

Saltbush



What is Saltbush?

Saltbush is a halophytic shrub, well adapted to living in soils with high concentrations of salt. Unlike many plant species that exclude salts during the uptake of soil moisture, halophytes both tolerate and utilise salts present within the soil profile. These physiological traits of saltbush provide opportunities for salinity rehabilitation and fodder production additional to the more traditional salt tolerant pastures.

Saltbush in Tasmania

Since the late 1980's, several species of saltbush have been trialed in Tasmania. Of these, Mediterranean Saltbush (*Atriplex halimus*), has shown the most promising survival and growth results across a range of harsh climatic and soil conditions.

Atriplex halimus is a short stemmed shrub that can grow to two meters tall if left ungrazed. It is well adapted to drought and saline conditions and can grow on a variety of soils. Although not suited to waterlogged or acid soils, successful establishment on slightly acidic and waterlogged soils has been achieved in Tasmania. Persistence and in particular resilience to grazing under these conditions is currently being monitored.

Establishment Options

There are 2 available options for the establishment of *Atriplex halimus* in Tasmania. These options, which are likely to be influenced by site conditions, long term goals and available finance, are;

1. Direct seeding
2. Planting plugs and seedlings

Direct Seeding

Direct seeding of *Atriplex halimus* has been very successful and shown good persistence since 1994 in Hamilton, southern Tasmania. While soils were classed as non saline (<2dS/m), the soils were very shallow and the sites experience severe winds, frosts and low rainfall.

Saltbush established using the direct seeding technique was incorporated with seed of other mixed native trees and shrubs, now forming highly effective shelter belts. This may have aided germination and survival.

For maximum germination rates when direct seeding, it is critical to use fresh seed, to wash the seeds to remove excess salt accumulation within the seed husks and, to prevent deep burial of the seed within the soil.

Planting Plugs and Seedlings

The establishment of saltbush plugs and seedlings in both non saline and saline sites across Tasmania have shown very good initial growth and survival rates. Persistence and resilience to grazing however are yet to be observed. Plugs, due to their small stature (2 – 4 cm), are relatively inexpensive but this is offset by the necessity to protect with guards at the time of planting. The guards provide protection from birds and other grazing animals but also offer protection from harsh winds and frosts that often occur during the months of September and October.

Seedlings which may range from 15 – 30cm in height are more expensive than plugs and are more likely to survive without the necessity to guard them.

Resources	Cost (\$)
Plugs	0.50
Seedlings	1.50
Milk cartons and stakes	0.33
Mound Plough	40 /ha

Approximate costs at time of printing.

If sites are subject to periodic waterlogging, it is highly recommended that mounds are constructed using a mound plough during dry conditions. This prevents smearing of soil surfaces and allows winter rains to leach salts from the mounds prior to spring planting. Mound ploughs are available for hire through Private Forests Tasmania.

When guarding saltbush plugs, it is highly recommended to use milk carton guards with bamboo stakes. These are the cheapest alternative, are quick and easy to erect and provide the best form for shrubby growth as the guards naturally break down over time.

Weed Control

Good weed control is imperative for the successful establishment of saltbush, whether direct seeding or planting plugs or seedlings. Sites should be grazed hard the year prior to establishment and appropriate herbicides applied both pre and post planting. Depending on the location of sites, guarding young plugs and seedlings may also provide protection from herbicide sprays if adjacent to agricultural and cropped soils.

Grazing Management

It is recommended that grazing of saltbush be prevented within the first 12 to 18 months of establishment, followed by a light grazing to help increase stem numbers on shrubs. Subsequent grazing may then occur on an annual basis depending on site conditions. Although limited data is available for *Atriplex halimus*, other saltbush species once fully established can be grazed heavily, defoliating shrubs by up to 95%. Recent mainland trials have showed that plants are best grazed and used, than left un-grazed. Un-grazed plants naturally lost 45% of leaf matter yet produced the same edible dry matter the following year as those defoliated to 95% via grazing.

Nutritional Benefits

Along with the benefit of supplementary green feed during dry summer and early autumn months, research conducted on various saltbush species has shown increased vitamin E levels within sheep. This helps to protect them from a muscle wasting disease called myopathy, therefore reducing the costs for nutritional supplements. Grazing of sheep on saltbush has also provided longer shelf life of meat.

Environmental Benefits

The ability of saltbush to tolerate and utilise saline soil moisture provides additional benefits to landholders through potential long term environmental and aesthetic improvements.

Saltbush established in widely spaced rows has been shown to lower watertables and therefore help remove/flush salts from shallow soils. In doing so, this allows for naturally regenerating pastures to grow, or for salt tolerant pastures to be established. Under such circumstances, this has provided both economic and environmental benefits to landholders through increased carrying capacity, additional clean wool growth, reduced need to supply additional supplementary feed, improved soil quality, reduced waterlogging and decreased saline runoff. It has also been reported that the stands of green saltbush, or “living haystacks”, is also visually stimulating for landholders in dry and saline environments.

The Future of Saltbush in Tasmania

Through a number of trials established in the north, south and east coast areas of Tasmania, there is proven success in the establishment of *Atriplex halimus* in both saline and non saline conditions. Future trials and demonstrations however need to determine the resilience of saltbush to grazing over the long term, the ability of plants to survive in waterlogged conditions and the cost benefits available to landholders.

Every effort to date has been made to ensure the highest survival of saltbush plugs planted in saline conditions. Further trials could be established to determine the ability of plugs to survive in large plantings without guarding. Single plugs have survived without guarding and have grown with beautiful rounded shrub form, but can this be achieved in large plantings?

With increasing numbers of centre pivot irrigators across Tasmania’s agricultural regions, there may also be a role for saltbush in managing saline areas under pivot irrigation.

Saltbush Suppliers

Taz Wild Plants, based at Bonneys Plains in the Fingal Valley, are suppliers of *Atriplex halimus* plugs and seedlings. Cuttings are taken from plantings that were established in the Campbell Town region many years ago and are well adapted to cold and frost conditions. Saltbush orders should be made well in advance to allow for cuttings to be prepared with sufficient root and shoot growth suitable for planting. Finally, it is important to organise your order delivery with preferred planting times for your region as plugs in particular, can become root bound very quickly.

If you are interested in direct seeding, saltbush seed can also be purchased from Taz Wild Plants.

For other potential suppliers of saltbush seed, contact your local NRM Region. There are several well established stands in some of Tasmania’s saline regions where landholders may be interested in collecting and selling seed.

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This Technote is one of a series produced as part to the Best Practice Salinity Management Project.

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