THE EFFECT OF HERBAGE ALLOWANCE ON THE PERFORMANCE OF LACTATING DAIRY COWS

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ABSTRACT

Three groups of six cows were offered daily herbage allowances of 53, 33, and 13.5 kg DM cow^{-1} for a 5 week period in early lactation. These allowances resulted in apparent dry matter intakes of 15.8, 14.3 and 9.6 kg DM cow^{-1} and residual dry matter yields after grazing of 1850, 1550 and 750 kg DM $ha.^{-1}$.

There were no significant differences in milk, milkfat or protein yield between the cows offered 53 kg DM cow^{-1} and 33 kg DM cow^{-1}, but the cows offered the higher allowance had greater liveweight gains, ($P < 0.1$). The group of cows offered 13.5 kg DM cow^{-1} produced significantly less milk, milkfat and protein than the other groups, and lost liveweight and body condition. There were no significant differences in milkfat production amongst the three groups during the 29 week period from the end of the experiment until the end of the lactation.

Measurements of the Nitrogen content of the herbage present before, and the herbage remaining after grazing showed that as herbage allowance increased the N content of the herbage dry matter selected by the cows also increased.

Each group of six cows consisted of three cows with a high lifetime production index (LPI) and three cows with a low LPI. Some data on the responses of cows of different LPI, to variation in herbage allowance are presented.

The results are discussed in relation to the effects of each herbage allowance on milk, milkfat and protein yields per cow and per unit area. The data shows that the achievement of high levels of production per cow as a result of offering high herbage allowances may be in conflict with the need to consider production per unit area and the agronomic needs of the pastures. Alternatively restriction of herbage allowance may limit production per cow and result in losses of cow liveweight and body condition, with possible long-term effects on lactation performance. A discussion of factors

that may affect the carry-over or residual effects from variation of herbage allowance in early lactation is included. Additionally some problems with respect to the estimation of herbage intake by the 'difference' method, and the measurement of liveweight of lactating cows are discussed.

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