

# The use of feed blocks as supplementation for the upland hill flock: (1) Improving organic ewe productivity and performance

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## ABSTRACT

Maintaining ewe performance in winter poses particular problems for organic farming in the uplands where the availability of both grazing and home produced forage may be restricted. This trial evaluated approved non-organic feed blocks as dietary supplement for ewes grazing pastures between 300 and 550 m.

*Keywords: organic farming; feed blocks; ewe performance; uplands*

## INTRODUCTION

Maintaining ewe condition and achieving a satisfactory lambing percentage poses particular problems for organic farming in the uplands where availability of both home produced forage and winter grazing may be restricted. Under current organic regulations concentrates may only constitute 40% of the total dry matter intake (DMI) and bought in non-organic supplements cannot exceed 10% of total DMI. Approved non-organic supplements such as feed blocks must show a definite benefit in terms of ewe performance to justify inclusion in the winter diet of the hill ewe.

The use of feed blocks to improve performance of hill ewes was investigated in an experiment at ADAS Pwllpeiran from November 2000 to February 2001. In this trial, 160 Hardy Speckle Face ewes were allocated to either mountain (partly improved) pastures (506 m above sea level) or middle hill (improved) pastures (400 m above sea level) prior to the commencement of tupping. These groups were then further allocated to either dietary supplement (in the form of approved non-organic feed blocks) or no dietary supplement. Ewes were weighed and body condition scored prior to tupping (beginning November), at the end of tupping (beginning of January) and at pregnancy scanning (middle of February). The potential number of lambs per ewe was also recorded at pregnancy scanning. Sward heights were also monitored throughout the trial period.

## RESULTS

The trial coincided with a period of exceptionally heavy rainfall (November) and snowfall (December). Meteorological records taken at the middle hill site show that precipitation in November & December was 410 mm which was 60% above average. Furthermore rainfall on the mountain sites is 25% higher than the middle hill sites. On grounds of animal welfare, it was decided to supplement the grazing with hay. The treatments therefore became mountain paddock with hay (MH), mountain

paddock with hay and block (MHB), hill paddock with hay (HH) or hill paddock with hay and block (HHB).

There were no significant differences in liveweight between treatment groups at the start of tupping (average liveweight was 38.9 kg) however there was a trend for ewes in the mountain treatment groups to have higher body condition scores (2.40 vs 2.09 for mountain and hill paddocks respectively). By the end of tupping all groups had increased in liveweight and there were significant differences ( $P < 0.03$ ) between the MH group (40.6 kg) and HHB group (44.1 kg). The extent of liveweight change was significantly different ( $P < 0.001$ ) between treatment groups: 1.0, 3.0, 3.7 and 6.1 kg for MH, MHB, HH and HHB respectively. At pregnancy scanning those ewes in the MH group had significantly lower ( $P < 0.001$ ) liveweights than those in MHB and HHB groups (37.1, 39.4 and 43.7 kg respectively). Ewes in the HH treatment group had a significantly lower ( $P < 0.001$ ) liveweight compared to those in the HHB group (39.2 vs 43.7 kg respectively). Overall, ewes in the mountain groups decreased in liveweight whereas those in the middle hill groups increased in liveweights. However ewes in MHB group had significantly lower ( $P < 0.001$ ) liveweight losses than those in the MH group (0.4 vs 2.5 kg respectively). Ewes in the HHB group had significantly greater ( $P < 0.001$ ) increases in liveweight compared to HH group (5.7 vs 1.2 kg respectively).

Pregnancy scanning indicated that average number of lambs carried per ewe was 1.05, 1.28, 1.25 and 1.40 for MH, MHB, HH and HHB groups respectively. Predicted lambing percentage for ewes on the hay + blocks treatment was 133% whereas for those on the hay treatment it was 114%. There was a trend for groups with access to blocks to have a greater number of lambs scanned per ewe than the groups on the hay only treatment.

The evaluation of approved non-organic feed blocks as a supplement to ewes at pasture during the mating period was made on the criteria of ewe productivity and changes in liveweight and body condition score. Although the trial was conducted during a period of extreme weather with precipitation 60% above average, which would have adversely affected sheep grazing pastures between 300 and 550 m, on each of the above mentioned criteria the results demonstrated that supplementation with feed blocks has a positive effect.

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