

# Have a yarn

**talking grazing trials with John Pepall**

## ***“Perfect fit – Trial fits with current practices”***

***A saltland grazing trial on their Great Southern property ‘Edenia’ has fitted in perfectly with the Pepall family’s existing farming practices.***

This is the opinion of John Pepall, who farms at North Badgebup, east of Katanning, with wife Andrea and parents Ivo and Rosemary.

The Pepalls are in a 325mm rainfall zone and operate a mixed farming operation comprising wheat, barley, oats, canola, lupins, field peas and Merino sheep.

They took part in the Sustainable Grazing on Saline Lands (SGSL) project from 2003.

The SGSL project is a part of national program initiated and funded by Australian Wool Innovation, Meat and Livestock Australia and Land, Water and Wool.

In WA the project involves the Department of Agriculture and Food, CRC Salinity and CSIRO.

The Pepall family wanted to reclaim full grazing productivity on barley grass country using a mix of saltbushes, perennial grasses and some annual legumes.

They aimed to use the land to help finish sheep and get them into condition as shippers.

The trial has already proven its worth, with adult shipper wethers maintaining weight and condition over a seven-week period between March and April 2006, on saltbush, tall wheat grass and limited supplementary feed.

*“The trial has fitted in perfectly with our existing practices,”* Mr Pepall said.

*“As a stand-alone practice it is not necessarily profitable – I wouldn’t go and buy a bit of barley grass country if I was getting into farming.”*

*“But integrated into existing farming practices it is very profitable.”*





In the next couple of years, Mr Pepall intends to establish more saltbush on roughly square 20 and 30ha plots in other areas of “samphire cum barley grass tidal zones”.

*“I intend to use these areas mainly for deferred grazing purposes coming out of autumn into winter, and opportunistically, depending on feed supplies, coming out of spring into summer,”* he said.

The plan to establish more saltbush is linked to the family’s decision to double the size of its flock.

Since taking over the operation of the farm from his father, Mr Pepall has already increased the number of mated ewes from 600 to 1700, mainly as a result of land acquisition.

The SGSL trial was conducted on a 40ha site, comprising four paddocks, on samphire and barley grass country.

Originally cleared in 1955 and comprising shallow duplex (14ha), clay (18ha) and loamy earth (6ha) soil types, the land was bought by the Pepalls in 1978.

Part of the land produced oats in the early 1980s before spreading salinity forced an end to cropping on the site.

In the SGSL trial, only barley grass areas, and not the samphire, were picked out for the trial.

In August 2003, glyphosate was applied to the site at a rate of 1L/ha to take out the barley grass before a scarifier was used to create a seed bed.

## **“... integrated into existing farming practices it is very profitable.”**

The land was then direct-seeded by a contractor’s Kimseed Saltland seeder with rows of old man, wavy leaf and river saltbush.

A seed mixture of perennial understorey species including tall wheat grass, *Acacia saligna* and creeping saltbush was trickled out between the rows when the saltbush was seeded.

Thanks partly to good rains within a few days of seeding, plus follow-up summer rain, the saltbush

rows established well, except on the 9.5ha clay paddock.

Mr Pepall said the clay paddock, later abandoned from the trial, had been very hard to rip up and mound, and did not wet up.

*“I think seedlings would be the way to go on heavier clay,”* he said.

*“On sandy areas I would stick with the Kimseeder – it’s so much easier.”*

Mr Pepall said that in future he would deep rip clay paddocks from February while the ground was dry, to get a clay shatter.

Although the saltbush generally established well across the trial site, the perennial understorey species between the saltbush lines were not entirely successful.

As a result, annual species were introduced this year (2006).

Department of Agriculture and Food research officer John Paul Collins said Mr Pepall was able to successfully establish a saltland pasture comprising 300 to 400kg of dry matter per hectare of saltbush and acacia.


*“This was complemented with two to three tonnes of dry matter per hectare of understorey species,”* he said.

*“This was achieved through paying extra attention to site preparation, incorporating weed control, insect control and prior cultivation.”*

Mr Pepall said the cost of fencing and water supplies at \$11,605 was very high due to the demonstration nature of the site.

**“On sandy areas I would stick with the Kimseeder – it’s so much easier.”**





*“We basically fenced in the barley grass lines,” he said.*

*“If I had done it on a commercial basis, we would have cut the fencing down by more than half.*

*“More than 100 strainer posts were used.”*

In total, the cost of revegetating the 40ha site was \$24,110, which equated to \$610 per hectare.

However, without the fencing and water infrastructure costs, the establishment cost would have been \$317/ha.

According to an economic analysis by the Department of Agriculture and Food’s Allan Herbert, revegetating saltland could be likened to purchasing adjoining pasture land.

In effect, the revegetation of the Pepalls’ trial site was “purchasing” land for about \$317/ha (without infrastructure costs).

