SELECTIVE GRAZING AND ITS EFFECTS ON SHEEP PERFORMANCE

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A positive relationship between the clover content of grass-clover pastures and sheep performance has been suggested (e.g. Robinson, 1977). However, sheep performance is determined by the species content of the diet and its nutritive value, and may differ from that of the pasture on offer because of selective grazing. This experiment examined the relationship between the content of clover selected in the sheep's diet and that on offer in the pasture, and the effect of dietary clover content and diet digestibility on sheep performance. Perennial ryegrass-white clover pastures were continuously grazed at 25, 35, 45 and 55 weaners/ha during spring, summer and autumn.

The quantity of herbage on offer varied from 0.49 to 4.8t DM/ha, and its content of clover from 5 to 48%. Perennial ryegrass constituted all but 1 to 5% of the other species. Sheep preferentially selected clover (Fig. 1), especially if there was ample herbage on offer; at about 0.5t DM/ha, the percentage of clover in the diet (CD) was close to that on offer (CO). The intensity of selection was greatest where clover was least. A regression relationship fitted to data where herbage on offer was greater than 1t DM/ha:  
\[ CD = 11.270 + 1.554 CO - 0.016 CO^2 \]  
\( R^2 = 0.87; \ SD = \pm 4.5\% \), suggests that sheep selected about four times as much clover when only 5% was present in the pasture, but there was little preferential selection when 40 to 45% clover was present. The in-vitro organic matter digestibility (OMD) of the herbage ingested was on average 10 units higher than the herbage on offer (Fig.2).

Regression analysis showed that % clover in the diet accounted for 12% of treatment variation in liveweight change (LWC) and wool growth (WG), after the influence of the amount and digestibility of herbage on offer (i.e. DOM) was removed:  
\[ LWC = 130.9 + 89.0 DOM + 2.2 CD \]  
\[ WG = 4.85 + 2.60 DOM + 0.07 CD \]  
\( R^2 = 0.91; \ SE = \pm 0.55g/\text{hd.}/\text{day} \)

The benefits of including clover in the diet, additional to those expected because of its high digestibility, may be due to increased intake and/or more efficient utilization of its energy.


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