

## Case Study - Graeme & Margaret Jones, Ongerup

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### Summary



Name: Graeme Jones

Location: "Corackerup" in Ongerup

Property Size: 3100 ha (with 2600 ha arable)

Average Rainfall: 438 mm

Species Sown: Lucerne, Barley, Oats & Canola

Reason for Species Selection: initially to increase and improve green feed over summer

Enterprises: Sheep, cattle and rotational crops

### Farm details

- \* Total area 3100 ha, 2600 ha arable divided into 54 main paddocks.
- \* Livestock are a major part of the farming enterprise.
- \* They shear 6000 sheep, have 2800 mated ewes and 600-700 hoggets, 50-60% are mated to merinos and 40-50% mated for prime lambs.
- \* 130 breeding cattle, with calves and weaners up to 400 at times, the progeny are sold at 16 months.
- \* Area under lucerne varies between 500-700 ha depending on the cropping rotations.
- \* One third of the arable land is cropped. In the past it used to be one year in three, the inclusion of lucerne into the rotation has changed this. The lucerne paddocks are usually in lucerne for four or five years, then into crop for two or three years.
- \* Rainfall average is 438 mm. Three out of five years they get good summer rains that benefit lucerne and any perennials.

### Initial sowing

Coming from South Australia, Graeme had seen good lucerne paddocks and realised the value of summer green feed. With only a small property, they tried a few paddocks of Hunter River lucerne and only got a couple of days feed from each paddock. In hindsight it was the wrong lucerne, the wrong inoculant, insufficient insect control and too small an area.

After seeing piezometers around Jerramungup, and with a rising water table and the appearance of small salt scalds, Graeme decided to install some of his own. They now have 22 piezometers across the property that are read three times a year and used to decide when to plant lucerne and when and for how long to go into a cropping phase.

"Lucerne has taken the lows out of our seasonal fluctuations"



*Happy sheep grazing lucerne in May 2005 following a wet start to the year.*

In 1998 Graeme decided to try lucerne again. He obtained advice from wherever he could, such as experienced grower Geoff Bee, the Dept of Agriculture and Tom Bailey from WA Lucerne Growers. A point that Geoff Bee made really struck home, "Don't mess around with 50 acres, put in 500 acres, so you can rotate a mob in it".

With a subsidy from the Two Rivers land care project, Graeme planted 250 acres a year for two years. The lucerne was established as a monoculture using winter active lucerne varieties with improved strains of rhizobia, lime and insecticides. Since then, he has planted lucerne in most years, with some sowings up to 300 ha in area.

With a bigger area of lucerne in, the benefits are now starting to be realised. Graeme said "We've reached the stage now where rain is valuable, no matter what time of year it comes, whereas you wouldn't have said that 15 years ago".

### Pure stands or mixtures?

Graeme has tried both and is now leaning towards mixed pastures. The pure lucerne paddocks were on geranium-type paddocks, where there was no sub clover. However Graeme has noticed a problem with these pure stands. They can become water shedding areas rather than water absorbing areas. The sheep walk between the plants, creating bare patches. If it rains, the water doesn't go straight in, creating

## Continued



*Lucerne sown under a barley cover crop in 2008. Note two rows of barley between each row of lucerne.*



*Lucerne sown under a canola cover crop in 2008.*

run off. But with some sub clover the water goes in where it falls. With a pure stand you can go from maximum feed to none whereas a mixed pasture will still have some annuals left. Graeme has also found that mixed pastures seem to fatten stock better than a pure stand. With a pure stand, you need to toss a lot of hay in the corner of the paddock. You do need more acres of mixed pasture to grow the same kilograms of green feed. A lot of the paddocks being established to lucerne now have existing sub clover pastures. In the following year, the sub clover and the lucerne provide a good mixed pasture.

### Cover cropping

Since the Two Rivers project most of the lucerne has been established under a cover crop of barley. The reason for this is to reduce establishment costs. The barley was only sown in every second row. Graeme has found the yield declined from a 17 bag crop to 13 bags. There has been good lucerne establishment as it had some light between the rows and got its roots below the barley.