In 2006, the areas were grazed with 535 shipper wethers, which virtually maintained their weight and condition over a seven-week period between March and April.

The sheep were run at stocking rates of up to 50DSE (dry sheep equivalent) and received minimal supplementary feed of oaten silage, barley silage, oats and lupins.

Mr Herbert said that once the understorey was established, 800 sheep

grazing days per hectare per year could be achieved on the site.

*“Assuming the value of a sheep grazing day is 10 cents, then it would take seven years to recover the development costs (\$317/ha), assuming that he gets 800 sheep grazing days per hectare per year,” he said.*

*“If production was less, then the site would only need to achieve 621 sheep grazing days per year to break even over a 10-year period.”*

The 10 cents per head per day value of grazing was derived from the equivalent cost of feeding sheep a maintenance ration of grain and hay.

Mr Pepall said one point of interest from the trial was that, while the sheep grazed this year had a mild loss in weight of about 3kg, their condition score was deemed to have remained the same.

## QUICK FACTS



**Location:** 30km east of Katanning

**Property size:** 1700ha

**Rainfall average:** 325mm (winter dominant)

**Enterprise mix:** Wheat, barley, oats, canola, lupins and Merino sheep (live export wethers and wool).

**Trial size:** 40ha

**Trial aim:** To establish saltbush on barley grass country. To reclaim full grazing productivity using a mix of saltbushes; perennial grasses and some annual legumes. To assess the feasibility of maintaining the weight and condition of adult wethers for sale by rotational grazing of saltbush paddocks.

**Treatments:** Gypsum at 0, 2.5 & 5t/ha. Sulphate of potash at 0, 75 & 150kg/ha. 4 x rotationally grazed saltbush cells.

**Saltland pasture mix:** A mix of river, old man, wavy-leaf and creeping saltbushes, *Acacia saligna*, tall wheat grass, puccinellia, Rhodes grass, Gatton panic and lucerne were seeded

**Original vegetation:** Mainly mallee eucalypts but also some moort and gimlet

**Paddock cover before the trial**

**started:** Samphire and barley grass. Only barley grass areas were picked out for the trial.

**Soil type:** Shallow duplex, clay and loamy earths.

**Watertable:** -1.03m

**Water Salinity:** 2850mS/m (approx half seawater)

**Water pH:** 5.6

**Clearing date:** 1955





## Word from the gate...

Adult livestock which are grazing saltbush, or any other low-moderate quality feed require adequate concentrations of metabolisable energy (ME) and crude protein (CP) to satisfy their maintenance requirements. Saltbush has a major deficiency in that its ME levels are typically around 6-8MJ/kg, yet a minimum of 8 MJ/kg is required for maintenance (table 1).

Another major deficiency of saltbush is its high ash levels – which can vary from 16-30%. A consequence of the high ash levels is that sheep need energy to process the salt and can only consume 600-800g of saltbush per day – the upper limit that their liver can handle.

Saltbush has moderate-high levels of crude protein (table 1). Whilst adult sheep require 8-10% crude protein in their diet, saltbush has adequate CP concentrations to satisfy the maintenance requirements of adult sheep (table 1).

Saltbush is therefore a self-regulating source of low-moderate quality feed and needs to be grazed in conjunction with an additional source of high quality feed. The main requirement of this supplement is a low salt content (less than 10%) and an energy concentration sufficient for above maintenance (at least 9-10MJ/kg).

It is important to test the quality of the feed – particularly hay and silage, and ensure that the ME



concentrations are at least 9MJ/kg. If the ME levels are below this the supplement is of no higher value than the saltbush and is of no use.

The reason that the shipper wethers on the demonstration run by the Jinka's Hill Catchment Group have maintained their weight and condition is that they had their crude protein requirements satisfied by the saltbush and their ME requirements satisfied by the supplement.

John varied the level of supplement according to how much higher quality understorey feed was available, and increased the supplement as the understorey ran out. The overall weight and condition of the shippers was maintained over the critical March–April period while paddock feed was in short supply.

	Crude Protein % dry basis	DMD % dry basis	ME MJ/kg
Wavy leaf saltbush	29.8	48.2	6.6
River saltbush	31.7	46.8	6.4
Old man saltbush	23.1	53.1	7.4
Oat hay	6.2	62.9	9.2
Oat silage	7.3	63.4	9.3
Barley silage	8.6	64.4	9.5
Oat grain	8.5	72.7	10.9
Lupins	32.3	92	13.5

Table 1: Nutritional properties of a range of saltbush samples taken from Bonnie Rock, Western Australia. Also provided are the feed values of a range of supplements used in the Jinka's Hill Catchment Group grazing demonstration. DMD = dry matter digestibility and ME = metabolisable energy

*John Paul Collins is a Research Officer with DAFWA. He has spent five years working on saltland pastures.*

"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](http://www.landwaterwool.gov.au)

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