

FORAGE SHRUBS IN LOW RAINFALL FARMING SYSTEMS - FARMER EXPERIENCES IN SA'S UPPER NORTH.

A number of farmers in the Upper North low rainfall farming area of South Australia are using forage (or fodder) shrubs such as Oldman Saltbush (*Atriplex nummularia*) on their properties.

Forage shrubs are integrated in the farming system to:

- Improve pasture production to provide more stock feed;
- Provide a feed source that is there “year in and year out”, responsive to summer rains, adapted to local soil types and environment, and is more drought resistant than annual plants;
- Diversify the pasture species mix to provide a more nutritious and varied diet for stock;
- Improve productivity of land that is not well suited for cropping such as dry saline land (“magnesia” patches), eroded or erosion prone land, rocky areas¹;
- Provide shelter for stock, particularly off-shears sheep or lambing ewes.

¹ Note: Hilly, rocky, unarable areas not used for cropping often host a range of native plant and animal species and as such are subject to Native Vegetation Clearance regulations. Advice should be sought from the appropriate authorities before planting these areas.



All of the commercial plantings of forage shrubs in the area are Oldman Saltbush, mainly because plants have been commercially available in large numbers for a number of years and considerable experience and knowledge of growing and managing these plants has been accumulated over a long period. Several properties have plantations that were established in the early nineteen nineties.

In more recent years, “Enrich” project sites were set up at Morchard and Wandearah to investigate the suitability and potential of a range of perennial Australian shrubs as forage shrubs. “Enrich” was an Australia-wide project which demonstrated that not only could shrubs provide feed, some could also improve the efficiency of livestock digestion and help control gut parasites. It has also been shown that forage shrub plantations can offer food, shelter and favourable breeding conditions for native birds, mammals and reptiles.

Kym Hooper planted over 250,000 saltbush seedlings on his property between Pekina and Morchard early in the 1990’s, on pieces of previously cropped land and areas of rocky, shallow soil. Kym believed he would get better value out of grazing on these areas and was

looking to improve the amount of feed for his stock, particularly during autumn.

Kym's observations and experiences are:

- Grazing saltbush paddocks together with adjacent stubble paddocks utilises the stubbles well and provides stock with a more balanced diet.
- Planting saltbushes too close together results in a lack of pasture and surface cover between the bushes. A lack of cover (and lack of competition) has resulted in an increase in onion weed amongst the bushes.
- On Kym's father's property at Walloway, a less dense planting of 2 rows of saltbush then a spacing of 10 to 15 metres to the next double row of bushes has provided more room for grasses and medics to grow. The spacing between the double rows is wide enough to allow a seeder through.
- Planting on shallow, rocky soil is less worthwhile than planting on better soil.
- Grazing saltbush hard in the autumn opens up the plant canopy and lets light and rain through to stimulate the grasses and medics beneath.
- Slashing helps keep leaves within reach of sheep and stops the bushes becoming too woody. It should be done early in the plant's life when a tractor can drive easily over the top of bushes but not too early so that plants get pulled out of the ground by the slasher.
- A fire late in 2009 burnt through the saltbush plantations but most of the bushes survived. The fire was slowed to some extent in the

plantations, probably due to the lack of groundcover. Fire fighting vehicles suffered numerous punctures driving over the bushes.



Kym Hooper's saltbush plantings



Burnt saltbush land, April 2010

Kym Fromm, Gary Hawthorne and Bob Arthur all planted Oldman saltbush on "magnesia" patches (dry saline land) in 1992 as part of a trial conducted by the Pekina Agricultural Bureau Branch. These patches were quite bare in places because of high salt contents in the topsoil. The bushes grew well initially and have gone on to flourish on Kym's and Bob's place but died during the 2000's on Gary's

property. The reason for the failure is not clear but is possibly because the plants did not develop deep root systems in the shallow soils they were planted in so did not cope during periods of waterlogging and dry conditions.