In 2007 he tried sowing the barley and lucerne across all the rows. The barley was sown at 30 kg/ha. With the dry conditions and competition from the barley, the establishment was not very good. Two of these paddocks were re-established in 2008. (WALG recommends using alternate row establishment for cover cropping)

In 2008 a new air seeder was purchased, that can sow fertiliser, grain and lucerne separately. Three hundred hectares was established under barley, oats and canola with 2 rows of crop and one of lucerne. With the increased light and moisture availability from the two rows of crop and one of lucerne there has been a very good establishment. Sowing two rows of crop

and one of lucerne will probably have little impact on the crop yield and still establish a good lucerne mixed pasture, with the added benefit of the paddock not being out of production for nine months.

### Graeme's tips

#### Establishment

- \* Seeding depth is most important, some of our earlier lucerne was sown too deep (sow at 5-10 mm deep).
- \* Use insecticide. This is more important if sown in mid-winter.
- \* You don't have to get rid of all the weeds, you just have to control them in the spring to let the lucerne get a bit of sunlight. Having a few weeds early gives the bugs something else to chew on.
- \* Graze initially with cattle or very lightly with sheep.
- \* I don't know about inoculant. We're using it regardless. When putting lucerne back into old paddocks, we might not need it?
- \* No weeds before you put it in. Weeds germinating at the same time or just after are all right.

#### Grazing

In a first year stand, cattle get the first grazing, if possible. Cattle and perennials are a pretty good blend as they don't damage the plants as much. Sheep tend to graze lower and can pull some plants out.

All classes of stock go on the lucerne. Lambs are weaned at the end of October onto lucerne. Three to four lucerne paddocks are not grazed over winter but held back for weaning.

## Continued

Lucerne is rotationally grazed in varying rotations and spelled to let it regenerate. Bigger mobs of 400-500 sheep are used to graze the lucerne with up to 1700 lambs in a mob. Bigger mobs are needed to try and graze the lucerne evenly. Smaller mobs tend to over graze some sections of the paddocks.

### How we use our lucerne

We use lucerne for out of season meat production, with the lambs and the weaner cattle in most years on green feed right through to March. We haven't had enough paddocks to put them all on it, but we're at the stage now where we can have six mobs on it at a time. I've also got enough paddocks that I can rotate them around a bit.

We use lucerne to keep the water table below the surface instead of on the surface. The piezometers are telling us where the problems are, what we have or haven't achieved. If the water table is still at 1.2 metres, I would put lucerne back in. Some paddocks I just keep the lucerne in place for longer. Paddocks where we have got the water table down to 2.7-3.5 metres are fairly safe to put into crop for three or four years.

We also opportunistically cut hay. Hay in the first year is a good way to get rid of weeds, providing it is in early enough to be able to cut.

### Advantages of Lucerne

- \* Out of season livestock feed.
- \* Growth rates of animals. Better growth rates of cattle. Sometimes we have to sell them before we want to because they are heavy enough.
- \* Quality of wool. Low vegetable matter.
- \* Lowering water table



*Hay made from lucerne in December 2003.*

- \* Reclaiming a dam that was over 1500 Milli Siemens salt. After two years of lucerne the salinity dropped and the dam was suitable for stock again.

### Key learnings / outcomes

- \* In a pure stand, you need 40 plants per metre and, if it's a pure stand, it's got to cover the whole paddock.
- \* In a mixed pasture situation 10-12 plants/m<sup>2</sup> is quite adequate. It's definitely adequate for the water table and the annual pasture will cover between the lucerne.
- \* Don't set stock. You can definitely go beyond what the textbook says as far as pressure, and you won't wipe it out. We should have wiped some out in 2006 but we didn't.
- \* Lucerne has reduced the damage from out of season rain. If you get it, the lucerne grows. If you don't, the sub clover is still there and hasn't been spoilt.
- \* Drought insurance. A year with a dry winter and heavy summer rains means we still have feed on one third of the farm. If we have a dry summer we've still got the sub clover. "It's taken the lows out of our seasonal fluctuations".
- \* Lucerne lowers the water table and has stopped salt scalds spreading from outside the property.
- \* Get as much advice as you can before growing lucerne, you can always keep learning about it.

*A WALG initiative funded by the National Landcare Program*



*Lucerne paddock in October 2008.*