

Case Study - Ash Reichstein, Esperance

Philip Barrett-Lennard, Evergreen Farming, Ph: (08) 9475 0753.

Summary

Name: Ash Reichstein & Megan McDowell

Location: Esperance

Farm Size: 4800 ha

Species Sown: Lucerne, canola, barley and wheat

Enterprises: Sheep and crops

Soil Type: Shallow sandy gravels over clay subsoils



A second year lucerne paddock showing a high plant density. The lucerne was established under a Clearfield canola crop the previous year.

Background

Ash Reichstein and Megan McDowell farm 4800 hectares of transitional mallee country 40 km north east of Esperance. The soils are predominantly shallow sandy gravels over very hard and compacted clay subsoils. As a result, paddocks lower in the landscape are prone to waterlogging and, ultimately, salinity. Crop yield potential suffers from waterlogging and totally evaporates when salinity rears its ugly head. But the addition of a regular lucerne phase dries up the excess soil moisture, allowing these low lying paddocks to be kept in the cropping rotation over the longer term to maximise profit.

Apart from keeping their lower paddocks in the cropping rotation, lucerne also brings a number of other benefits. The sheep enterprise benefits as the lambs have access to high quality feed right through spring, summer and autumn. This allows cross bred lambs to be finished and merino lambs to be grown out without a lot of expensive supplementary feeding.

The cropping enterprise enjoys other benefits from the incorporation of lucerne. The nitrogen requirements of the crops grown after a lucerne phase are significantly reduced. Fertiliser nitrogen requirements are 50% less for the first crop after lucerne, and 25% less for the second crop after lucerne. This is a significant saving. Wild radish is controlled, as the lucerne competes aggressively with it at the break of the season. And those radish plants that survive can be grazed out later with sheep. Another useful benefit of the lucerne is its ability to penetrate and break up the hard setting clay subsoils. This improves soil water holding capacity, increasing both trafficability and potential crop yield.

Establishment

Ash says his preferred method of establishing lucerne is by sowing it under a Clearfield canola crop. This eliminates the opportunity cost that occurs when lucerne is sown on its own and the paddock taken out of production for 6 to 12 months

while the lucerne establishes. He says he hasn't had a failure yet with this method.

A relatively high sowing rate of lucerne (5 to 6 kg/ha) is used to reduce the risk of establishment failure. The canola is sown at 2.5 to 3.0 kg/ha. The lucerne and canola seed is mixed together and sown with a DBS airseeder fitted with knife points, closing plates and press wheels. Highly winter active varieties are used, including Trifecta, Aquarius, Sceptre and Sardi 10. And even though topsoil pH is only 4.5 to 4.7 across the farm, additional lime is not seen as critical to successful establishment, as soil aluminium levels are not high. Having said that, every paddock has received one application of 1.5 t/ha of lime over the last 10 years. And more is planned, with 800 to 1000 tonnes to be spread in 2009.

Lucerne Phase

Lucerne is usually kept in a paddock for 4 to 5 years before being removed and replaced with a 4 to 5 year crop phase. The first year of the crop phase is usually canola as this gives excellent weed control before moving in to three consecutive cereal crops. The last year of the crop phase is also canola but this is undersown with lucerne to commence the next lucerne phase. Lucerne is removed at the end of its phase with a knockdown spray in January or February consisting of high rates of Glyphosate and Lontrel. Heavy grazing is also used to improve the kill. Ash says it would be better for the following crop if this occurred in spring, rather than summer, but he is too greedy for the extra sheep feed! This late removal of lucerne does occasionally reduce crop yield, especially if the following winter and spring is drier than average.

Ash likes the lucerne to be a mixed stand including annual pasture species such as subclover and ryegrass. He doesn't bother with weed control in the first few years of the

Continued



The second crop after a lucerne phase - a high yielding barley crop. Note the salt scald in the background showing the presence of the high water table.

lucerne phase, in order to maintain a good pasture density. Spraytopping and mechanical topping is used in the last 2 years of the lucerne phase to gain control of annual grasses. This helps the following crop phase.

Livestock Management

When it comes to managing livestock on lucerne pastures, Ash says he prefers bigger mobs and smaller paddocks every time. A few years ago when sheep were more of a focus (and numbers were higher), he would use temporary electric fencing powered by portable solar energizers to subdivide large lucerne paddocks into smaller areas. This produced a much more even grazing, and forced the sheep to eat everything, weeds and all, rather than just selectively grazing the lucerne. These days, with more crop and fewer sheep, he's given away the strip grazing but still rotationally grazes his lucerne with large mobs.

Ash and Megan now run 1800 ewes (down from 6000 over 10 years ago) with half mated to Poll Dorset rams to lamb in autumn, and the other half mated to Merino rams to lamb in winter. The lucerne is critical in the September to November period to finish the cross bred lambs. But the lambs don't just eat lucerne, they also have access to two self feeders full of barley. Ash says the barley provides the lambs with extra energy, which when combined with the protein from the lucerne, supplies a very balanced finishing diet. Growth rates of approximately 250 grams/day are common.

The later drop Merino lambs are then run on lucerne over summer and autumn, in addition to spending some time on stubbles. With a wet summer, they will spend more time on lucerne pastures. These lighter weight weaners really get a

boost from the lucerne. Ill-thrift is never an issue. Other stock have access to lucerne opportunistically if there is feed to spare. Ash says it is most important to "use it" or "lose it" with lucerne. When leaf drop occurs, you "lose it"!

Lucerne pastures are usually fertilised with 100 to 150 kg/ha of Super or a Super Potash blend. But with current high fertiliser prices, they will only receive 75 kg/ha in 2009.

Insect control is achieved with large numbers of livestock, rather than insecticides, with Ash "wanting the sheep to beat the insects to it".

Ash is adamant that lucerne pastures should be mixed pastures and not monocultures. This improves both winter carrying capacity and animal performance. He says that too much lucerne can be a bad thing for an animal, and it's important to have other pasture species present to balance the diet.

The Future

Currently 2800 of the 4300 hectares of arable land is continuously cropped. This land is higher in the landscape and does not suffer from waterlogging and salinity. He sees no role for lucerne on this country.

The other 1500 hectares of arable land is rotated between phases of crops and pastures. In the well drained country, the pasture phase uses annual species such as sub clover. The lower lying country is where lucerne is currently used to mop up excess water and control salinity and waterlogging.

In the future, Ash thinks that every paddock that isn't continuously cropped will have a phase of lucerne. He is interested in using less winter active lucerne varieties with the thought of cropping in to them without killing the lucerne. He can envisage the use of 2 cm RTK auto-steer to plant the crops between the rows of lucerne without disturbing the lucerne plants. This would allow the lucerne and crop phases to co-exist at the same time. Lucerne plant densities would need to be lower, to reduce the competition with the crop. But water use could still be enough to control waterlogging and salinity. Research conducted by DAFWA suggests that water use at low lucerne plant densities (10 plants/m²) is significantly greater than annual pastures, and not much less than at high lucerne plant densities (>20 plants/m²).

One issue that will need to be overcome is the poorer seedling vigour of the less winter active lucerne varieties. Using alternate rows to establish lucerne under canola might be just the trick to make this work.

An initiative funded by the National Landcare Program