INFLUENCE OF HERBAGE MASS ON THE UTILISATION OF PASTURE BY GRAZING DAIRY COWS OFFERED SUPPLEMENTS

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Grazing dairy cows reduce their intake of pasture when additional feeds are provided. The level of substitution increases as pasture allowance increases (Grainger and Mathews 1989) and may be influenced by the height of the sward on offer. The effect of herbage mass on the reduction of pasture intake when maize (*Zea mays*) silage is fed as the supplement was investigated.

Ten 5-week experiments were conducted at Kyabram over 3 years in which 2 groups of 3-5 lactating Friesian cows were offered approximately 20 kg DM/cow.day of a pure white clover (*Trifolium repens*) sward and were supplemented with either 0 or 3.4-5.0 kg DM/cow.day of maize silage. Cows were allocated to treatments on the basis of milk yield and liveweight. The amount of pasture eaten by each group of cows in each experiment was assessed by a sward sampling technique, using a rising plate meter to estimate pre- and post-grazing herbage mass. Between 20 and 50 height measurements were taken daily in each treatment and mean plot heights were then converted to mass.

Pregrazing herbage mass had a major effect on reducing pasture intake. The data from all experiments, presented in Figure 1, indicate a clear, positive relationship between level of substitution and pasture mass. These experiments were carried out between early spring and late autumn but, as can be seen from Figure 1, stage of lactation had no influence on the outcome.

![Figure 1. The relationship between level of substitution and pre-grazing herbage mass for cows offered about 20 kg DM/cow.day of white clover and supplemented with 3.4-5.0 kg DM/cow.day of maize silage (☐ early lactation; ■ late lactation). The curve is a fitted regression (100R² = 94.1)](image)

A similar result was obtained in the UK by Mayne (1991) using ryegrass (*Lolium perenne*) pastures. It is suggested that taller pastures are trampled and fouled to a greater degree than are short pastures, thereby rendering them less palatable. A primary aim of feeding supplements is to maintain pasture utilisation while maximising total DM intake. If this does not occur, supplements will become increasingly uneconomic as herbage mass increases. It is concluded that the best use of supplements will occur when pastures are short.
