

# SGSL TRIAL SITE SUMMARY #4



## PUCCINELLIA ESTABLISHMENT & MANAGEMENT

### Waddikee/Balumbah Catchment Salinity Management Group, Darke Peak, Eyre Peninsula

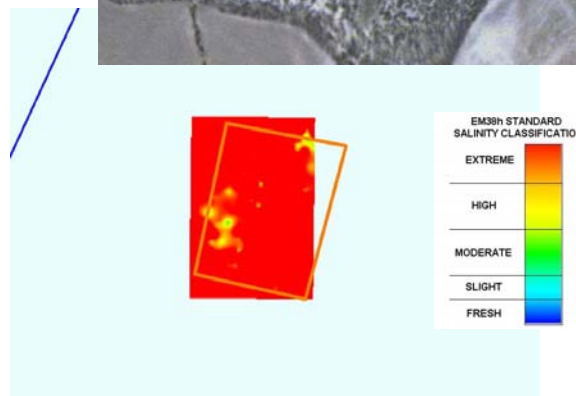
#### Research Objectives

To gain better information on:

- Establishing puccinellia pastures on highly saline ground.
- Good grazing management.
- Best practice management for optimum plant growth.
- Effective weed control of succulent weeds, which impede pasture establishment.

To trial new potential saltland species (including rape and turnip).

- Species were monitored for persistence and grazing potential.



Aerial photo & EM survey.

#### The Trial

- Prior to the trial an existing but low productivity saltbush stand was removed.
- Prior to establishment, a winter clean knockdown herbicide (2L/ha Sprayseed®) and insecticide were applied.
- Puccinellia (5kg/ha) and Frontier balansa clover (5 kg/ha) were sown through a small seeds box on the back of a 24 row combine, with finger tine harrows providing a light covering.
- Sowing was undertaken during winter of 2003, 2004 and 2005.
- Fertiliser was also applied in the establishment phase: 40kg/ha urea in the 1<sup>st</sup> year and 50kg/ha 18:20 DAP in the 2<sup>nd</sup> year.
- Following establishment in 2005, 3 strips were sprayed out and sown to potential fodder crops, including rape and turnip.

#### Fast Facts

**Location:** Darke Peak, Eyre Peninsula

**Soil Type:** Sands/ loams over clay

**Rainfall:** 325mm

**Pasture Base:** Puccinellia

**Landscape:** Saline flats associated with an ancient salt lake system

## Results

- In 2003, establishment failed due to non viable seed. For future efforts, germination testing of seed will help save heartache.
- There was an unexpected germination of new saltbush seedlings, following disturbance and removal of the previous saltbush stand.
- In cultivated areas, very dense growths of curly ryegrass occurred, compared to undisturbed ground. Controlling this weed was a problem in amongst establishing puccinellia.
- In 2004, drought prevented successful establishment.
- In 2005, puccinellia was established however a dry year resulted in poor growth.
- Fodder species (including rape & turnip) were sown in sprayed out strips in the puccinellia. These species germinated well in the fresher (winter flushed) topsoil but did not cope with salts in the deeper root zone.



*Puccinellia has established on this highly saline site, but a dry year has impacted on productivity (photo: Dec 2005).*



*Fodder rape (sown in a sprayed out strip) germinated well but could not cope with high salinity in the deeper root zone. Puccinellia remains green in the wheel tracks due to extra moisture.*

## Where to from here?

- Further site development will rely on favourable seasonal conditions. Follow up rains are crucial to good establishment.
- Mounding of soils may be trialled to reduce salinity in the root zone, however potential moisture loss will need to be considered. Mounding may allow less salt-tolerant (but more productive) species to be established.
- Structures required for grazing (eg. fences, water points) need to be installed.
- Better control of curly ryegrass might be possible through sowing higher rates of puccinellia seed (10kg/ha) along with good weed control prior to establishment. Ensuring adequate phosphorus levels (at least 12 mg/kg, Colwell P) and periodic applications of nitrogen will also increase the competitive ability of the pasture sward against weeds. However poor seasons and failed establishment will leave ground open to invading species.
- It is believed that with the right seasonal conditions, persistence will pay off.

## Want to know more?

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