

SHEEP PRODUCTION ON PUCCINELLIA-BASED PASTURES IN SOUTH AUSTRALIA

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Puccinellia (Puccinellia ciliata) is a winter active perennial grass that is well suited to saline and waterlogged land, growing well in areas typically inundated with sea barley grass (*Hordium marinum*) and where the soil has become bare (Herrmann and Booth, 1997). In the Upper South-East of South Australia puccinellia is usually grazed in late spring as a means of avoiding barley grass seed problems in livestock or in autumn to fill the usual feed gap and thereby reduce the reliance on supplementary feeding. Anecdotal evidence suggests that puccinellia is excellent stock feed (Herrmann and Booth, 1997), however documented production data are largely unavailable. This paper reports on a preliminary study of animal production for sheep grazing puccinellia on moderately saline soil in the Mt Charles area of South Australia (EC_e: 10-25 dSm⁻¹). The study is part of a national initiative to develop innovative animal production solutions for saline/waterlogged land that are economically and ecologically sustainable.

Four hundred and twenty 1999-drop Merino ewe hoggets shorn in mid-November 2000 grazed an approximately 40ha paddock of senescent puccinellia-based pasture from late January to early April 2001. Fifty animals were selected at random from the mob, identified by eartag, weighed and condition scored. *n*-alkane controlled release devices were inserted into 10 of these animals on 30th January to quantify intake and pasture selection. In addition, pasture herbage mass (calibrated visual assessments) and botanical composition (BOTANAL method) were determined at approximately monthly intervals to characterise the site.

At the end of January, herbage mass on offer was 2537 ± 214.6 kg DM/ha, with the pasture comprising 65% puccinellia, 11% Balansa clover, 9% ryegrass, 7% barley grass and 8% other species. By early April this had changed to 1304 ± 132.8 kg DM/ha, comprising 89% puccinellia, 2% ryegrass and 3% other species, but no Balansa clover. Intake measurements made during mid February indicate that animals were eating 1.63 ± 0.449 kg DM/head/day consisting of 93% mixed grasses (range: 74-100%), 4% Balansa clover (0-26%) and 3% other species (0-13%). Animal performance is shown in Table 1.

Table 1. Animal liveweight, condition score and wool growth, and water table height.

	Start of Grazing (30/1/2001)	(28/2/2001)	End of Grazing (3/4/01)
Liveweight (kg)	43.6 ± 0.56	44.0 ± 0.56	40.8 ± 0.57
Condition score	2.4 ± 0.09	2.6 ± 0.08	2.2 ± 0.06

*41.5mm of rain over three events fell during the second half of March

These results demonstrate that sheep can graze a senescent puccinellia-based pasture for a short period in late summer to maintain liveweight and condition score but will lose liveweight and condition if left grazing this material for too long. Unfortunately the discriminating power of the *n*-alkane technique was insufficient in this instance to adequately assess the proportion of each grass species consumed. However, the low rate of Balansa clover intake relative to its initial representation in the sward indicates that this species may be preferentially consumed at the beginning of grazing and be rapidly depleted. It is hypothesised that the decrease in animal performance by early April is due to a poorer quality sward being available to the animals. Thus the challenge is to improve pasture quality in a mixed sward with different management strategies, perhaps by increasing or maintaining the proportion of Balansa clover in the sward in late summer/autumn.

HERRMANN, T.N. and BOOTH, N. (1997). Puccinellia – perennial sweet grass. (Primary Industries South Australia).