The importance of the amount of feed on the farm at calving to seasonal milk production

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ABSTRACT

Twelve dairy farmers were taught a system of pasture scoring in May 1981. From then until the start of calving they assessed the amount of feed on their farms at fortnightly intervals.

Milkfat production per hectare during the subsequent season was closely related to the amount of feed on the farm at the start of calving. Feed at calving was closely related to the amount of feed on the farm in May.

The data suggest that milkfat production from most dairy farms is limited by having insufficent feed on the farm at calving.

INTRODUCTION

Three basic pasture management priorities on the dairy farm during autumn and winter are to clean out pastures during late autumn to encourage ryegrass tillering, adopt a winter management that minimises pasture damage and maximises pasture growth and to achieve plenty of good quality pasture on the farm at calving.

Feed budgeting has not been a successful means of achieving these priorities for 2 possible reasons. Firstly, the relationships between autumn-winter management, amount of feed on the farm at various times and milk production have not been established. The amounts of feed that should be on the farm at various times during autumn, winter and spring are not known. Budget targets are therefore not defined and this imposes severe limitations on the effectiveness of the budgeting approach. Secondly, feed budgeting is not widely accepted amongst farmers and advisors, probably because of the mathematics involved.

If farmers are to participate and benefit from feed budgeting they need a simple system of pasture assessment with clearly defined, meaningful targets of the amounts of feed required on the farm.

This paper reports on the acceptability to a group of farmers of a simple system of pasture scoring. It also provides some information on the relationship between milk production and the amount of feed on the farm at calving.

METHODS

Twelve dairy farms in the Cambridge-Matamata area were involved. The ranges in stocking rate, herd and farm size were 2.5 to 3.6 cows/ha, 92 to 260 cows and 34 to 91 ha respectively. The farms varied widely in soil type and contour and in the contacts of the farmers with extension.

The author visited Ruakura in the last week of April and calibrated himself into the pasture scoring system used at No. 2 Dairy in which one score equals 300 kg DM/ha. Each farm was then visited during the first week of May 1981 and each paddock walked with the farmer. The scoring system was discussed and explained, so that the farmer felt confident that he was assessing paddocks the same way as the author. Each farmer was left recording forms and asked to walk the farm every 2 weeks over the winter. The final assessment in the last week of July was taken as the amount of feed on the farm at calving as all 12 dairy farms were to start calving in early August. Data on milkfat production were subsequently obtained.

RESULTS AND DISCUSSION

Pasture scoring proved to be easily understood and used by the farmers. The 12 varied in their previous extension contact and had had little or no experience in formal pasture assessment. Farmers were check calibrated during the last week of July and although there was a tendency to score short pasture slightly high and long pasture slightly low, the overall average scores were remarkably accurate. Successful pasture scoring quickly led to a better understanding and use of the 'dry matter' measurements.

Total milkfat production (kg/ha, Y) was closely associated with the amount of feed on the farm at calving (kg/ha, X) (Fig. 1).

The relationship was described by the equation:

$$Y = 111.0X - 201.1 \pm 9.90 \qquad R^2 = 0.92$$

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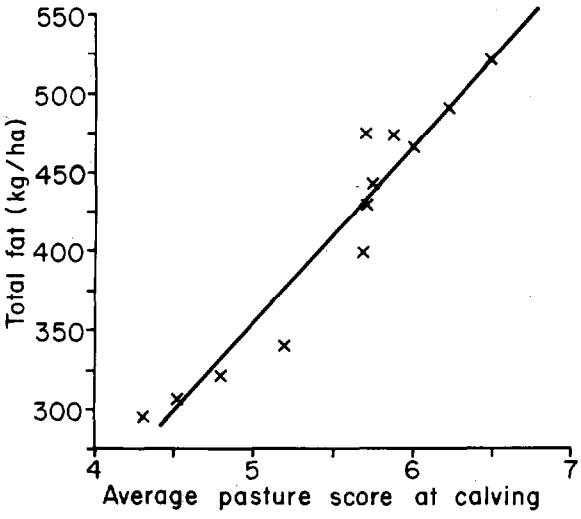

FIG. 1 Relationship between total milkfat production per ha and feed on the farm at the start of calving.

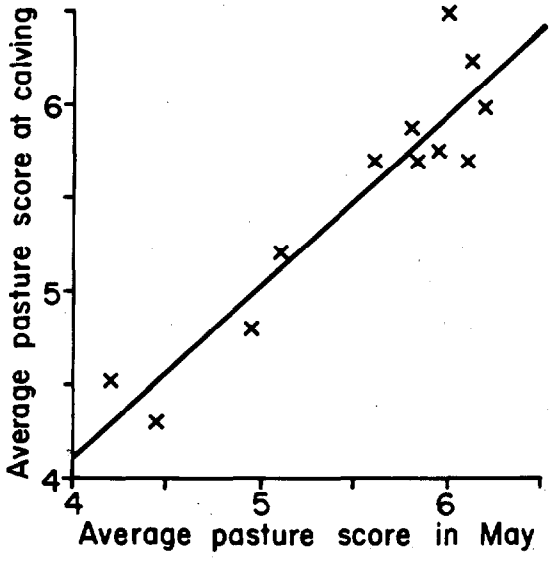

FIG. 2 Relationship between feed on the farm at the start of calving and in May.

Increasing the amount of feed on the farm at calving by 1 score was therefore associated with an extra 111 kg milkfat.

The amount of feed present at calving was closely related to the amount of feed present on the farm in May (Fig. 2). This suggests the importance, at least for these 12 farms in 1981/2 season, of autumn feed to next season's milkfat production.

There are many variables effecting total milkfat production on a farm, not least being the farmer himself but a single pasture cover score at calving proved to be remarkably accurate as a predictor of milkfat production. A further 20 dairy farmers in the Cambridge-Matamata area who were also pasture scoring during the 1981/2 season, submitted their pasture score at calving and total milkfat per ha data. Using the pasture score at calving as a production predictor, the greatest error was 20 kg milkfat/ha.

The average milkfat production levels being produced in New Zealand, given the technology available and examples of successful management techniques being used by our high producing dairy farmers in every district, is of some concern. For example milkfat production for completely self-contained farms in the Piako, Matamata and Waikato counties during the 1981/2 season was 375, 345 and 309 kg/effective ha respectively

The results of this survey in the middle of the area covered by these counties suggests that feed on the farm at calving is a major limitation to production. It appears that the vast majority of dairy farmers in these counties calve with insufficient feed of good quality to adequately feed the herd in early lactation.