



Have a yarn

talking salt with Gene Stone

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“Sustainable Trials”

It started out as a trial, but planting saltbush on saline land has become a must for North Quairading farmer Gene Stone.

Mr Stone is the host farmer for the Hommarjelly Creek Catchment Group and has seen his unproductive saline land become a food basket for his sheep over the past two years.

Mr Stone said he came across the Sustainable Grazing on Saline Lands program (SGSL) through a landcare coordinator and after applying for a grant on behalf of the catchment group he was granted about \$3000 for the trial of planting saltbush on saline land.

SGSL is a national program initiated and funded by Australian Wool Innovation, Meat and Livestock Australia and the Land, Water and Wool agency.

In WA the project involves the Agriculture Department, CRC Salinity and CSIRO. SGSL funds trials of sustainable grazing projects on salt-affected land.

Mr Stone said thanks to the funding he was able to plant out 9ha in saltbush in August 2004 on land he used to try and crop but had left for six years because it was unproductive. He used four varieties of saltbush: Rivermore, Old Man and South Australian types k23 and Eyres Green Giant; planting more than 3400 plants in total.





The area was divided into three test sites with two deep ripped at 482mm. Lime was incorporated at 1t/ha on one part of the trial, while the other sections had no lime added and one portion was not ripped at all.

Mr Stone said despite the variations across the trial all varieties of plants had unbelievable growth.

“Eyres Green Giant has really been a plant of unbelievable growth, with some plants measuring some 3.5m across and 1.4m high,” Mr Stone said.

“It is true what they say: saltbush is a living haystack.”

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“It is true what they say: saltbush is a living haystack.

“Had I not planted saltbush on this site its feed value would have been about zero as barley grass was all that would previously grow there.” Mr Stone said by February 2005 he was able to lock 360 hoggets on the site for a month.

He said last year's summer rains gave him 100mm in January and the hoggets had plenty of green feed in addition to the saltbush and barley, which he had planted between the rows. Hay was also available.

After January, however, the hoggets had only slightly eaten the Rivermore. *“We planted some barley between the rows of saltbush as extra feed for the stock and they seemed to take to that,”* Mr Stone said.

“I wasn't able to get the combine down the middle of some of the rows because the saltbush had grown too much.

“The stock have to have access to hay, and they drink a lot more water, but saltbush is a valuable source of feed.” Mr Stone said he planted strawberry clover and balansa clover as understorey where he could not get the combine in.

After the hoggets were removed from the site he gave 530 ewes access to it, but due to plenty of paddock feed they were not interested.

“As time progressed and paddock feed became scarce it became obvious that all varieties were being eaten,” Mr Stone said.

“The ewes came in and ate it bare, right down to the bare stem.” Mr Stone said he shut the area off to stock in May/June to let it revive.

When Farm Weekly visited the site last week there had been no stock access for seven months and Mr Stone was surprised at how well the saltbush had come back.

“I had not been down to check it - I cannot wait to use it again to see what sort of life we can get out of it,” Mr Stone said.



When he finishes harvest next week he will put the hoggets back on it. "By mid-February it will be interesting to see what they have eaten," Mr Stone said.

"It is handy to have when you are short of feed."

Because of his success with the trial, Mr Stone was interested in extending the saltbush plantation to incorporate another plot of saline land.

Mr Stone said that before the saltbush trial he had made efforts to stop the spread of saline land in the area by building a bank to protect the site from water overflowing from the nearby creek.

Mr Stone said the farm had been in the family since 1938 and he took over in the 1970s.

He generally runs about 1800 head of Merinos on his 800ha farm, and crops one-third of the land while using two-thirds as pasture.

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QUICK FACTS



Location: 19 km north of Quairading

Rainfall average: 350mm

Enterprise mix: Cropping wheat; barley; wool and sheep sales

Trial size: 9ha

Trial aim: Compare the effects of liming on saltland pastures

Saltland pasture mix: Various saltbush, clovers, medics, and Safeguard rye grass

Original vegetation type: Salmon gum and white gum

Paddock cover before trial started: Mainly barley grass with some rye grass

Soil type: mainly blue clay and medium loam

Soil pH: 4.6

Watertable: - 2.23m

Water salinity: Half seawater (3690 mSm)

Water pH: 5.7



A word from the gate...

Farming practices which apply fertiliser and remove produce cause soil to become more acid. Just as fertiliser is required to replace essential nutrients that are removed, lime is required to treat acidity.

The main causes of acidity are leaching of nitrate (from inefficient use of fertiliser or legume-fixed nitrogen) and export of alkaline produce (hay, grain, meat and milk).

Low pH in surface soil reduces the effectiveness of rhizobium symbiosis in fixing nitrogen by legumes. Soil biological activity also decreases. In subsurface soil where pH_{Ca} falls below about 4.8, the main effect is aluminium toxicity which decreases root growth and access to soil moisture and nutrients later in the season. Subsurface acidity occurs mainly on deep earthy sands and sandy loams.

To raise soil pH high quality lime is recommended. As transport costs are significant, farmers are urged to obtain product information from suppliers who belong to Lime WA Inc. and then calculate the total cost per tonne at 100% equivalent neutralising value.

Lime WA Inc. follows a voluntary code of practice which stipulates that members provide detailed information on describes particle size distribution and neutralising value.



- Particle size (fineness): The finer the product, the greater the surface area, and the faster it will neutralise acidity. Particle size distribution is based on the percentage of lime in each size range after it has passed through five different sieving screens during testing. Particles less than 0.5mm neutralise soil acid most quickly while larger particles have a longer neutralising effect.
- Neutralising value (NV): This indicates ability to neutralise acidity. NV is measured for each of the five particle sizes. The higher the NV, the greater the effectiveness. 100% NV would indicate a product equivalent to pure calcium carbonate in ability to neutralise acid.

Current recommendations are to:

- Sample pH to 30 cm in 10 cm increments on sandy and loamy soils, and to 20 cm on heavier soils to determine if there is a problem.
- Apply sufficient lime to the surface (the amount depends on initial pH and soil type) to raise and maintain pH_{Ca} at or above 5.5 in the surface and above 4.8 in the subsurface.

If calcium is required for soil structure (not pH amelioration) then gypsum should be used as it is more soluble than lime, especially at alkaline or near neutral soil pH.

*Chris Gazey Senior Research Officer,
Department of Agriculture and Food,
Northam.*

The Sustainable Grazing on Saline Lands program (SGSL) aims to support sheepmeat producers and woolgrowers profitably manage by dryland salinity on their farms.

SGSL involves building a network for testing and exchanging information, providing farmers with useful, timely and relevant information and conducting on-farm research into saltland production options.

The program operates in WA as a producer network of regional farmer groups undertaking individual sustainable grazing projects on local salt-affected farms as well as a Research & Development project through the CRC Salinity of which CSIRO and DAFWA are principal contributors.

The SGSL is a National program initiated and funded by Australian Wool Innovation, MLA and the Federal Government's Land, Water and Wool agency. In WA the project is co-funded, administered and delivered by the Department of Agriculture and Food WA, in conjunction with the CRC Salinity and CSIRO."

Further products in this series available at www.landwaterwool.gov.au

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