

## **Dairy feeding efficiency for improved returns**

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### **Summary**

Dairy farmers in Northern Ireland have expanded herd size and milk output per cow as a means to improve farm profits over the last number of years. While this approach has been successful in many situations, it is also worth noting that there has been a marked decrease in feeding efficiency across many dairy farms in Northern Ireland which is having an impact on farm profitability. CAFRE Dairying Development Advisers have been delivering a series of information events and training programmes to highlight the importance of feed efficiency on dairy farms and to highlight ways by which this can be achieved. The most successful farmers tend to focus on achieving good milk yields, while still making effective use of grazed grass, conserved forage and concentrate fed.

### **Introduction**

The dairy industry in Northern Ireland has seen major changes over the last number of years, with dairy farmers expanding herd size and increasing milk output per cow. These trends are clearly illustrated on results taken from Greenmount Dairy Benchmarking, which allows dairy farmers to examine the financial strengths and weaknesses of their own businesses. For example, analysis of the “common farms”, who have participated in the programme since it started has shown that average herd size across those farms increased from 88 cows in 1999/ 00 to 125 cows in 2007/ 08, while milk yield per cow has increased from 5,959 l per cow per year to 7,015 l per cow per year over the same time period.

There are a number of reasons for this change. They include the following:

- The availability of milk quota from mainland UK farmers ceasing production;
- high land prices which limited increases in farm size and encouraged increased output per cow
- low risk of a superlevy being imposed in recent years;
- developments in dairy cow genetics;
- practicalities of accessing grazing areas;
- the cost of marginal litres of production;
- an enthusiasm shown among Northern Ireland dairy farmers in increasing milk yield per cow and adopting new methods of management; and,
- changes in herd size and milk output per cow have resulted in improvements in profitability for many dairy farmers. If the herds previously described in benchmarking had maintained output at 1999/ 00 levels compared to 2007/ 08, herd profit would be around £38,000 less at £41,375 compared to £79,530. Even assuming costs of production could be reduced on these farms by 1 ppl, profitability would still be £26,700 less.

The following paper will examine the potential performance from these systems and highlight some of the issues affecting their profitability

### The future herd

An example of what can be achieved on Northern Irish dairy units can be seen with the Future Herd, which is located at the Greenmount Campus and which is managed in partnership with John Thompson and Sons Ltd. The Future Herd is made up of 140 cows which are predominantly autumn calving. The aim of the herd is to demonstrate the management skills necessary to achieve high levels of milk production from grazed grass and grass silage. In addition the herd is managed to demonstrate best environmental practice and good animal and welfare practice. Targets for the herd and the rolling 12-month average performance to date (September 2009) are given in Table 1. Additional information can be located on the rural portal ([www.ruralni.gov.uk](http://www.ruralni.gov.uk))

Table 1. Targets and performance of the future herd

	Target	Actual (September 2009)
Milk yield (l/ cow/ year)	8,500	7,890
Concentrate (kg/ cow/ year)	2,000	1,875
Milk from forage (l/ cow/ year)	4,000	3,725
Butterfat %	4.10	4.27
Protein %	3.50	3.34
Milk solids (kg/ cow/ year)	646	601
Lifetime yield (l/ cow)	40,000	36,023
Gross margin per cow (£)	Top 15 % of benchmarked herds	704*
Gross margin per hectare (£)	Top 15 % of benchmarked herds	1,209*

\* Year ending March 2009

### Challenges facing the industry

Results from the Future Herd show what can be achieved when best practice techniques in dairy herd management are used to increase milk output per cow, while maintaining high levels of production from forage. Nevertheless dairy units in Northern Ireland are not without their problems. For example, analysis of results from CAFRE's Fertility Benchmarking programme has shown that infertility is having a major impact on financial returns on the commercial dairy farms that participated (Table 2). This in turn is creating a wider spread in calving pattern which would appear to be contributing to reductions in feeding efficiency among dairy herds.

