Establishing forage shrubs

Shrub-pasture systems can reduce farm business risk, provide a level of predictability for annual feed budgets and offer a source of productivity in Australia's low rainfall mixed farming areas. Forage shrubs protect and shelter soil, crops, pastures and livestock, and provide a habitat for birds, reptiles and insects, with benefits spanning both livestock production and natural resource management.

Site preparation

The most common approach for shrub establishment is planting seedlings. Most local nurseries or tree growers can supply forage shrubs. When using seedlings, pre-order shrubs from a supplier around November or earlier the year before.

Careful paddock preparation is the most important aspect when establishing forage shrubs. Select the paddock the year before planting so that weed control can start well before planting. Weed control in the crop or pasture the year before, and a light cultivation after the break next year followed by non-selective herbicide, are key strategies. Scalping, where the surface soil along the shrub row is removed along with weed seeds, can also be worthwhile.

Planting

Before planting, deep rip the soil to 30-50 cm along the shrub row to allow seedlings easy access to the sub-soil. Carrying out deep ripping 2-3 months before planting gives the soil time to settle and creates a furrow that harvests water. Mounding is an important strategy to avoid problems in areas prone to waterlogging.

Shrubs should be planted after the break of the season, once weeds have been effectively controlled. Frost can kill young shrub seedlings; in frost prone areas, consider planting later in the season when frost risk is lower. Always use seedlings that have been hardened off and have experienced some frost prior to planting.

Seedlings should have well-developed root systems and strong stems. Soak seedlings in water immediately before planting. Use commercial contractors or a tractor-mounted tree planter. Do not plant if the soil is dry. Watering after planting can be an option but is time consuming. Grass-selective herbicides can be used after shrub planting but there is insufficient evidence to support the 'over the top' use of broadleaf herbicides.

Direct seeding is more cost-effective than using seedlings, but is less reliable and not suitable for all shrub species. Direct seeding of forage shrub species including old man saltbush, rhagodia, ruby saltbush and thorny saltbush has been successful in some situations, but results can be inconsistent (spring and summer rains are needed). Assessing the viability of seed with a germination test before seeding is essential.

Seeds can be planted with various models of tree seeders. To obtain an adequate density of shrubs, use a planting rate of 10 seeds or fruit per metre.

Establishing shrubs

Grazing management

Following the establishment year, shrubs should not be grazed for at least 12 to 18 months. First grazing should be short and sharp, monitoring plants to ensure none are being pulled up by livestock.

Grazing management in mixed shrub systems has often been considered difficult, with the most palatable species commonly being over-grazed. However, by considering the nutritional experiences of livestock and their potential to 'learn' about novel feeds, it has been repeatedly shown that grazing mixtures of forage shrubs (with or without pastures in the mix) is not only possible, but also productive. Recent research has shown that young sheep can grow up to 200g/head/day without grain supplementation during autumn in a diverse shrub–pasture paddock.

Establishment checklist

- Select paddock the year before planting.
- If possible control undesirable species while promoting any pasture seedbank that may exist.
- Choose the desired planting layout and calculate the number of shrubs needed.
- Order shrubs with the supplier by November the year before planting.
- By March the year of planting, deep rip the rows to be planted.
- Before the break of season organise a contract planter or the use of a planting machine.
- Carry out scalping or mounding along the shrub rows after the break to minimise the erosion risk.
- Use a non-selective herbicide along the rows after weed germination.
- Ensure seedlings are strong with a well-developed root system.
- Soak seedlings immediately before planting.
- Plant seedlings into moist soil achieving good contact between roots and soil.
- Do not graze for 12-18 months.
- Graze with short sharp grazing's only

Australian Government Department of Agriculture, Fisheries and Forestry | Future Drought Fund | mallee catchment management authority | Mallee Sustainable Farming | ROBUST MALLEE FARMING SYSTEMS SUSTAINABLE, INNOVATIVE AND PROFITABLE

This project is delivered by MSF and supported by the Mallee Catchment Management Authority with funding from the Australian Government's Future Drought Fund.