

Labour efficiency on dairy farms

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Summary

- Overall labour demand increased as herd size increased.
- Efficiency improved significantly as herd size increased above 250 cows.
- The most labour efficient farms used contractors to perform some tasks.

Introduction

Traditionally, the average herd size on Irish dairy farms has been small relative to some international scenarios like Australia and New Zealand. Dairy farms had an average size of 68 cows in 2015, and could be largely managed by the owner and family members. Since EU milk quota abolition in 2015, the Irish dairy sector has been growing and is expected to grow by up to 50% by 2020. Second to feed costs, labour has been identified as one of the highest costs on dairy farms. Compared to other EU countries, Ireland has historically had low milk production per labour unit and this situation is now exacerbated by the growth in the industry. Thus optimising labour efficiency is a critical factor in increasing farm profitability and maintaining the sustainability of the dairy farm. Intensive research on Irish dairy farm labour efficiency was last conducted in the early 2000's while under the constraints of the European milk quota regime. That study, recorded a labour input of 41.4 hours/cow/year for an average herd size of 77 cows. That level of labour input per cow is not sustainable as herd size increases. With current and projected cow numbers, this presents a challenging scenario for labour supply on farms. In order to optimise work/life balance and maintain profitability when and if hired labour is necessary, an examination of the labour issue on-farm was required to identify the factors affecting both the absolute labour input required and also the efficiency of labour use, together with the influence of facilities and practices on farms.

Current work

The objective of this study was to quantify levels of labour input on labour efficient, spring-calving Irish dairy farms (identified by Teagasc advisory). These farms participated in discussion groups and operated a grass based milk production system. Labour input relating to a range of dairy farm tasks over a 1-year period were recorded. Thirty-eight farms were ultimately enrolled in the study with herd sizes ranging from 79 to 533 cows. A phone app was developed to allow farmers to record labour data in real-time by starting and stopping the app's stopwatch to record designated tasks on-farm. Farmers were asked to record their labour data including the labour input for employed and family members on three consecutive days of each month for 12-15 months. A short online survey was also developed and applied on a monthly basis to capture the other factors contributing to labour data on farm. Additionally, a once-off phone survey was conducted with each farmer to establish their farm facilities and practices.

Average total farm labour input was 4,629 hours per year with an average herd size of 191 cows. Farm labour input was 26.3 hours/cow/year. While there were farms with high efficiency on smaller herd sizes (80-150 cows), farms above 250 cows were, on average, the most efficient with an average input of 19.5 hours/cow/year. It was observed that as labour efficiency improved, the proportion of machinery work performed on farm by contractors increased. Milking, and its associated tasks of herding pre- and post-milking and washing post-milking, accounted for 33% of the total farm labour input over the course of the year. The next most time consuming task, was identified as cow care, at 17%. This task was

associated with feeding cows and heifers, winter feeding and tasks associated with baled and pit silage.

Seasonality of dairy farming

The distinct seasonal demand for overall farm labour input can be viewed in Figure 1. The average herd size here was 191 cows and the average hours worked per season were highest in springtime (February, March, April), dropping down and remaining steady throughout the summer (May, June, July) and autumn (August, September, October), and finally dropping off significantly in the winter (November, December, January). The most notable peak in the spring was attributed to milking, calf care and feeding, and calving tasks.

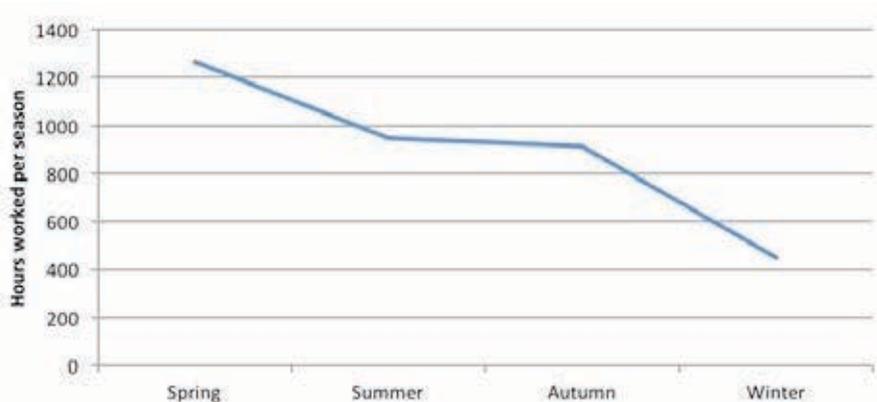


Figure 1. The seasonality of workload on Irish dairy farms

Efficient practices

Regardless of herd size, the more efficient farms also had an increased proportion of machinery work performed on-farm by contractors. Farms that were found to be efficient over the entire year were also more efficient in the peak of the spring season. Due to the evident strain on the system during the spring, the most and least efficient farms in this period were investigated further and there were notable differences in facilities and practices which affected labour input for certain tasks. The most efficient farms in springtime were also found to be some of the most efficient at the milking tasks. The most efficient farms with regard to milking efficiency averaged nine rows of cows for milking while the least efficient farms averaged 12 rows. On the more efficient farms, exit gates from the parlour and drafting facilities could be managed from the pit and cows could go directly to paddocks from the milking parlour.

Conclusions

Excellent examples of labour efficiency were observed across herd sizes in this study. While this small sample is not representative of the current industry benchmark, it represents what is achievable on Irish dairy farms and highlights where farms can make adjustments and improvements to help optimise labour efficiency and ultimately the work/life balance, particularly during the peak months in spring.