

ANNUAL LEGUMES

DRYLAND SALINITY NOW SERIES PRODUCED BY THE COORONG TATIARA LOCAL ACTION PLAN

Background

Several annual legumes (clover and medic species) have low to moderate levels of salinity tolerance and can be utilized in mixes depending on the situation.

The key thing to determine when establishing suitability of a legume is not only understanding the salinity levels, but also the likelihood of waterlogging as some species have waterlogging tolerance as well and others don't.

Site Suitability

- Cultivar selection within each species will vary depending on annual rainfall received; select the correct one based on rainfall zone
- Salinity levels & waterlogging level dependent on species; a guide is given below in Table 1 of tolerances to waterlogging and salinity

PROJECT DETAILS

Responding to Dryland Salinity NOW
Recommendations for a new audience

Funding Body

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Table 1. Annual Legume Tolerances to Salinity and Waterlogging²⁰

		Salinity Levels ECe (dS/m)				
		Slightly Saline	Moderately Saline	Highly Saline	Severely Saline	Extremely Saline
		2-4 dS/m	4-8 dS/m	8-16 dS/m	16-32 dS/m	>32 dS/m
WATERLOGGING LEVEL	Low		Barrel Medic Snail Medic Sphere Medic			
			Burr Medic			
	High	Balansa Clover Persian Clover Shaftal Clover				
			Bokhara clover / white sweetclover			
		Messina				

Establishment

Annual legumes are best established in late autumn – early winter; after the natural rainfall has flushed the salts through the profile (to 20-30cms) but before cold conditions occur. Waiting for a weed germination will also aid in weed control. Table 2 shows recommended sowing rates when seeding as a blend.

Legumes should always be inoculated with the relevant inoculum prior to sowing.

Good insecticide control is necessary in the establishment year; particularly to control damage from Red Legged Earth Mite and inoculation of the seed with rhizobia is required.

Table 2. Legume seeding rate on saline soils when sown as a blend.

Species	Sowing rate (kg/ha) in a blend
Balansa Clover	1-2kg/ha
Nitro Persian Clover	3-6kg/ha
Scimitar Burr Medic	2-3kg/ha
Messina	5kg/ha

Nutrition / Fertiliser Requirements

- Soil pH:
 - o Soil pH should be greater than pH 5.5 (CaCl₂) when establishing annual legumes. If the pH is lower than this, then lime should be applied the year before establishment to ensure that the soil acidity issues is addressed.
- Phosphorous and Potassium:
 - o Ensure that levels are adequate prior to planting and if low, address with a suitable fertilizer application.

Grazing Management

The annual legumes should not be grazed until they are established and won't pull out when grazing occurs. Grazing pressure should be reduced around flowering; particularly in the first year to allow adequate seed set for future regeneration.

Additional Considerations

Salinity levels and waterlogging can vary greatly over very short distances within paddocks. A mixture of species is recommended to be sown in a blend when trying to reclaim saline areas to try and reduce the impacts of this variability. The best adapted species will establish in those parts of the landscape that suit them best.



Fig 2. Scimitar burr medic on the edge of a scald, Cooke Plains, 2017



Fig 1. Nitro Persian Clover on the mid-slope of a scald. Cooke Plains, 2017