

## Saltland Agronomy Update for the Upper South East, S.A.

### 3. Saltland Pasture Recommendations

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#### ***Salinity tolerance of crops/pastures***

A general reference point is the attached crop tolerance table for salinity. The figures given are ECe's. To compare your soil test results to this table, you will need to convert the ECe value reported in your soil test for the top 10cm. To do this refer to the factsheet 'Soil Salinity Testing' for how to convert to ECe and interpretation of salinity results. A subsoil (10-30cm) composite soil sample can also help get the full picture, particularly if there have been recent rains.

#### ***Salinity Sampling***

A saltland agronomist is currently available to assist landholders in the region to undertake soil salinity sampling and interpret results. Salinity sampling is strongly recommended as saline plant indicators can also be indicators of waterlogging. Landholders can soil sample themselves using a soil kit available from the Keith Primary Industries Office (8755 3166).

#### **SUITABLE PASTURE SPECIES**

##### ***Puccinellia***

It is recommended to sow severely affected salinity sites to puccinellia at 4-10kg/Ha, depending on the level of salinity and the rate of pasture establishment required (it will thicken each year if allowed to seed). Puccinellia can also be sown successfully on moderately saline areas, but is unlikely to persist against competition from strong annual ryegrass populations and does require good control of barley grass prior to sowing. Strawberry clover complements puccinellia, but balansa and persian are also used quite successfully with it. More information is available on the establishment and management of puccinellia (refer to the brochure 'Puccinellia, Perennial Sweet Grass').

##### ***Tall wheat Grass***

Tall wheat grass can be sown on more moderately saline soils although is rarely the main pasture choice. It can be used to advantage in undulating paddocks. If tall wheat grass is included in the mix it will colonise a niche area of slightly higher ground, often replacing silvergrass. Phalaris has also been used for this purpose in areas of lower salinity again.

The recommended sowing rate is about 15kg/Ha is sown alone (4-5kg/Ha in a mixture) however if cost is prohibitive it can be sown at half the rate and allowed to thicken. The thicker the better if tall wheat grass is to be sown as the main component. Balansa clover complements the tall wheat grass system

well by providing winter feed. More information is available on the establishment and management of tall wheat grass (refer to the factsheet 'Establishing and managing tall wheat grass in saline soils for productivity' by Chris Nichols, Natural Resources and Environment, Victoria)

### ***Other Options***

Other low to moderate salinity tolerant plants that can be suitable options include annual ryegrass, strawberry clover, balansa clover (Frontier clover is the best choice here). Burr medic such as Santiago has been performing quite well in salinity tolerant clover trials. Persian clover doesn't seem to be regenerating so well under salinity stress but seems to regenerate better in the 'wetter' areas. Early flowering options such as Nitro and Prolific would be the best options. Note crops (such as wheat and canola) are relatively salt tolerant but can be significantly impacted by waterlogging. Phalaris tolerates only low salinity.

### ***Rehabilitated land along drainage lines***

This is another situation and salinity tests for the topsoil will normally show little salinity if any in the topsoil in close proximity to the drain almost immediately. However salinity may still be present further away from the drain. Salinity testing can be of use. It is useful to pH test these areas as pH values have frequently been alkaline to strongly alkaline even after the leaching of salts. Depending on the soil profile, pastures may also suffer summer moisture stress and winter waterlogging.

Sodic subsoils have also been found. The application of gypsum may improve the permeability of this layer.

Suggested pasture species are phalaris varieties with waterlogging tolerance, annual ryegrass, balansa & persian clovers and burr medic which should be able to handle the pH levels. Puccinellia and tall wheat grass may continue to have a place in these areas if waterlogging is still a regular occurrence.

*Further Information, factsheets and brochures from Tracey Strugnell : Saltland Agronomist Combined South East Soil Conservation Boards, on 8755 3166 ; OR Keith Primary Industries Office*



The Natural Heritage Trust funds the saltland agronomy program and is managed by the Lacedpede-Tatiara Soil Conservation Boards, Saltland Solutions Inc., the Coorong and Districts Soil Conservation Board and Primary Industries , S.A.

Note : These are general recommendations for the Upper South East of South Australia and are not wholly guaranteed to be the best option for your system. For further information on a specific situation contact the Saltland Agronomist. This information sheet was last updated on the 6/2/01