



Farmers help identify forage potential of native shrubs

By Jill Griffiths
Kondinin Group

When word got out that a range of native species was being trialled for suitability as forage shrubs, researchers were inundated with enquiries from farmers wanting to test shrubs in their region or on their farm. The trouble was, the researchers were not at the on-farm trial stage yet.

CSIRO Livestock Industries researcher and *Enrich* project leader, Dr Dean Revell, said farmers were overwhelmingly keen to try out some shrubs, even knowing that research was only at an early stage.

But many of the plants being trialled are not available commercially, so researchers could not offer plants to volunteers. For scientifically valid trials, it is important all seedling stock planted is from the same germplasm, preferably from the same nursery. This eliminates genetic variability within a species as an explanation for varying success at different sites.

To date, all plant evaluations have been done at one site in South Australia, although other parts of the research project are being carried out elsewhere.

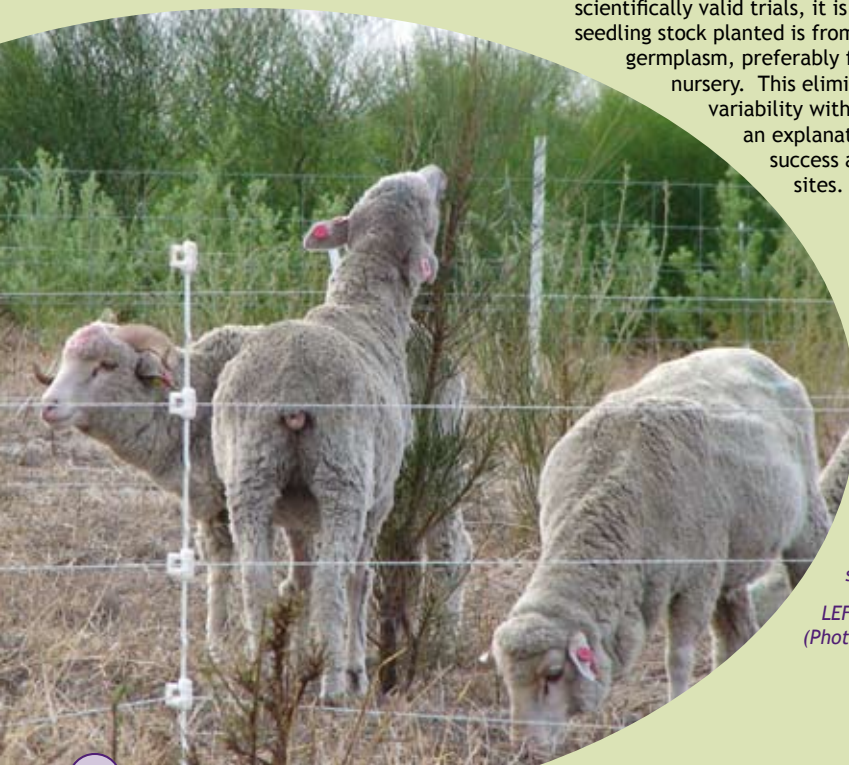
Expanding the knowledge base

“Everyone, including us, immediately knows one site is not enough, but we had to start somewhere and begin to build up information on the shrubs from a relatively low knowledge base,” Dr Revell said.

There are, however, many factors to consider in establishing more test sites. There are questions on what plants show most potential and warrant further research. Weed risk needs to be assessed (see *Focus on Perennials Issue 1*) and the plants need to be available.

“We sent out a letter of invitation to catchment, NRM and producer groups to see if there was interest to get some support – money, labour, land,” Dr Revell said.

The response was positive and nine groups will now be involved in the next stage of the trial. Other groups have indicated intent to participate in due course.



ABOVE: Dr Jason Emms will work with farmers to establish and manage trial native shrub sites. (Photo: Greg Lawrence)

LEFT: Sheep eating Allocasuarina on a trial site. (Photo: Melissa Groves)

One of the groups that will be involved is South Coast Natural Resource Management Inc, based in Albany, Western Australia. The group's Chief Executive Officer, Rob Edkins, said they heard about the research work and wanted to be involved in the more broad-scale trials to see what options may be available to the South Coast region. The group hopes to get a broader suite of economically viable perennials, suitable for a range of land units that will provide more options for land managers to generate income.

Regional trial sites

Across WA, SA, Victoria and New South Wales, groups will work on 11 regional trial sites (one group has three sites), with each group contributing \$10,000 per site. The money will fund collecting seed and plant material for propagation from the *Enrich* test site, the cost of a nursery to propagate seedlings, and dissemination of the tubestock to the groups.

The research team, including Dr Jason Emms at SARDI, who has been managing the plant evaluation work, will maintain direct contact with the groups and assist in information flow, from site selection and establishment to monitoring the performance of the plants.

A standard set of procedures has been prepared for the groups to follow for planting, managing and measuring the sites. This will help minimise the variation across such a range of sites and operators and maximise the information gained.

"The quick transition to regional trials has provided a challenge in acquiring enough germplasm to accommodate the increased planting," Dr Emms said.

"Many of these perennial species don't produce seed for several years, forcing a move to use cuttings, which isn't reliable for all species."

Dr Emms will visit each group during March, to initiate contact and establish relationships.

"I will go through how to set out the trial site, discuss any issues they may have with soil preparation, and show them how to peg out the site to get an accurate experimental design," Dr Emms said.

The plants will be delivered during June and July with a plot design. It will be up to the groups to plant them out correctly, using a set of written protocols as a guide.

"There will be a set of protocols to follow. Because the groups are co-investing, they have a say as well, in terms of what they want to get from the trials. Down the track, different groups may want to take the work in different directions," Dr Emms said.

"I hope to go back and visit the groups and sites after the first year. It will be good to see the plants, rather than just get the numbers back."

Identifying suitable species

To date, 60 species are being studied in the *Enrich* trials. The next phase will focus on 20 of those species. All seedlings will be grown at a nursery in SA and transported to test sites. Each test site will contain 15 species, selected for their potential suitability to the site and their low weed risk at that location.

"We have been forced to put forward some suggestions with only one year's data," Dr Revell said. "Things are being pursued on limited data."

It is clear that this is a challenge, but there is enough excitement in the direction the research to justify it. He says there are three positive things that will come from this development.

"Firstly, we are getting genuine co-learning – they (the farmers) find out more and we (the researchers) both discover things," Dr Revell said.

To illustrate this point, Dr Revell tells of a farmer who rang up and said his sheep would not eat a particular plant when it was flowering, although they had been eating

it previously. This fitted with some limited evidence from the research team. The combination of farmer experiences with the underlying science should help to make good progress in an area where there is much to learn.

"Secondly, we can get some evaluation of plant performance and livestock preferences across a range of soil types and places in the short term. We will get more robust information," Dr Revell explained.

"Thirdly, the trials will be a trigger for linking the research to the next step – where on farms should these species be planted, in what configuration, and under what management? There are some exciting opportunities to build systems that capitalise on shrub species characteristics, other complementary plant species and livestock grazing behaviour. The goal is to have functional systems – both from a biological and managerial perspective – that increase profitability while enhancing the natural resources.

"The initial evaluation trials with regional groups are as much about what they will lead to as what they are in themselves." ↓

More information

Dr Dean Revell, CSIRO
T: (08) 9333 6492
E: dean.revell@csiro.au

Dr Jason Emms, SARDI
T: (08) 8303 9602
E: emms.jason@saugov.sa.gov.au

RIGHT: Sheep grazing on the trial site. Four trial species can be seen in the photo. (Photo: Melissa Groves)

