# Maximising Inter-row Pastures in Fodder Shrub Systems

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***Project Duration:*** 2011-2013/2014

**Key Points**

Points to consider when establishing an inter-row pasture:

- Grazing management regime
- Timing of grazing
- Cost/benefit of pasture mix establishment
- Suitability of machinery for establishing an inter-row pasture
- Amounts of pasture biomass desired
- Ground cover levels required
- Width of inter-row area

**Background**

Landholders are increasingly utilising unviable cropping areas for grazing, through the planting of fodder shrub systems. A key component of fodder shrub systems is the inter-row, which makes up two-thirds to three-quarters of the feed intake of livestock grazing these systems.

Through the establishment of productive and nutritious inter-row pasture species rather than the tradition of grazing annual grasses and weeds in fodder shrub systems, the grazing value of these previously unviable areas is maximised.

**Buckleboo demonstration site**

A demonstration of inter-row pasture options for the low rainfall zone was established at Jeff Baldock's property, near Buckleboo, north-west of Kimba on the Eyre Peninsula. The area has an annual average rainfall of 292 mm. The area established with fodder shrubs (Figure 1) was previously part of a much larger paddock in the Baldock's cropping rotation, but due to its rocky nature a 40 ha section was divided into two saltbush blocks with a central watering point. Old Man Saltbush 'Eyre's Green' was planted into a cover crop of barley in 2011, with 3 m between plants, and ~6 m (20 ft) between rows. The Baldock's allowed for the sowing of future inter-row pastures using their 4m (14 ft) combine.

**Figure 1:** A rocky, unproductive area of the paddock was established with a fodder shrub system.

**Figure 2:** Buckleboo Ag Bureau seeder was used to sow inter-row pasture options.

The demonstration site was sown using the Buckleboo Ag Bureau seeder (Figure 2), rather than a combine due to the ease of calibrating the machine for the various pasture options. The demonstration site was sprayed with 1.5L glyphosphate and 100ml oxyfluorfen, and sown in June 2012 and 2013. Pasture options trialled included cereals (oats and barley), legumes (medic, vetch and Lucerne), grasses (Safeguard Rye and Wallaby Grass) and various combinations of cereals and legumes. All pasture options, except Wallaby Grass were sown with 30kg/ha of 27:12 fertiliser.

The establishment and production of various inter-row pastures was variable with some performing better than others. Lucerne had not germinated at the time of monitoring in October and failed to establish over the trial, Wallaby Grass seedlings were very small in October but easily identified in January. Selected photos of 50 x 50 cm quadrats of pasture options for the 13/14 growing season are presented below (Figure 4).

The demonstration of the various inter-row pasture options presented some highly variable results in regard to the establishment success, amount of pasture biomass produced and levels of ground cover.

**Establishment:** Only one demonstration plot – lucerne did not establish; in the barley + vetch + Angel Medic, the medic did not establish; Wallaby Grass was slower than the annual pastures to germinate and establish, which was not unexpected and it will take up to 18-24 months for the perennial grass to reach maturity.

**Pasture biomass**: Angel Medic and the combination of barley + vetch produced the largest pasture biomass for grazing in spring; for summer grazing Safeguard Rye, followed by barley + vetch + Angel Medic, and barley had the largest pasture biomass.

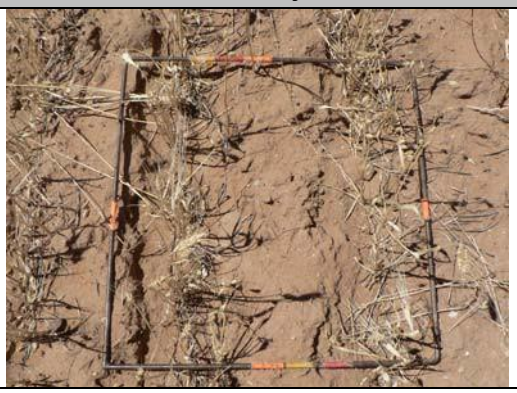
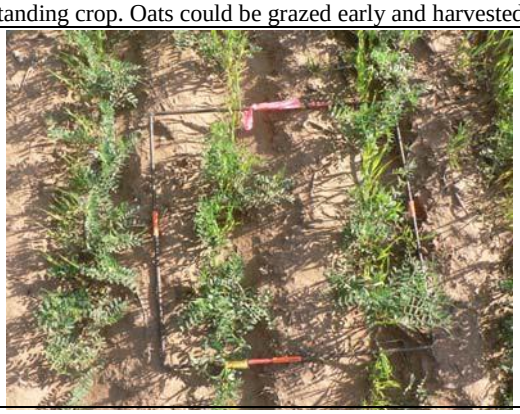
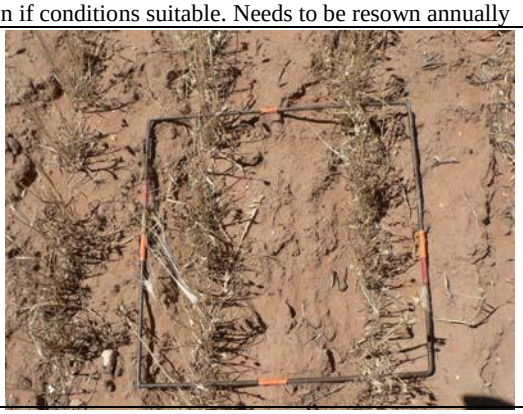
**Figure 3**: High biomass inter-row pastures in a Fodder Shrub System

