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SUPPLEMENTARY FEEDING OF DAIRY COWS

A Study of the Value of Greenfeed Maize as a

Summer Supplement

A Thesis

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ABSTRACT

An experiment is described in which the nutritive value of greenfeed maize as a supplement to lactating dairy cows during the Summer dry period was investigated.

Forty Spring calving Friesian cows were allocated to one of two treatments in a randomised block design experiment. One group of 20 cows was fed on grazed pasture alone (control) on a separate 7.95 ha farmlet while the other group of 20 cows was fed a supplement of greenfeed maize in addition to the pasture from a 7.75 ha farmlet. The farmlets of both groups were divided into 7 paddocks and the cows were rotationally grazed. A 1 week standardisation period was followed by a 5 week experimental period.

The herbage present on both farmlets was estimated at the beginning of the experiment and, during the experiment, estimates of the pasture remaining after grazing were made which gave an indication of the grazing intensity.

Two crops of greenfeed maize were fed, Crop A and Crop B. Crop A had a low yield of D M , poor plant density and a high weed population. Crop B had a high plant population with thin stalks and few weeds.

Mean daily milk, milk fat, milk protein yields and liveweights were not significantly different between groups. There were significant differences between the slopes of the regression lines relating pretrial to experimental milk yields ($P < 0.01$) and milk protein yield ($P < 0.05$) of the two groups. There were significant differences ($P < 0.10$) between the slopes of the regression lines of milk yield against time of the two groups and between the low yielders of each group but no significant difference between the high yielders of each group.

The control group maintained their liveweight during the first half of the trial and lost weight in the second half of the trial. The maize group lost weight initially then increased steadily in liveweight. However, the differences in mean liveweight between groups were not statistically significant.

The high yielders lost more weight in the second half of the trial than the low yielders in the control group.

It would appear that, while the overall differences in the mean daily milk yields between groups were too small to be statistically significant, the milk yield of the control group declined at a faster rate than the maize group with the low yielders in the control group declining at the fastest rate. The weight lost by the high yielders in the control group was slightly greater than that of the low yielders in the same group. The high yielders in the control group maintained their rate of decline in milk yield similar to that of the supplemented group and this was probably achieved by a greater reduction in liveweight relative to the low yielders.

The yield of Crop B was 11,008 kg D M /ha and the digestibility varied from 71.2 - 75.4 % of the O M . Maize intake was 3.0 and 3.5 kg/DM/cow/day and utilisation 76.5 and 82.1% of the D M for Crops A and B respectively.

The control group completed two rotations on their farmlet with rotation lengths of 19 and 12 days. At the end of the experiment they were very short of pasture. The maize group had completed one rotation in 26 days and had grazed 1.1 ha for a second time. They had adequate supplies of herbage at the end of the experiment.

Supplementation with greenfeed maize permitted the adoption of a longer rotation length, a better distribution of the available pasture over the Summer period and slowed the rate of decline in milk yield in the supplemented group.

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