

# Establishment & utilisation of saltbush-based pastures

A collection of observations and tips from Hayley Norman & Matt Wilmot, CSIRO

**Get the right plant in the right place.** Shrubs vary in their preferences for rainfall, soil types, salinity and waterlogging. While there are expensive ways to characterise new sites, observation of the landscape, previous yield maps and volunteer plants will often give you the clues you need to get the right shrub in the right place. Start with your 'better' marginal land as it's easier to get shrubs established and it returns higher profits. Saltbush will not survive prolonged waterlogging and areas of bare salt scalds and samphire may be too far gone for establishment of shrubs (a great way to waste money). River saltbush is more tolerant of shallow water tables than old man saltbush

**Expense and risk are greatest during establishment so take care.** While saltbushes are tough (they are found across the semi-arid zone of Australia) this does not mean establishment is easy. From an ecological perspective, long-lived trees and shrubs don't want competition from offspring and recruitment is often linked to unusual events. Establishing directly from seed may be cheaper but it is much more risky than planting nursery-raised seedlings and grazing may be delayed. Seeds are very small, don't respond well to drying out, are not salt tolerant and are easily killed by bugs and competition with annual weeds. Direct seeding is more likely to be successful in areas with reliable summer rainfall. If you are using nursery-raised seedlings ensure that you have prepared a good planting environment. Tree planters that rip (for ease of root penetration), scalp weeds and create a water holding furrow are ideal.

**Watering plants a couple of times in their first summer may not be silly.** Ideally, you will have good spring rains and a couple of summer events during the establishment year. If you experience an unusually dry summer it may be worth giving the seedlings a drink with a fire unit. It's much less cost and effort than replanting!

**Don't waste money planting them too densely.** Saltbushes grow when water is available; if they are competing for water you simply get less biomass per shrub. In the low to medium rainfall zone, 700 plants/ha is plenty. In higher rainfall zones or where you have a shallow water table that is not too salty, you may want to plant up to 1000 stems/ha. Remember that you also need to be able to check and muster livestock.

**Don't forget the understorey.** Shrubs are not suitable as 100% of a diet due to salt, minerals and secondary compounds. The understorey is critical to profitability. If the land is capable of supporting an annual pasture, particularly an annual legume, put this in (with appropriate pest and weed control) before planting shrubs.

**Use it or lose it.** You can't 'save saltbush up' from one year to the next as a living haystack. The growth rate of shrubs will slow as they start to flower and shrubs will also drop leaves in autumn if water stressed. Heavy annual grazing of shrubs will keep the majority of leaves within easy reach for the sheep. Saltbushes are best grazed with a high stocking rate for a short period (crash grazing) set stocking is not advisable.

**Don't set and forget.** Saltbush needs time to recover – at least 6 months if you grazed it very hard during autumn. In mixed stands, short grazing durations will reduce the risk of killing preferred genotypes.

**Supplement or complement.** Sheep and cattle can't maintain liveweight by saltbush alone; they simply can't eat that much salt. Saltbush should only form about 30-40% of the total diet. They need extra roughage and energy to meet their requirements and optimise utilisation of the shrub. Reproducing ewes and growing lambs will need grain supplements and/or good quality hay. Understorey and crop stubbles can be useful but be ready to feed hay or grain when the sheep have picked out the good stuff.

**Provide good, easily accessible water that is not too hot.** Dried saltbush leaves are one quarter salt and a sheep on saltbush in summer can drink as much as 10 litres of water per day. Think about the water supply (the fresher the better) and the temperature of the water at the trough (bury the poly pipe to reduce the temperature).

**Vitamin E for animal health and meat quality.** Saltbush contains high levels of antioxidants such as vitamin E. This is often lacking in autumn. As little as two weeks of saltbush exposure has been shown to bring the plasma vitamin E level of weaners above the critical threshold. Shelf life of meat improved by reducing the rate of browning.

**Wool growth and quality improved.** Saltbush is high in crude protein and sulphur – both essential for wool growth and staple strength and often lacking in autumn. The salt content of saltbush may increase wool growth by a further 10%.

**Watch your lambing ewes carefully.** They need supplementary energy when grazing saltbush. Mineral imbalances may cause problems and for the ewes this can include calcium deficiency. Sometime ewes can get stuck while lambing however the shelter is great for lambs