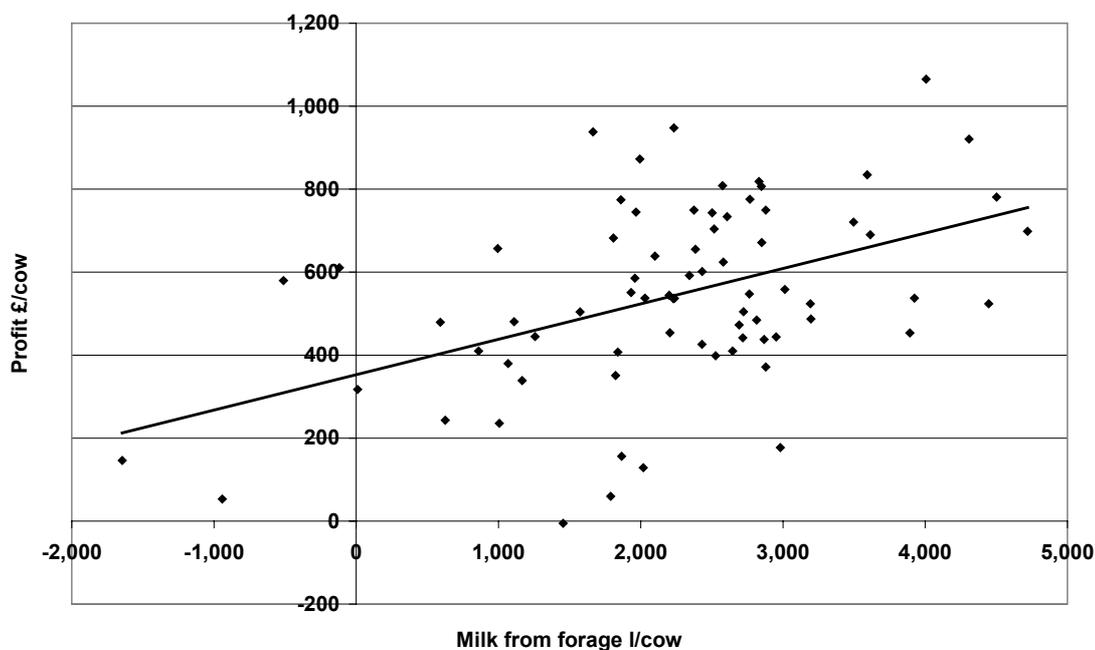
Table 2. Effect of calving pattern on dairy herd fertility performance

	Calving pattern		
	Autumn	Spread	Spring
Number of herds	11	67	12
Milk yield (l per cow per year)	7,758	7,266	5,691
Concentrate (kg per cow per year)	2,146	1,961	1,099
Submission rate (%)	72	57	70

Conception rate to 1 <sup>st</sup> service (%)	53	52	60
Total infertility cost (£)	10,903	21,162	8,804
Herd infertility cost (£/ cow)	109	211	88

Results from Greenmount Dairy Benchmarking have also shown a trend towards increased concentrate feeding at the expense of milk produced from forage. Analysis of the common farms which were highlighted earlier show that the increase in milk output of 1,056 litres per cow has largely been achieved by feeding an extra 820 kg concentrate per cow per year, which in turn has reduced milk produced from forage by 760 litres per cow per year, which has affected farm profitability. For example, a wider analysis of data taken from benchmarked dairy farms during 2007/08 has indicated a relationship between milk produced from forage and profit, where an increase in milk produced from forage of 1000 litres per cow per year improved profit by £85 profit per cow per year or 1.2 ppl (Figure 1).

Figure 1. Relationship between milk produced from forage and profit per cow



### **Addressing the issues**

Given the predicted volatility in future milk price and concentrate cost projections, it is vital that the Northern Ireland dairy industry achieve greater levels of feeding efficiency to remain competitive in the future. To this end CAFRE Dairying Development Advisers have been running a series of information events, workshops and training programmes to demonstrate the benefits of improving feed efficiency and demonstrating good management practice on commercial farms across Northern Ireland. Factors which have been discussed at various events include:

- Exploiting the potential production from grazed grass;
- managing grass effectively to achieve that potential;

- discussing the financial implications associated with buffer feeding at grass;
- using results from silage analysis reports to develop a winter feeding plan;
- discussing the financial implications of targeting concentrate feeding according to stage of lactation and creating different winter feeding groups within complete diet (TMR) feeding systems. For example, at one series of workshops, it was estimated that inefficient use of TMR feeding in a 100 cow herd could cost an extra £10,000 - £36,000 over a six-month winter feeding period;
- dairy farmers are also encouraged to assess their own herd's financial performance through the Greenmount Dairy benchmarking programme, and
- other training programmes such as The Dairy Herd Fertility Challenge allow milk producers to examine factors affecting fertility within their own herds.

The general observations gained from these discussions and the benchmarking programmes would be that the most profitable milk producers in Northern Ireland tend to adopt the following principles:

- Concentrate on good yields but not yield at any cost;
- make good use of grazed grass and grass silage;
- target better use of concentrate i.e., feed according to stage of lactation;
- make better use of TMR systems through batching cows in groups or using a combination of TMR and in parlour feeding; and,
- have better levels of herd fertility

### **Conclusions**

Dairy farms in Northern Ireland have undergone herd expansions and increases in milk output per cow in an effort to improve farm profits. While this has proved successful in many situations, in a number of cases it has been done so at the expense of feeding efficiency which in turn has limited the financial performance of those units. CAFRE Dairy Development Advisers are running a series of information events and training programmes to highlight the importance of feeding efficiency and discuss ways by which this can be achieved