

SGSL TRIAL SITE SUMMARY #6



GRAZING AND FERTILISER MANAGEMENT OF PUCCINELLIA AND TALL WHEAT GRASS

KI NRM Board, Murray's Lagoon, Kangaroo Island

Research Objectives

- To determine the most productive method of grazing puccinellia and tall wheat grass pasture.
- To determine the most cost effective nitrogen fertiliser on puccinellia and tall wheat grass.

The Trial

- Puccinellia and tall wheat grass pastures were established on the site in 2001.
- Between Sep 2003 – Sep 2005, an 8 cell rotational cell system was compared to a set stocked area and the current grazing practice.
- In the first year, the stocking rate across the rotational and set stocked systems was 6.2 dse/ha with merino wethers.
- Changes in pasture composition, pasture heights and a number of animal performance measures were monitored (including worm counts, body weights, fat scores & wool production).
- In 2005 & 2006, 5 different N fertiliser products and rates (and 1 control) were assessed on the different grazing management areas.
- The timing of fertiliser application (urea at 48 kg/ha) was also assessed. Pasture heights were measured in 8 plots following application at weekly intervals beginning early June 2006.

Results

Grazing trial

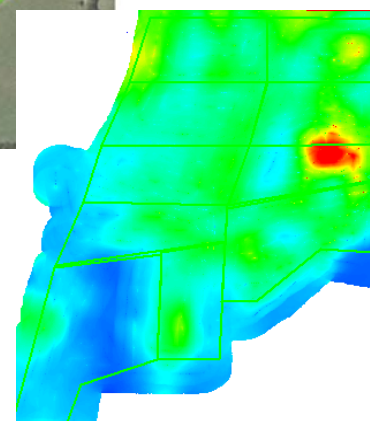
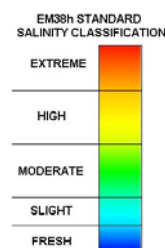
- Contrary to expectation, the set stocked paddock performed better than the rotational grazed cells.
- The set stocked area was grazed more heavily (8.6 dse/ha) in the 2nd year and still outperformed the rotational cells on a per head basis.



The 8 rotational cells are 'RC-A' to 'RC-H'.

The trial paddocks are located in an ancient lake bed landscape, around 1.2 km east of Lake Ada and 2.5 km west of Murray Lagoon near the south coast of Kangaroo Island.

Aerial photo & EM survey.



Fast Facts

Location: Murray's Lagoon, south coast KI

Soil Type: Sand over limestone

Rainfall: 550mm

Pasture Base: 2 year old puccinellia and 'Dundas' tall wheat grass

Landscape: Ancient lake bed



The saline and seasonally waterlogged site (Feb 2006).

Results (continued)

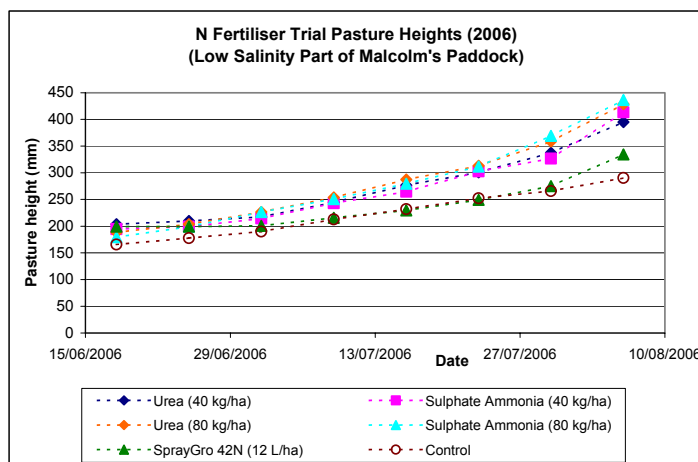
- Relative changes in pasture composition indicated that the set stocked paddock retained or improved favourable pasture species (puccinellia and tall wheat grass).
- The intensity of grazing in the rotational cells led to a decline in favourable pasture species, and shorter pasture heights, compared to the set stocked paddock.
- Low pasture heights meant that worms had a major effect on animal performance in the rotational cells.
- Set stocked animals performed better in terms of liveweights, fat scores and wool cuts.

Rotational grazing systems should be capable of extracting greater production outputs, although higher management inputs are also required.

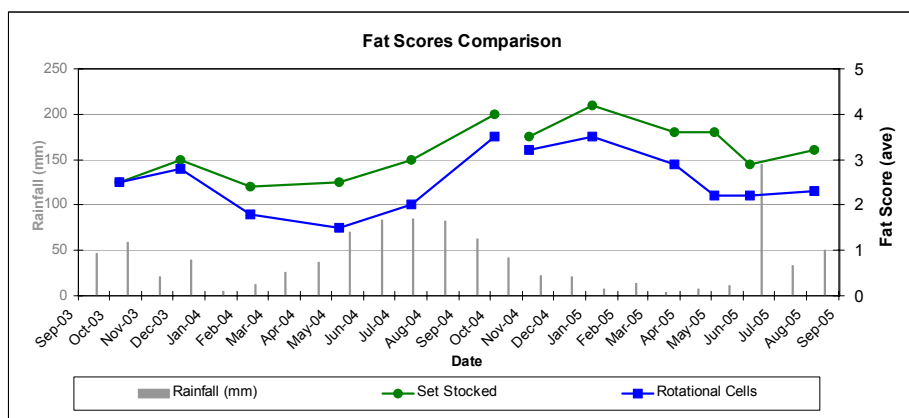
This trial has demonstrated the need for rotational grazing systems to be finely tuned, with careful attention required to balance the number of cells in the system, stocking rates and pasture growth rates. Optimising rotational systems can be a trial and error process.

Nitrogen fertiliser trial

- Little difference could be found between the better performing N fertilisers, therefore the cheapest form should be used. This was found to be **urea at 40 kg/ha**.
- Reduced responses to fertiliser were recorded in higher salinity areas. At very high salinities, applying fertiliser made plants look healthier but did not produce much more feed. Responses indicated spreading urea on sea barley grass country was justified but spreading on poorer type country may not be economic. (Other studies have shown that waterlogging is also a factor in greatly diminishing fertiliser responses.)
- Liquid N fertiliser and control plots were generally the poorest performers.
- All plots showed increased plant growth with warmer temperatures. Future trial work will look into earlier fertiliser applications, to see if plants perform better if given the chance to increase leaf area prior to the onset of cooler temperatures.



Some results from the nitrogen fertiliser trial.



Comparison of fat scores (set stocked versus rotational).

Want to know more?

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