

Saltbush more hardy than many think

Many farmers have been underestimating the ability of old man saltbush to recover from heavy grazing. In doing so, they have under-used this high-protein green fodder and missed out on potential livestock production benefits.

By Hayley Norman,
for CSIRO LIVESTOCK INDUSTRIES

Farmers using old man saltbush as a source of fodder for their sheep can graze the plants more heavily and frequently than many producers have thought was viable.

A joint study by CSIRO and the Cooperative Research Centre for the Plant-based Management of Dryland Salinity has shown old man saltbush (*Atriplex nummularia*) is much more resilient than many producers believe.

Saltbush is usually grown on saline soils in southern Australia as a fodder for livestock. The shrubs are usually grazed during the autumn feed gap, which typically occurs in Mediterranean-type climates.

Saltbush is rich in vitamin E and provides a moderate quality feed source, particularly during autumn when pastures tend to be of poor quality.

But some farmers do not graze the plants each season, believing it is better to save the feed for less productive seasons. They fear heavy grazing during autumn can limit the production of edible dry matter on the saltbushes in the subsequent season.

The study shows this fear is unfounded. Indeed, saltbushes not grazed during autumn produced similar volumes of edible biomass the following year to heavily grazed saltbushes.

At a glance

- Saltbush is commonly grown on saline soils in southern Australia as a fodder for livestock.
- The plants are rich in vitamin E and provide a moderate quality feed source during the autumn feed gap when pastures tend to be of poor quality.
- Many farmers do not graze saltbush each season, believing it is better to save the feed for less productive seasons.
- A study has found saltbushes not grazed during autumn produce similar volumes of edible biomass the following year to heavily grazed saltbushes.



Photos: CSIRO

Trials on saline soil on a property at Tammin, Western Australia, show old man saltbush can recover relatively quickly from heavy grazing.

CSIRO Livestock Industries researchers made this discovery while investigating the growth rates of edible biomass in saltbushes after heavy grazing.

Trials established

The study was based on paddock trials carried out on a property near Tammin, about 180 kilometres east of Perth, Western Australia. It was part of a larger research effort aimed at developing improved varieties of saltbush for fodder.

The researchers wanted to investigate growth and recovery rates of saltbushes subjected to heavy grazing during autumn compared with ungrazed plants.

Sixty 10-year-old saltbushes growing on saline land (the average electrolytic conductivity of the soil was 23 deci-Siemens per metre) were monitored.

The bushes were subject to similar grazing management until late March 2004, when half of the bushes were fenced to exclude grazing. At this time all shrubs were cut to a height of 900 millimetres so all were within the grazing height for sheep.

For each shrub, edible dry matter (EDM — leaves and small stems less than 2mm) was quantified using a comparative biomass

ranking method at regular intervals during the two years of the study.

The 'grazed' plot was grazed with 15 sheep per hectare each autumn until most of the biomass had been eaten.

Grazing during autumn 2004 removed about 95 per cent of the EDM. During the same period, the ungrazed bushes lost about 45% of EDM. This shows the saltbushes were susceptible to leaf drop at this time.

Good recovery

After this grazing period, the grazed shrubs recovered to have a similar level of EDM to the ungrazed shrubs by early January 2005 (see Figure 1).

Saltbush showed the highest rate of growth between July and September 2004 (4.6 grams of EDM per shrub per day). This finding was contrary to the common perception of saltbush being its most active during summer and autumn.

During autumn 2005, before any grazing, there were similar quantities of EDM on the shrubs in both plots. Unlike the previous year, the ungrazed shrubs continued to grow at 2.7g EDM/shrub/day during autumn.

Despite grazing 15 sheep/ha for an extra month during autumn 2005 compared with

autumn 2004, the net loss of EDM during grazing was only 55%.

Contrary to 2004, the saltbushes did not grow during winter 2005, with all shrubs losing at least 60% of EDM during this time. But both grazed and ungrazed shrubs recovered to produce similar quantities of EDM by early summer.

