

Meeting the challenges of labour demand on farm

TEAGASC research is looking at levels of labour input on Irish dairy farms and identifying strategies associated with increased efficiency.

The labour issue on farms

Dairy herd size in Ireland has increased in recent times following the abolition of the EU milk quota regime. The percentage of dairy herds with greater than 100 cows has increased from 4.5% in 2005 to 23% in 2016 (Teagasc, 2017). This change in profile has resulted in an increased labour demand on farms. Labour has been identified as one of the highest costs on pasture-based dairy farms (Hemme *et al.*, 2014). Ireland has historically had low milk production per labour unit. Hence, optimisation of on-farm labour efficiency is vital for sustainable herd expansion. The objective of this study was to quantify levels of labour input and labour efficiency on commercial dairy farms, and to identify the facilities and management practices associated with increased efficiency.

Measurement of labour input on dairy farms

Thirty-eight dairy farms were enrolled on the study, and data was collected over three consecutive days each month during a 12-month period between 2015 and 2016. The mean herd size was 187 cows (range 79 to 533), and all herds had previously been



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identified as labour-efficient farms by Teagasc dairy advisors. Data collection was achieved through use of an app on a smartphone. Other data, including other farm labour (family or hired), hours of machinery work (with the farm's own equipment or contracted), cow numbers, and facilities and management practices were collected through online and phone surveys. For analysis purposes, farms were categorised into one of three herd size categories (HSCs). Categories 1, 2, and 3 constituted farms with <150 cows (HSC 1), 150-249 cows (HSC 2), or ≥250 cows (HSC 3).

Labour demand and efficiency levels

Overall, farm labour input increased with HSC, with 3,015 hours, 4,499 hours, and 6,023 hours worked per year on HSCs 1, 2, and 3, respectively. A greater proportion of work was carried out by hired labour units as herd size increased (**Figure 1**). Labour efficiency was measured as total hours of labour input to the dairy enterprise divided by herd size. Labour efficiency was similar for HSCs 1 and 2 (23.8 and 23.3h/cow per year, respectively), but improved as herd size increased above 250 cows (17.3h/cow per year for HSC 3).



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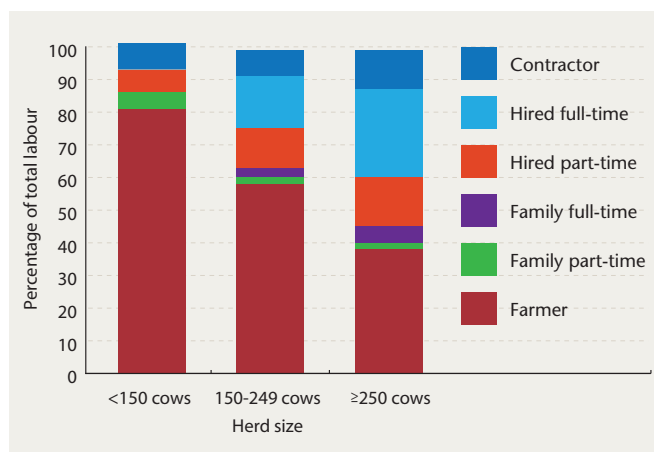


FIGURE 1: Proportion of labour performed on farm by different personnel across HSC 1 (<150 cows), HSC 2 (150-249 cows), and HSC 3 (≥250 cows).

There was, however, a wide range in efficiency within each herd size category; individual farms in HSCs 1 and 2 achieved 12.6h/cow per year and 13.9h/cow per year, respectively, indicating that smaller farms can be extremely efficient.

Impact of facilities and practices

The most time-consuming tasks were milking (33% of total farm hours) and those associated with winter feeding (17% of total farm hours). The most efficient farms (top 25%) had, on average, nine rows of cows to milk, had an automatic backing gate present, and performed once-a-day milking for at least four weeks in the springtime. Conversely, the least efficient farms (bottom 25%) had, on average, 11 rows of cows, no automatic backing gates, and did not perform once-a-day milking at all in the spring. Teat preparation practices were similar on the most and least efficient farms, and no differences in somatic cell count were observed. With regard to winter feeding, the most efficient farms had fewer areas to feed cows and heifers (three areas as opposed to four areas), delivered fresh feed every second day (as opposed to every day), and delivered feed with a tractor/shear grab (as opposed to feeding with a tractor/finger

grab and feeder wagon). While labour input attributed to calf rearing did not represent a large proportion of yearly labour, its seasonal nature meant that time dedicated to this task needed to be investigated. The most efficient farms were getting calves contract reared. Aside from the farms that were contract rearing, there were various noteworthy differences between calf-rearing practices on the most and least efficient farms. The most efficient farms fed colostrum via stomach tube, did not house calves in individual pens, and got calves out to grass at six weeks old. In contrast, the least efficient farms relied on colostrum intake through a combination of suckling and/or bucket and teat, calves were more likely to live on an out farm, calves were more likely to be housed in individual pens, and were going out to grass at nine weeks old.

When hours spent at machinery work were investigated, the most efficient farms had, on average, 600 hours of work, approximately half of which was performed by contractors and half by the farm's own personnel and equipment. The least efficient farms performed approximately 1,200 hours of machinery work, with 75% of those hours performed by the farm's own personnel and equipment.

References

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Take home message

This study identified three key findings:

- labour efficiency improved as herd size increased above 250 cows, but there was an associated requirement of additional hired labour in these herds;
- adopting appropriate technologies and management practices associated with milking and calf care had a favourable impact on labour efficiency; and,
- high levels of labour efficiency were not solely associated with large herds, and were also achieved on herds with <150 cows.