

THE EFFECT OF PADDOCK SIZE ON ANIMAL PRODUCTION

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Summary

Observations at Bengworden, eastern Victoria, with Merino wethers in 1964 and 1965 showed that liveweight and wool production were similar at the same stocking rate on both large (up to 107 acres) and small (5-acre) paddocks.

I. INTRODUCTION

Subdivision per se, in the absence of grazing management, has been shown to have no effect on liveweight and wool production of animals at low rates of stocking (Southcott, Roe and Turner 1962; Suckling 1962).

In the observations described here, comparisons were made of the production of sheep grazing paddocks of 5 acres with production of sheep grazing adjacent larger areas of 40 and 107 acres.

II. EXPERIMENTAL

Two experiments were carried out at Bengworden, near Bairnsdale, in Eastern Victoria. The climate, pastures and seasonal changes in pasture production have been described by Drake and Elliott (1960, 1963).

In Experiment 1, monthly measurements of the liveweight of Merino wethers were made between August 14, 1963 and August 20, 1964 using stocking rates and paddock sizes as in Table 1. Greasy fleece weights were taken at shearing on September 4, 1964 which was 365 days after the previous shearing.

Initially, the sheep were one year-old medium-woolled Merino wethers, allocated to their treatments on the basis of body and fleece weights. The method used was to rank sheep in class intervals for body weight and fleece weight, drawing proportionate representation from each class interval for each treatment.

In the following year, from September 4, 1964 to August 31, 1965, the experiment was repeated (Experiment 2) on portion of the 107-acre paddock of the first experiment, and using sheep from this paddock. Four groups of 30 sheep each, selected as in Experiment 1, were run in four new 5-acre paddocks, while 240 were run in an adjoining 40-acre paddock at six to the acre.

TABLE 1
Details Of Experiment I

Treatment	Area of Paddock (ac)	Number of Animals per Paddock	Stocking Rate (sheep/ac)
1	5	20	4
2	107	430	4

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TABLE 2
Mean liveweights and greasy fleece weights-Experiment 1

Treatment	Liveweight (kg)		Greasy Fleece Weight (kg)
	14.viii.63	20.viii.64	4.ix.64
1	32.7	52.4	5.51
2	32.7	51.5	5.47

III. RESULTS

The results of Experiment 1, in terms of mean liveweights at the beginning and end of the experimental period and mean greasy fleece weights at shearing, are shown in Table 2.

There were no pronounced differences between the groups in liveweights or in greasy fleece weights.

In Experiment 2, the average greasy fleece weights of the four small groups on 5-acre paddocks, stocked at six sheep per acre, ranged between 5.10 and 5.22 kg compared with 5.26 kg for the group on the 40-acre paddock. The body weights of the small groups ranged from 51.6 to 53.6 kg as against 50.0 kg for the large group. The reduced body weight of the large group could be largely attributed to a severe and persistent outbreak of sheath-rot just prior to shearing and which was less serious in the small groups. Animals in the small paddocks tended to concentrate and camp along the fencelines around their paddocks, while those in the large paddocks usually camped in a few areas throughout the paddocks.

IV. DISCUSSION

The results were characterised by absence of differences in production of the flocks of different size grazing at common stocking rates. They confirm the finding of Southcott, Roe and Turner (1962) who worked at lower stocking rates.

The similarity in production of sheep grazed in different sized paddocks suggests that results obtained experimentally in relatively small plots may be extended to large acreages without qualification. Subdivision *per se* does not appear to increase level of production in the absence of any change in grazing management.

Whether it might do so in conjunction with changes in grazing management cannot be decided from these particular observations.

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VI. REFERENCES

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