Bob uses his plantation mainly for autumn feed and gets about one month's grazing from the bushes in conjunction with stubble in the surrounding paddock. The 1.7 ha area is also occasionally used to shelter small mobs of lambing ewes. Bob has also found:

- There is good regeneration of grass and subclover between bushes on land that was previously bare.
- While preferably the bushes should be lower to stop them getting too woody, they do provide good shelter.
- Horehound is a problem.
- Oldman Saltbush doesn't like waterlogging.
- Volunteer saltbush seedlings are growing amongst the bushes.



Aerial view of saltbush plantation on dry saline land patch on Bob Arthur's property.



Bob Arthur in his saltbush plantation with grass and medic ground cover.

Kym Fromm has also noticed that previously bare land between saltbushes has now covered up with grass and there is less run-off from the area now. On his property, the saltbush is grazed as part of a larger paddock in the summer-autumn period. Sheep are taken off the paddock when the saltbush is bare of leaves. Kym agrees with Kym Hooper in that it would be better having 2 rows of saltbush planted close to one another with room between the pairs of rows to drive, sow pasture, add fertiliser and control weeds.

Kevin Whenan bought a property at Nectar Brook in 2006 and wanted to improve cover on land that had been used for cropping. He planted over 10,000 saltbushes in 2007 with the aim of increasing feed production, providing more shelter for sheep and reducing wind erosion. Kevin was so pleased with the first year's planting that he planted another 10,000 seedlings the next year however nearly all of these died. It is uncertain as to why and the only reason Kevin can think of is that they were planted in very wet soil so perhaps suffered waterlogging.

Kevin's observations and experiences are:

- There is good regeneration of *Maireana* (bluebush) species, barley grass, medic, ward's weed and annual saltbushes now amongst the planted saltbush which has provided very good feed and cover.
- There is volunteer germination of Oldman Saltbush occurring.
- The saltbushes are not grazed hard because stock are removed when the ground cover starts to thin out and bare ground starts to show.
- Good quality water from springs in the hills is reticulated by gravity to every paddock. Several tanks have been installed on the property to ensure a good supply is maintained and around 18 to 20 km of pipe has been laid.
- Paddocks are grazed one at a time so that pastures have a rest from grazing and a period to recover.



Kevin Whenan in an Oldman Saltbush plantation



Oldman Saltbush planted on former cropping land

Introducing forage shrubs into a mixed cropping and livestock farming system requires planning and careful consideration because planting perennial species is a long term action.

Factors to consider include:

- What is the prime reason for using forage shrubs – improve pasture production overall; cover the autumn “feed gap”; supplement stubble grazing; provide shelter?
- Long term cropping intentions – is land to be permanently taken out of cropping or occasionally cropped?
- Is there a reliable, good quality supply of stock water?
- Is more or better fencing required to manage the grazing of the shrubs?
- Are there enough resources available (labour, finance and machinery) to prepare and plant a large number of seedlings at the appropriate time?

There is now comprehensive information available to help farmers plan, establish and manage forage shrubs:

"Forage shrub systems: A guide for producers in the low rainfall zones of South Australia" . A search of the internet should find a site from where this can be downloaded.

"Perennial forage shrubs providing profitable and sustainable grazing: Key practical findings from the Enrich project"

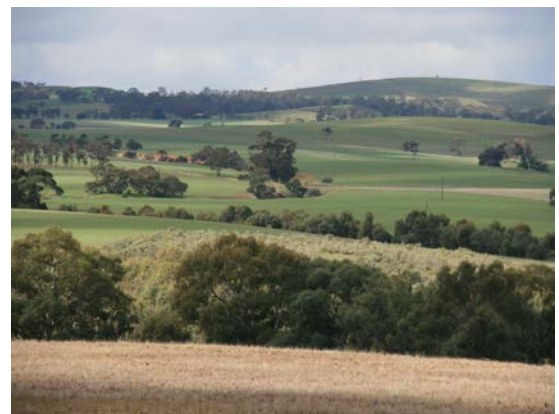
and

"Perennial forage shrubs – from principles to practice for Australian farms: A companion publication to "Perennial forage shrubs providing profitable and sustainable grazing: Key practical findings from the Enrich project"

can be downloaded from

www.futurefarmonline.com.au

or contact Upper North Farming Systems by emailing unfs@outlook.com or writing to PO Box 323 Jamestown, SA, 5491.



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