The effect of grazing platform stocking rate on farm profit

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Summary

- The financial performance of alternative grazing platform stocking rate systems were evaluated based on the physical performance data obtained from a four year farm systems study.
- Increasing stocking rate from 3.1–4.5 cows/ha and importing additional supplementary feeds reduces farm profitability at low and medium milk prices with only marginal economic benefits at higher milk price.
- The results reinforce the necessity for pasture-based dairy farmers to improve pasture productivity to provide additional home grown feed to expand milk production profitably into the future.

Introduction

Numerous studies have identified grazed grass as the cheapest source of feed for the dairy herd. However, within the context of an expanding Irish dairy industry, access to sufficient land adjacent to the grazing platform may well become a major stumbling block for many dairy farmers wishing to increase the scale of their business. Stocking rate is a key driver of the productivity and profitability of grazing systems. Increasing stocking rates results in increased output per ha and greater levels of pasture utilisation. Some previous studies have suggested that, where increased supplementary feed is used to sustain higher stocking rates, both high output per cow and high levels of pasture utilisation can be achieved. The objective of a four year study was to investigate the economic sustainability of alternative pasture-based systems of milk production differing in terms of stocking rate, supplementary feed inputs and land availability within grazing systems.

Treatments and Results

Physical performance data from a multi-year farm systems study evaluating the effect of grazing platform stocking rate (GPSR) on pasture production and utilisation, milk production per cow and per ha, reproductive performance and requirement for externally sourced feed supplements. Two grazing platform stocking rate (GPSR) treatments were compared: HCFS (High Closed Feed System: 40 ha milking platform, 124 dairy cows, 3.1 cows/ha) and HOFS (High Open Feed System; 40 ha milking platform, 180 dairy cows, 4.5 cows/ha).

Output per ha was increased considerably by increasing GPSR from 3.1–4.5 cows/ha. However this increase in productivity was driven solely by imported silage and concentrate feed. Grass growth and grass utilisation were the same for both systems. The economic implications of the various treatments were also evaluated (Table 2).

Table 1. Effect of grazing platform feed system[1] on purchased feed requirements and milk production performance		
Feed system	HCFS	HOFS
Total milking platform, ha	40.0	40.0
Herd size, no. cows	124	180
Stocking rate, no. cows/ ha	3.1	4.5
Labour units required, no.	1.47	2.14
Purchased feeds, kg DM ha^{-1} year^{-1}		
Silage	1,917	5,796
Concentrate	1,708	3,924
Milk production performance		
Fat plus protein yield, kg	377	390
Fat plus protein, kg/ha	1,153	1,786

[1]*HCFS = High closed feed system; HOFS = High open feed system*

Table 2. The effect of base milk price and pasture productivity on farm system profitability for alternative grazing platform feed systems[1]		
Feed System	HCFS	HOFS
Net profit at 29 € c/l milk price		
per farm , €/farm	29,075	14,443
per ha, €/ha	727	361
Net profit at 24 € c/l milk price		
per farm , €/farm	-3,800	-34,837
per ha, €/ha	-95	-871
Net profit at 34 € c/l milk price		
per farm , €/farm	62,019	63,825
per ha, €/ha	1,550	1,596

[1]*HCFS = High closed feed system; HOFS = High open feed system*

The results show that increasing SR from 3.1–4.5 cows/ha and importing additional supplementary feeds reduces farm profitability at low and medium milk prices with only marginal economic benefits at higher milk price. The results reinforce the necessity for pasture-based dairy farmers to improve pasture productivity to provide additional grazable grass to expand milk production profitably into the future.

Conclusions

Increasing stocking rate on the grazing platform and maintaining animal performance with increased levels of bought in feed has a negative impact on farm profitability at low and medium milk prices. In order to maximise profitability per ha farmers must ensure that increases in stocking rate are matched by improvements in pasture productivity and utilisation.