Minimal detrimental impact

The study demonstrated heavy grazing of mature old man saltbush during autumn had little detrimental impact on the amount of EDM available at the start of the following autumn.

It also suggests old man saltbush drops leaves and this can occur during autumn or spring, depending on factors not yet determined.

'Use it or lose it'

A key message for farmers who graze their sheep on saltbush on saline land is to 'use it or lose it'. There is little benefit in leaving saltbushes ungrazed as the plants often lose their leaves anyway and tend to grow slower than grazed bushes.

Although some farmers worry they could overgraze saltbush, the study found if saltbush was grazed heavily for a short period, the bushes recovered well.

Indeed, the study has demonstrated the ability of saltbushes to recover from grazing to almost bare sticks. In these circumstances, there appears to be little advantage in



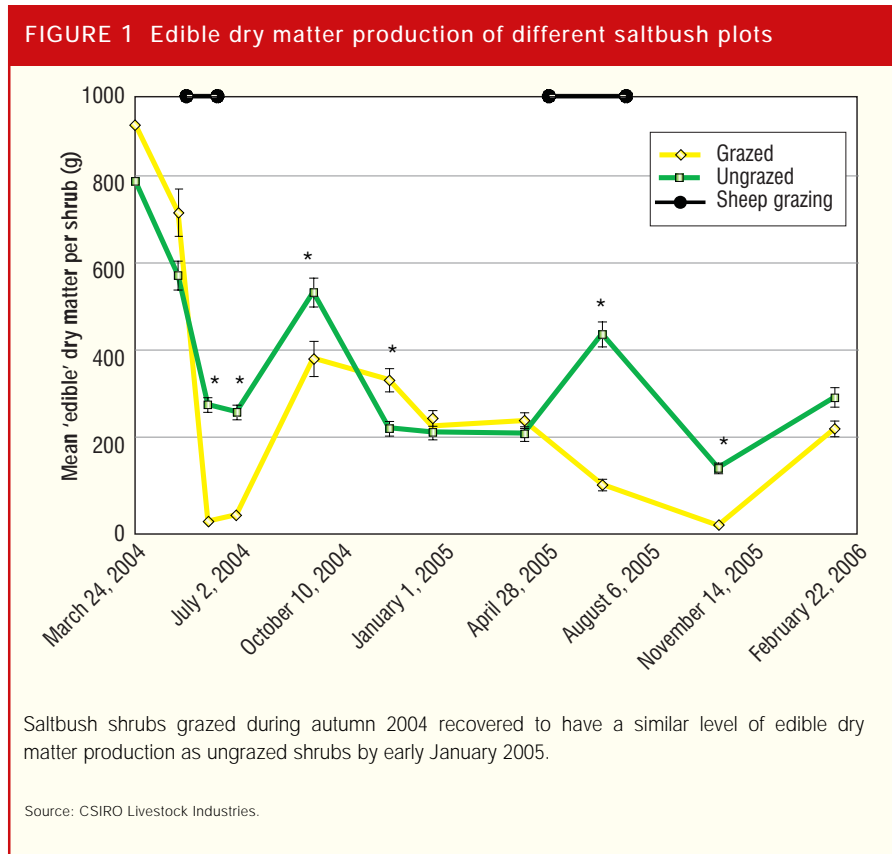
Sheep removed about 95 per cent of the edible dry matter when they grazed on a saltbush plot during autumn 2004. During the same period, ungrazed bushes lost about 45% of their edible dry matter.

deferring grazing between years. But the study has only investigated the impact of crash grazing during four years. The longer-term impact of repeated short-term heavy grazing is yet to be determined.

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For more information, contact Hayley Norman on Hayley.Norman@csiro.au or phone (08) 9333 6636 or fax (08) 9387 8991.



Heavy grazing of mature saltbush plants during autumn had little detrimental impact on the amount of edible dry matter available at the start of the following autumn. Based on this finding, researchers advise farmers who graze their sheep on saltbush to 'use it or lose it'.