species.

Our country is just inside the Central Division, 100km SW of Nyngan and 143km NNW of Condobolin. It was first settled in 1862 as improvement leases and the surveyor's report from the time quoted excellent open grazing land with areas of timber and an abundance of saltbush. There would not have been much sustained grazing pressure due to lack of watering points and predators keeping a balance with the ecological system. However the subsequent land settlement and bad grazing management led to excessive land degradation for 100 years.

My grandfather, Tom O'Neill, selected a 6,400 acre expired improvement lease in 1914, and my father drew a ballot block of 6,600 acres in 1925, both these areas being part of "The Overflow" station.

#### Our problem

Our amalgamated holding of 8 properties now total approximately 26,000 hectares in one solid area with about 16,000 hectares in the process of restoration. This work commenced in 1962. Prior to this period it was a wool-only enterprise run as the environment would allow - a sheep was a wool producer which had to battle through the bad times and do likewise in the good times due to the prevalence of grass seeds from the undesirable plant species such as *Aristida* spp. (wire grass) and *Stipa* spp. (spear grass).

#### Solving the problem

Our introduction to different land use manage-

ment followed the purchase in 1962 of a D7 bulldozer and 3 Chamberlain ploughs with integrated seed boxes. We cleared 810 hectares and sowed lucerne and medics with Perennial Veldt grass (*Ehrharta calycina*), Molopo buffel grass (*Cenchrus ciliaris*) and Birdwood grass (*Cenchrus setiger*) on 141 hectares of it in autumn. The result was spectacular, but establishment was poor where pasture was sown under a cover crop because of the competition for moisture.

This was the turning point in our enterprise. Young weaner lambs had the opportunity to grow out well on the improved pastures and express their genetic potential. We started to class our breeding ewes and wethers and use superior rams. More importantly, it accelerated our development and restoration of land, with the purchase of a second D7 bulldozer and more farming machinery in 1967. The lambing percentage and wool production also increased, due mainly to the lucerne and barrel medic pastures.

#### Expansion into cattle

The next big change was the move into cattle - we had so much pasture that we thought it would be better utilized with cattle. They performed well on sown pasture and we intensified their management using performance recording as a selection criteria from the beginning. We progressed to breeding our own elite replacement herd and subsequently to selling bulls. This evolved through the assistance and guidance of a good friend, Phil Doyle, who has been actively involved for 30 years as our beef herd consultant. We are now developing a composite

breed with his help and that of the University of New England, involving the Hereford, Gelbvieh and Braham breeds.

### Native and feral animals

The involvement with cattle made us aware of the more desirable native grasses. Where there was less grazing pressure we saw the emergence of *Digitaria brownii* (cotton panic) and *Paspalidium constrictum* (box grass) as well as palatable native forbs. The big question now is how do we encourage their proliferation. The answer seems to be to run more cattle. But the better feed supply has also encouraged the invasion of kangaroos from the west. Twice we have harvested over 20,000 kangaroos.

The grasses were not receiving the opportunity to establish and seed down, which was vital to their survival. Because these species have evolved in this environment, I believe it is imperative that we develop management strategies to encourage the better native species to re-establish; they are productive and desirable and handle the variable seasons best. *Aristida* spp. (wire grass), our major grass problem, has diminished in prevalence - it does not thrive under good rotational grazing practice. Similarly annual weeds are less prevalent in the good perennial pasture. We had to overcome this uncontrolled grazing pressure to maintain these species.

### Controlling the total grazing pressure

The need to have complete control of the total grazing pressure became our most urgent problem. So we developed an electric fence system that is fast and easy to erect, works with minimal maintenance and gives excellent animal control.

What has evolved is an innovative multi-purpose fence fabrication and erection system which allows us to contain or exclude animals of all types. The machinery for manufacturing the fence has been made and set up on farm and includes a specifically designed trailer to transport fence components and erect it at the site. The wires are tied off at a corner post, gate post or other anchorage and the fence is unwound as the trailer proceeds along the fence line. A windlass controls the unloading of the threaded droppers and the spacing. The wires are strained while the droppers are still on the ground. The droppers provide insulation. This fence is long lasting and is quick to erect. My three sons and another chap can put up 4.5 km in 9 hours.

### Managing perennial grasses for production and productivity

We have grown introduced legumes and perennial grasses for a long time. Lucerne and the barrel medic are a must. The barrel medic I

consider to be our most important introduced plant. They compete with the naturalised burr medics, minimising wool contamination and producing a greater bulk of feed.

The next introduced grasses we sowed were Currie cocksfoot and Sirolan phalaris. When sown into a prepared seed bed with prolific moisture in early May, they are easy to establish without a cover crop but I doubt if we will continue to sow them due to their inability to persist in this environment. It is important to establish grass species without the competition of a cover crop.

### Summer active perennial grasses - a winner

Summer growing grasses which now have an important role on our place include Rhodes grass, Purple Pigeon grass, Buffel grass, Bambatsi panic and Premier Digit grass.

- Rhodes grass suits our lighter soil where it will spread and supply good grazing before seed set, however from then on it has maintenance value only.
- Bambatsi panic is persistent and is spread from cow droppings.
- Buffel grass has been grown on the property for over 12 years with some degree of success and we are hoping that we are far enough south so that it will not dominate a pasture area to the exclusion of other grasses. Buffel grass in summer associates well with barrel medic in winter which is necessary to lift nitrogen levels and maintain growth.

Due to the difficulty in metering fluffy seeds, we have developed a fluffy seed metering air bin from ideas derived from an American exchange engineer based at Trangie Agricultural Research Centre. His skeleton auger bin handles fluffy seed and our existing small seed bin can handle the rest. The two bins can metre all seed types accurately to the oversized bandseeder that we built for use behind our John Shearer Trashworker. We advocate lighter sowing rates than most people contemplate using, aiming for 2 kg/ha of full seed mix with lucerne at about 1/3 kg/ha in this mix. The cost is up to \$15/ha where a new variety such as Premier Digit grass is included and fertiliser is \$6/ha.

These introduced grasses are very productive but they require gentler management in this district than the better native species. Their long term durability and sustainability is still not proven.

### Where does pasture fit in our whole farm system?

Pastures are the heart of our whole farm system. They have allowed us to breed a sheep flock that I

believe will hold its own in most company, as we now run a breeding flock of elite ewes which is managed with the best genetic aids that are available:

- We now run 14,000 adult sheep (including 6,000 ewes) and 800 cows - totalling 40,000 DSE (1.5 DSE/ha).
- We have diversified into cattle without cutting back on our sheep numbers.
- Our marked lamb percentage has risen consistently since the 1940s and is currently above 80%.
- Our average wool cut since 1978 is 4.7 kg/ha

(all lambs included) and peaked at 7.43 kg/hd in 1989.

- Our maiden ewes with 12 months wool cut up to 9.8 kg/hd this year
- We contract sell 2 tooth cattle into the 350 kg carcass Japanese Ox market and reliably meet their specifications. This includes crossbreeding British, European and *Bos indicus* cattle.

Perennial pastures have allowed our stock to express their genetic potential even in dry years and to meaningfully measure their traits. However we hope that the introduced perennial grasses, as good as they are, will only be a short term measure until desirable native grass and forb species replace them.

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