

Case Study - David & Lyn Mathwin, "Trentham", Kojonup

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Summary

Name: David & Lyn Mathwin

Location: Jingalup, 40 km South West Kojonup

Arable Area: 600 ha

Farm System: 80% sheep for wool and cross-bred lambs, 20% cropping.

Species Sown: Saltbush, perennial pasture mix, Lucerne.

Sowing Time: Saltbush planted June/July 2007. Lucerne sown spring 2007. Perennial pasture mix sown spring 2008.

Soil Type: Grey yate clay with some duplex sandy loam over clay in the salt flat areas. The lucerne was sown into a gravelly duplex soil.



Pre-sowing preparation:

Before we planted anything we had to do some significant earthworks. In autumn contractors did the mounding and drainage to set the area up before we could plant. They also sprayed the area with Glyphosate, wetter and ammonium sulphate.

The perennial pasture mix areas in between the salt bush alleys was lightly limed at about 0.5 t/ha the first autumn before the salt bush planting. This was more for the calcium to ameliorate the salt.

The areas to be planted to lucerne were limed at about 3 t/ha and top-dressed with poultry manure pre-sowing. These areas had one strong Glyphosate based knockdown pre-sowing as it was a spring planting and the kill needed to be good.

Sowing:

We used a contractor to plant saltbush seedlings in winter 2007. You can plant it out as seed which is a bit cheaper but the feeling was that the seedlings, being more advanced, would have a better survival rate in extreme weather conditions. We have a 40 foot boom spray so the alleys were made to be 40 foot wide to get the boom in. In some areas it was not practical to leave alleys so about 40% of the 46 ha area ended up being block planted to saltbush.

The lucerne was sown in spring 2007 with a disc combine that had press-wheels. Seed placement was shallow. Seed was pre-coated with inoculant. This had the poultry manure pre-planting so we didn't sow with any fertiliser.

The perennial pasture mix (phalaris, chicory and plantain) was planted in spring 2008. We used a disc combine with press-wheels to apply pressure. The mix contained one third each of

Perennial Species Sown:

Old Man and River Saltbush, planted in alleys with 3 mounded rows in each strip.

Perennial pasture mix planted in the alley ways between the saltbush strips; Phalaris, Chicory and Plantain. Puccinellia was already established in the area. The perennial mix was over-sown into the Puccinellia. The aim would have been to sow Tall Wheat Grass in the inter-rows but seed was not available.

Lucerne has been sown further up the landscape in different paddocks.

Reason for species selection:

The main reason was to increase the biodiversity on the farm. We planned to try a few different pasture and forage species to increase the mix of available feed for stock which would increase our grazing options.

The main planting was in and around salt flats where the scald was quite evident. This was effectively unproductive 'wasteland' so we were hoping to turn this around, not so much as eradicating the salt but being able to utilise the land a bit more.

The lucerne planting was to further increase our grazing options. It gave us an extra aspect to our grazing (namely summer and autumn) which was previously fairly restricted.

Area sown:

The salt flat where the salt bush and the perennial pasture mix were sown was 46 hectares. The lucerne areas total 18 hectares.

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phalaris, chicory and plantain. It was sown at 6-7 kg/ha, so the rates of each would have been just over 2 kg/ha. We put Agstar down the tube at sowing which is the only fertiliser the mix has had to date.

Post-sowing:

There are a few things you need to watch for after planting. The waterlogging with saltbush, not that you can do much about it then except for maybe improve the drainage a little. Fortunately we didn't have any trouble.

Because of the time of the year (spring) we had to watch for red legged earth mite damage with both the lucerne and the perennial pasture mix. We monitored but didn't have any damage from them.

Grazing management:

Since we planted the saltbush it has been grazed twice in the first 18 months; first in autumn 2008 and then again in spring 2008 once it had recovered. The 46 ha paddock was split into four sections so we could control the grazing a bit better. We put about 1300 ewes in and pulse grazed each section. We let them graze it down to sticks before we moved them on. They were in there for a total of 5 weeks (7-10 days each section) and then we took them out. It's worked well so far because it really takes the pressure off the other parts of the farm at those times of the year especially autumn when annual pastures are just getting going and the ewes are coming up to lambing. We take them off about a week before lambing because the landscape is quite low-lying and we don't want them lambing down there in case it gets too wet.

We basically graze to whichever species we want to persist at the time. As the saltbush was planted 18 months before the pasture mix, we grazed to saltbush initially. Now the saltbush is fairly well established, we will start grazing to the pasture mix now until it is well established.

The lucerne is also rotationally grazed. We used this for the cross-bred lambs. It gives our grazing system further options that we didn't have before. They're all part of the grazing system where before we didn't really have much of a system. There was only one aspect – annual pastures backed up with hand-feeding during summer and autumn.

Nutritional Management:

We prepared the ground before planting to get the conditions favourable for the different species to grow. The saltbush and perennial pasture mix had a low rate of lime (500 kg/ha)



to reduce the harsh effects of the salt scald so that the plants could become established. The perennial mix had Agstar at planting. We will monitor the growth and salt levels and keep the fertiliser levels in check.

The lucerne had a higher rate of lime pre-sowing. It needs a higher pH so we applied 3 t/ha lime. The poultry manure was to build up the soil nutrient base and have a longer lasting effect – almost slow release. Again, we monitor levels regularly and will adjust the regime if necessary.

Establishment Year Review:

We are very happy with the establishment. The plan was well devised and executed and the logistics of the whole thing panned out well.

Having a few seasons to prepare ground and establish the different species has really benefited the success of the establishment.

Key Benefits:

The perennials provide more options with our stock as far as grazing and improving the biodiversity. The whole economics of the farm has benefited as we did not have many options before. The extra infrastructure (fencing, water) has helped enormously.

The biology of the salt flat area has already shown signs of improving. The salt scalds are starting to fill in now (within 2 years) so it must be dropping the salt levels. From an economic and a biodiversity aspect this is a huge benefit. It has made wasteland useful again. It hasn't completely turned it around but it has given it a productive purpose.

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