

Grassland Research Programme – Sust. Prod Systems & Systems Analysis
RMIS No: 5518

Title: Increasing the competitiveness of milk production in areas with high rainfall and heavy clay soil types.

Abstract

Dairy farming in Ireland depends to a large extent on the efficient conversion of grass to milk, and grass grazed efficiently is the cheapest feed available on most dairy farms. There is a large variation in the cost of milk production in specialised dairy farms in Ireland. Some of the variation in cost may be associated with variation in soil type and climatic conditions. In Ireland, the two factors that have largest influence on animal production from grassland farming are soil type and climate conditions. Therefore, one of the most important necessities is the trafficability for both animal and machinery. In the west of Ireland the high annual rainfall combined with concentration of heavy clay soils makes trafficability a major problem. On high rainfall heavy clay soils in Ireland (e.g. Kilmaley Research Farm) the potential grazing season is much shorter than on lower rainfall free-draining soils (e.g. Moorepark Research Farm). The results of previous work at the Kilmaley Research Farm indicate that the most profitable spring milk production system is based on an annual feed budget of 2.1 tonnes of DM grass silage, 2.8 tonnes of grazed grass DM and 0.5 tonnes of concentrate DM per cow at a stocking rate of 2.0 cows per hectare with a nitrogen input of 240 kg per hectare. However, an economic analysis showed that in a 468,100 kg EU milk quota scenario its profitability was 28,417 less than on a lower rainfall free draining soil. Preliminary economic modeling indicated that if concentrate supplementation could be used efficiently, allowing a higher stocking rate to be carried on the farm; this could potentially result in increased farm profits especially in a non-quota scenario. The objective of this study is to assess the biological and economic efficiency of two different production systems on a high rainfall heavy clay soil based on differences in concentrate supplementation levels and stocking rates.

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