



**Saltland  
Pastures  
Association (Inc.)**  
for productive saltland

# S.P.A. Notes

## ESTABLISHMENT

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## DIRECT SEEDING OF SALTBUSH

### Background

Planting saltbush from seedlings is a reliable way of revegetating saltland, however it is also the most expensive option. Assuming your site conditions are suitable, direct seeding of saltbush can be a cheaper and faster method of establishment. Direct seeding is usually done using a niche seeder. These machines rip, mound and form a niche in the top of the M-shaped mound, placing a seed/vermiculite 'plop' every 2 metres or so in the niche (Photo 1). There are two versions of the niche seeder available in Australia – one manufactured by Kimseeds, the other by Chamberlain/John Deere. They are available in single or double configurations; the Kimseeds single machine costs around \$25,000 (Photos 2 and 3).



Photo 2: A Kimseed niche seeder



Photo 3: An early niche seeder (photo courtesy Arjen Ryder, Department of Agriculture & Food)



Photo 1: M-shaped mound with 'plops' of seed and vermiculite.

### Cost

Direct seeding costs are usually measured per kilometre because distance between seed placements and row widths vary from site to site. Contractors charge around \$60 per km of seeding (500 placements), so depending on density, the cost could be between \$120 and \$300 per hectare. Contractors supply seed in the cost of seeding. If you have your own niche seeder or access to one, these costs can be reduced. The price of seed depends on what species are grown. Below are approximate costs for the three more commonly grown saltbushes. The higher end prices are usually for improved varieties.

*Wavy leaf saltbush - \$50–60/kg*

*Old man saltbush - \$60–100/kg*

*River saltbush - \$60–90/kg*

Seed is available from native seed suppliers and some commercial seed suppliers.

### Site Selection

Good site selection is the key to successful establishment. If the site is too saline, the seed will not germinate. If it is too fresh, the germinating saltbush will be outcompeted by weeds and pasture; so sites of moderate salinity are best. To tell whether your site is suitable, look at the indicator species. If the site has samphire growing or is bare and scalded, then it is too saline. Look for a site with 50–100% barley grass cover.



Soil texture is also important. Duplex sites with sandy loam over clay are ideal. The sandy surface allows the salts to leach through the soil, freshening the surface and creating a suitable environment for the seeds to germinate.

### Site preparation

Site preparation ideally begins with weed control in the year before establishment. Spray top with a knockdown herbicide to prevent seed set of annual grasses. Red legged earthmites (RLEM) can attack young and germinating saltbush. If RLEM are present, spraying on your Timerite® day in the year prior to establishment will help, however follow up applications will be needed in the year of sowing.

Before sowing, make sure you have thought through the design and layout of your site. Important aspects to consider are location of fences, watering points, prevailing wind direction and access across the site. When planning the direction of your rows on steeper sites, a 'herring bone' design can ensure that water is not held back, whilst reducing the risk of water erosion.

### Species Selection

Old man and wavy leaf saltbush species are generally recommended as the most reliable for direct seeding. A mixture of species is recommended to get good establishment across varying sites. River saltbush has generally been more difficult to establish due to the requirement of this species for warm temperatures. Recent research has shown that the slow germination of river saltbush can be increased by priming the seed (soaking it in water

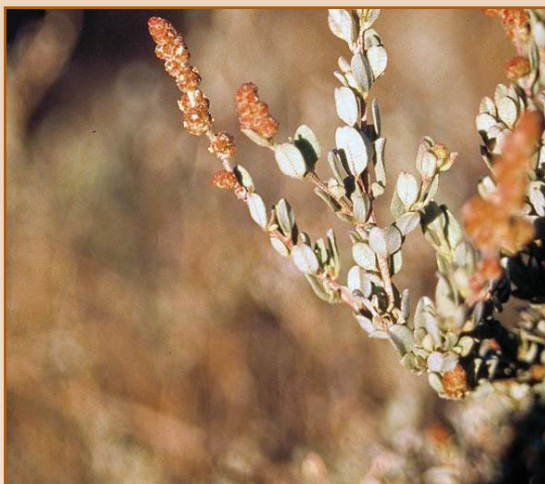


Photo 4: Male flowers (photo courtesy Saltland Pastures in Australia)



Photo 5: Female flowers

overnight and drying it again) and by the incorporation of the plant hormone gibberellic acid in the priming solution. However, both of these treatments are still experimental.

### Establishment

If your site is in an area susceptible to waterlogging, wait until the risk is reduced in early spring. After opening rains, cultivate the site to encourage a weed germination. Two knockdown herbicide applications will be needed – one about a month before sowing (glyphosate), and another two days before sowing (SpraySeed).

You will need to regularly check for RLEM and other insects for the first few months after sowing when the germinating saltbushes are most at risk.

### Calculating seeding rates

Saltbushes have separate male and female flowers. If you are collecting your own seed, make sure you are picking the female fruits (see Photos 4 and 5). The saltbush seed is between the two bracts, however not all fruits have seed inside, so it is important to check the 'fill' of your seeds. If unsure, you can get a germination test done through AgWest Plant Laboratories.

As a rule of thumb, aim for 300-400 kg of seed per kilometre of travel, with at least 2 m between placements. This will

be quite a few seeds per placement (up to 50) as saltbush germination tends to be unreliable. If you are sowing a mixture, you will need to take into account the size of the seed. Wavy leaf saltbush is less than half the size of old man and river saltbush. It also establishes more readily, so you will need to use much less wavy leaf seed in the mix.

### For more information:

Visit the Saltland Pastures Association website on [www.crcsalinity.com.au/spa](http://www.crcsalinity.com.au/spa)

Barrett-Lennard, Ed. (2003). Saltland Pastures in Australia – A Practical Guide. Land, Water and Wool, Canberra.

