pastures australia
A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

River saltbush

Scientific name(s)

Atriplex amnicola

Strengths

- Recovers well from grazing
- Good drought tolerance
- Good winter waterlogging tolerance
- Suitable for saline soils

Limitations

- Low seed viability
- Is not sufficient as a sole feed source

Plant description

Plant: Varies from a prostrate to erect medium woody shrub. Grows to about 1m in height but often spreads for 2 or more metres.

Stems: Brittle

Leaves: Dull green, 1-3cm long spear shaped leaves but much variation exists.

Fruit: 2-6mm in diameter and triangular in shape.

Seeds: Reddish flat rounded seeds.

Pasture type and use

River saltbush is a forage shrub that has been used to a limited extent in southern Australia. It has proved to be of value on saline soils to provide a forage resource particularly in times when other feed is scare. Its drought tolerance has allowed it to be grown in areas of particularly low rainfall.

Where it grows

Rainfall

River saltbush will grow in areas receiving 250-550mm average annual rainfall.

Soils

Naturally, river saltbush grows in creek beds and salt lake margins. It has potential to be grown on saline soils where some periodic inundation occurs.

Temperature

River saltbush grows predominately in the warmer summer/autumn period. Its growth stops when average annual temperatures drop below 15°C.

Establishment

Sowing/planting rates as single species

Best results with direct seeding have been obtained using a niche seeder. It is essential to test the viability of the seed that is to be used before seeding as river saltbush seed viability is low.

It has been recommended to place enough viable seeds to allow for 50 seeds per placement. Direct seeding of river saltbush has occurred with low success in the past and using established seedlings is an option. These have been planted either by hand or with mechanical tree planters. Contract planters can plant seedlings and numerous organisations have planters which can be hired to landholders.
Many different layouts and densities can be used depending on the situation, but generally shrubs have been planted as dense stands or in alleys or belts. Machinery access, establishment costs, salinity status and understorey companion species are all factors to consider in designing a shrub system layout.

Note: Establishment of shrub species is a critical step in obtaining productive stands. A number of factors are vital in ensuring establishment success. It is recommended to obtain further information on establishing shrubs from the sources listed at the end of this factsheet.

Sowing time

River saltbush should be planted as soon as possible after the break of season. Late planting will probably result in the need to supplementary water.

Inoculation

Not applicable.

Fertiliser

River saltbush is likely to benefit from fertilisation during establishment. However, it is wise to conduct soil tests to determine the baseline nutrient status before application to gauge whether a response is likely.

Management

Maintenance fertliser

There is little information available on the benefits of regular fertilisation. Responses to nitrogen fertiliser have been observed but benefits declined with time. However, it is likely that fertilisation would be beneficial especially to the companion pasture species.

Grazing/cutting

Seed production

Viability of river saltbush seed is generally very low. This is due to poor fertilisation resulting from an inadequate ratio of male to female plants or abortion during the seed maturing stage.

Ability to spread

River saltbush has limited dispersal mechanisms and historical evidence suggests very little spread occurs. It can produce root growth from stems laying on the soil surface, but spread from these means is very slow.

Weed potential

River saltbush has not become invasive despite being planted in many areas away from its native range. The low seed production of river saltbush as well as its low seedling competitive ability suggests that its weed potential is low.

Major pests

Red-legged earth mite and lucerne flea can cause significant damage to young plants, especially seedlings.

Major diseases

There is not much known about disease prevalence on river saltbush and significant problems have been uncommon.

Herbicide susceptibility

There are no herbicides currently registered for weed control in saltbush. However, control of grasses with post-emergent grass selective herbicides has been achieved. Work with old man saltbush has shown this species to be susceptible to a number of broadleaf herbicides when young, so care should also be taken with river saltbush.

Animal production

Feeding value

River saltbush has a moderate to low feeding value. It has been regarded to be adequate in crude protein content but low in energy. The high amount of salt limits the potential of river saltbush as a more useful feed and it has also been found to have a range of nutrient imbalances. Leaves have a higher nutritive value than twigs, so management to ensure the plants do not become too woody is vital. Supplementing with grain or good quality hay is necessary for optimum animal performance. The value of river saltbush as a feed source is gained through the strategic use of it during times when other feed is not available.

Palatability

Production potential

It is suitable as a maintenance feed, particularly to assist in carrying animals over periods of feed shortage. It should not be used to fatten animals or by stock with a high nutrient demand, such as lactating ewes. Supplementing with grain or good quality hay is necessary to achieve increased animal production.

Livestock disorders/toxicity

The salt content of river saltbush can be high, especially on saline sites. This will limit feed intake and increase the consumption of water. Stock must have access to adequate quantities of high quality water. Due to the amount of salt in a river saltbush diet, the salt content of the water should be below 1000ppm.

Cultivars

There are no cultivars of River saltbush currently available.

Further information

'Saltland Pastures in Australia: a practical guide' by Ed Barrett-Lennard, Department of Agriculture Western Australia

'Saltland pastures for South Australia' by Craig Liddicoat and Jock McFarlane, Rural Solutions, SA.

Acknowledgements

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Author and date

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