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**EFFECT OF CONTINUOUS STOCKING
OF BREEDING EWES
AT DIFFERENT SWARD SURFACE HEIGHTS
DURING THE LATE SUMMER-AUTUMN
ON HERBAGE INTAKE AND PRODUCTIVITY**

A thesis presented in partial fulfilment
of the requirements for the degree of

Master of Agricultural Science
in Animal Science
at Massey University
New Zealand

Aderina Uli Panggabean

1995

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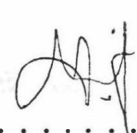
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ABSTRACT

Panggabeau, A.U. 1995: Effect of continuous stocking of breeding ewes at different sward surface heights during the late summer-autumn on herbage intake and productivity. MAgSc thesis. Massey University, Palmerston North, New Zealand. 66 pp.

Continuous stocking management is preferred by many New Zealand sheep farmers during the late summer-autumn period. At present, there are no guidelines available to farmers that define the optimum sward conditions for continuous stocking management of ewes leading up to, and during, the mating period. Three different nominal sward surface heights (SSH) (2, 4, and 6 cm) replicated twice were used for a trial with 14 mixed age breeding ewes per treatment (n=84 ewes) continuously stocked from February to April 1994. The pastures consisted of predominantly 10-year old ryegrass (*Lolium perenne*), white clover (*Trifolium repens*) and browntop (*Agrostis capillaris*). Sward heights were measured weekly throughout the trial. Herbage intakes by the ewes were determined indirectly from faecal output using chromic oxide controlled release capsules and *in vitro* digestibility of digesta samples obtained from oesophageal-fistulated sheep run with the ewes.

The average actual sward surface heights for the 2, 4, and 6 cm SSH treatments were 2.7 vs 4.3 vs 6.1 cm (± 0.05 cm (SEM), $P < 0.001$). The pasture characteristics in terms of herbage mass, dead matter content and organic matter digestibility (OMD) for the 2, 4, and 6 cm SSH treatments were: 2723 vs 3880 vs 4337 (± 204 kg DM/ha, $P < 0.05$); 69.74 vs 64.62 vs 51.37 ($\pm 2.78\%$, $P < 0.05$); 66.52 ± 0.85 vs 60.29 ± 0.90 vs $69.56 \pm 0.84\%$ ($P < 0.01$). The daily liveweight gain, condition score, wool growth rate and mean fibre diameter for ewes grazing the 2, 4, and 6 cm SSH treatments were: 103 vs 122 vs 195 (± 15 g/day, $P < 0.05$); 2.89 vs 3.05 vs 3.23 (± 0.06 condition score units, $P < 0.1$); 1.30 vs 1.26 vs 1.41 (± 0.03 mg/cm²/day, $P < 0.1$); 43.01 vs 44.07 vs 44.48 (± 0.35 microns, $P > 0.1$).

The results suggest that swards of at least at 6 cm height are required to support adequate liveweight gain and condition score of breeding ewes in the period prior to and during mating. The accumulation of weed and dead material appear to be the major problems limiting intake and ewe performance.

Keywords Continuous stocking; late summer-autumn; sward height; breeding ewes

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LIST OF ABBREVIATIONS

%	percentage
cm	centimetre
cm ²	square centimetre
Cr	chromium
d	day
DM	dry matter
DMD	dry matter digestibility
DMI	dry matter intake
DOMD	organic matter digestibility of dry matter
DOMI	digestible organic matter intake
<i>et al.</i>	and others
g	gram
h	hour
ha	hectare
i.e.	that is to say
kg	kilogram
LW	liveweight
MEI	metabolizable energy intake
mg	milligram
N	nitrogen
° 1 S	degree minute south
°C	degree Celsius
OMD	organic matter digestibility
OMI	organic matter intake
S.E.M.	standard error mean
vs	versus