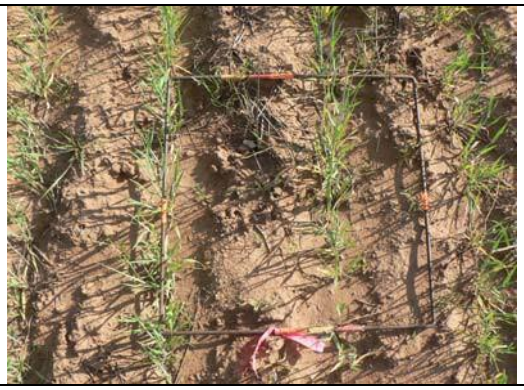
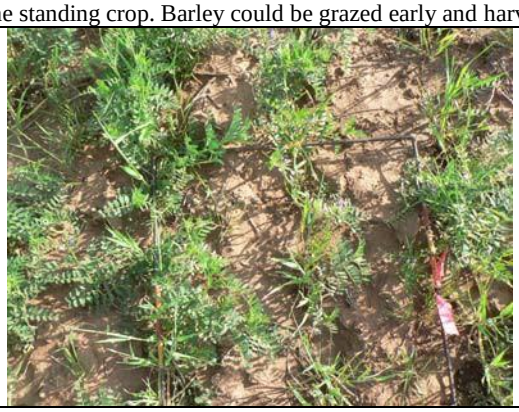
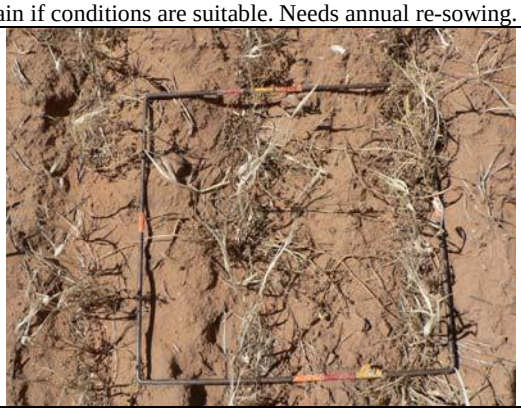
**Ground cover:** Pastures with the highest winter ground cover levels included Angel Medic, barley + vetch, vetch; and oats and vetch. Summer ground cover levels were highest in the Safeguard Rye, barley + vetch + Angel Medic and barley pasture demonstrations. However care should be taken when grazing annual pasture options that ground cover levels are maintained, ideally with >70% cover.

**Economics:** The cost/benefit of establishing annual pasture such as barley + vetch (which produced excellent amounts of pasture biomass) every year will need to be balanced with the amount of pasture production, the cost and other farming demands, however many of the pasture options could be sown dry or early. The second option is sowing an annual pasture such as medic or rye grass which can naturally regenerate. The third option is the sowing of a perennial pasture such as lucerne or Wallaby Grass. Lucerne did not establish successfully at this trial site but it has been established by other landholders in fodder shrub systems with good success. Wallaby Grass takes longer to establish than annual species but provides good green winter feed and summer green feed following summer rains.

Our thanks to Jeff Baldock and family, Neil Ackland and Corey Yeates Natural Resources Eyre Peninsula, and Buckleboo Ag Bureau for the use of their seeder.

**Figure 4** – Following two pages: 50 x 50 cm quadrats of pasture options .

| | October | January |
|---|---|---|
| Oats |  |  |
| | Oats established well, but did not produce as much biomass as barley. Winter grazing - sow oats early or dry and graze the early growth; graze in late spring once grain has developed, but before stubbles become available; or summer/autumn graze the standing crop. Oats could be grazed early and harvested for grain if conditions suitable. Needs to be resown annually | |
| Oats + vetch |  |  |
| | Oats and vetch established well and produced good levels of biomass with the addition of vetch to the pasture mix. Winter grazing - sow oats and vetch early or dry and graze the early growth; graze in late spring once grain has developed, but before stubbles become available; or summer/autumn graze the standing crop. Needs annual re-sowing. | |
| Vetch |  |  |
| | Vetch germinated and established well, producing good levels of biomass. Vetch has very high feed value as green plants, dry matter and grain. Graze in winter/spring as a green pasture or in summer/autumn for dry grazing. Take care to maintain cover in the inter-row when grazing. Needs to be re-sown annually. | |
| Safeguard Rye |  |  |
| | Rye grass established well, producing a productive and nutritious feed base. Graze in winter, once plant has three fully developed leaves for a short period with high stocking rates to promote tillering and then graze in winter/spring as growth allows. Will regenerate from seed if not over grazed in summer/autumn. | |

| | | |
|---|---|---|
| Barley |  |  |
| | Barley established well, and produced good levels of pasture biomass. Winter grazing - sow barley early or dry and graze the early growth; graze in late spring once grain has developed, but before stubbles become available; or summer/autumn grazing of the standing crop. Barley could be grazed early and harvested for grain if conditions are suitable. Needs annual re-sowing. | |
| Barley + vetch |  |  |
| | Barley and vetch established well and produced excellent levels of biomass through the addition of vetch to the pasture mix. Winter grazing - sow barley and vetch early or dry and graze early growth; graze in late spring grazing once the barley grain has developed, before stubbles become available; or summer/autumn graze the standing crop. Needs to be re-sown annually. | |
| Barley + vetch + Angel Medic |  |  |
| | In this pasture mix, the medic did not establish, most likely attributable to the competition with the other species. This pasture mix produced excellent levels of biomass. Winter grazing sow barley and vetch early or dry and graze early growth; graze in late spring once the barley grain has developed, before stubbles become available; or summer/autumn graze the standing crop. Needs to be re-sown annually. Ensure medic is not sown too deep if included in the pasture mix. | |
| Angel medic |  |  |
| | Angel Medic established exceptionally well and produced large amounts of pasture biomass. Graze in winter once plants are well established; graze green growth in winter/spring; and dry feed summer/autumn. Medic will re-germinate the following year if allowed to set seed. | |