

Case Study - John Mottram, “Rockbridge”, Manjimup

Paul Omodei, agVivo, Manjimup, Ph: (08) 9777 2980.

Summary

Name: John & Danielle Mottram

Location: 30 km South East of Manjimup

Arable Area: 300 ha

Farm System: Cattle and Poll Dorset stud sheep. Target baby beef market selling calves straight off cow. Using rotational grazing.

Species Sown: Quantum Summer Active Tall Fescue (12 kg/ha), Palastine Strawberry clover (2 kg/ha), Paradana Balansa clover (2 kg/ha)

Sowing Time: June, 2007

Soil Type: Karri loam over clay; Deep River loam



John's paddock sown to a mixture of Quantum Tall Fescue, Strawberry and Balansa clover in early June 2007, shows the summer activity of Quantum Tall Fescue given favourable late spring / early summer rain. Photo taken 13 December 2007 courtesy Greg O'Reilly, Department of Water.

Reason for species selection:

The summer active Tall Fescue variety was chosen to extend the growing season in autumn and spring so that stock remain on good quality green feed for longer. It was also to take advantage of summer rain and reduce hand-feeding. We nearly always get at least one good shower of summer rain so the theory was to have this type of pasture system in place to use up the rainfall and turn it into feed.

Pre-sowing preparation:

Lime was applied at 3 t/ha in autumn prior to sowing. Fertiliser (SuperPhos at 180 kg/ha) was broadcast also.

Following the break of the season, the volunteer pasture was allowed to germinate. This first germination was then cultivated in. The paddock was levelled and rolled. We rolled it because we didn't want the soil to be loose. The seed would germinate better after rolling.

The first germination of weeds following cultivation was knocked down with a high rate of herbicide (Glyphosate 450 @ 2 L/ha, Liaise @ 2%, Goal @ 60 ml/ha, Uptake @ 0.5%, Li700 @ 0.2%). This also included insecticide (Dimethoate and alphacypermethrin at 100 ml/ha each) to get rid of any insect pests that would attack emerging seedlings. Sowing at this time of the year the most prevalent pest is red legged earth mite but as these paddocks have always been pasture there was likely to be a few grubs and beetles that would go for the seedlings as well.

Sowing:

A Bettinson double disc seed drill was used to broadcast seed, with discs removed, onto the prepared seed bed. It was

then rolled with a heavy paddock roller to ensure seed to soil contact.

Post-sowing:

Emerging seedlings in this environment can easily be damaged by insects and other pests. We used Talstar bare earth treatment at 200 ml/ha as insurance against anything eating the new growth.

Capeweed also germinated in abundance because of the soil disturbance from the cultivation. It competed with the new seedlings for space and nutrients and set the growth of some back a bit. The plant density and evenness of the stand was affected. When it came to grazing it was hard to get the timing right. Some parts of the paddock where there had been less capeweed had been growing more strongly and were ready to graze and the other areas where there was a lot of capeweed were not ready to graze. The capeweed was eventually sprayed in July once clover seedlings were big enough to withstand MCPA at 1.2 L/ha.

We used Timerite to apply Le-Mat in the first year to reduce numbers of RLEM the following autumn.

Grazing management:

In the first year of establishment the pasture was grazed 6 times. Rotational grazing has been the key to good pasture growth rates, allowing long rest periods for the plants. Pasture was left to reach at least 2,500 kg/ha dry matter per hectare and not grazed too heavily, down to 1,000 kg/ha DM.

Because establishment was uneven, the grazing in the first year was also a bit uneven. Stock would over-graze the poorer

Continued

areas of the paddock and under graze the better areas. To even things up we mowed the paddock at the start of winter in 2008 and this had a good result in evening up the growth and the subsequent grazing.

Spring grazing: Spring is an important time for grazing perennial grasses such as fescue and ryegrass. They require frequent (21 day intervals generally), heavy grazing to keep the plants actively growing and delay them from entering the reproductive stage. Good spring grazing will also improve the plants ability to withstand periods of hot, dry weather during summer and, therefore, survival rates. The other option is to cut silage. I found that topping in winter and then silage in spring created a much more even stand. The cuts also had the benefit of knocking the broadleaf weeds back.

Nutritional Management:

In March, prior to sowing, the tall fescue paddock received a base fertiliser of SuperPhos at 180 kg/ha which was according to soil tests. We top this up every year in autumn to keep the base levels in check.

During the growing season we applied 70 kg/ha of urea to keep nitrogen levels sufficient. In spring we applied a basic NPKS fertiliser (Hayburst at about 150 kg/ha). This keeps the pasture going for a bit longer.

In November, the pasture was still growing well as it hadn't started to dry off yet so we gave it another top dressing of urea to keep it going.

If we know we are going to get a good lot of rain in summer, we would also give it another top dressing of nitrogen, probably Sulphate of Ammonia, to get a boost of summer growth.

Establishment Year Review:

Initial production estimates from this paddock have been very encouraging. In its first twelve months of establishment

Table 1. Mottram Unimproved Annual pasture comparison with Improved Annual pasture and Perennial pasture, 2008.

Paddock	Area	Description	Pasture Grazed (kg/ha)	Fodder Production (kg/ha)	Total Utilisation (kg/ha)
10 Acre	16	Unimproved annual	3,831	0	3,831
Blue Hill	11	Improved annual	2,476	4,614	7,090
Middle	3.5	Perennial	12,560	2,000	14,560



Mottram's fescue foreground, annual paddock with stock being supplementary fed in background. Photo taken at break of season, May, 2009.

it was grazed 6 times. Rotational grazing has been the key to achieving high pasture growth rates.

It has received a lot of inputs but a highly productive stand such as this requires inputs to remain productive. Table 1 is a comparison of production from grazing, fodder and pasture utilisation between the perennial fescue paddock (Middle), an improved annual paddock (Blue Hill) and an unimproved annual paddock (10 Acre). The improved annual paddock would have received as many inputs as the perennial paddock so costs would be about the same for the first year. The Table clearly shows the perennial paddock is far more productive in terms of grazing and utilisation than the annual paddocks.

Key Benefits: How do the species used help your system?

- * It really does extend the growing season by a minimum of 2 months.
- * Utilisation is close to 80%.
- * Doubles Dry Matter production using best practise techniques.
- * Creates a feed wedge instead of feed gap in winter.
- * Gives you more options for fattening stock.
- * Reduces supplementary feeding at start of year.
- * Better matches autumn calving.

Will you plant more perennial pastures?

Yes for sure. Production gained far out weighs establishment costs, and good preparation reduces establishment failure. If small or non-producing areas are attempted first the time between sowing and grazing is manageable. There is always somewhere, big or small, on every farm that would suit a perennial pasture. It's just a matter of knowing which species to plant where to be of the greatest benefit.