

Labour Costs on Ontario Dairy Farms and Their Implications for Precision Technologies

Jack Rodenburg¹ and Brian Lang²

*DairyLogix Consulting¹ and Ontario Ministry of Agriculture, Food and Rural Affairs²
Ontario, Canada*

The cost and availability of dairy farm labour is a major economic factor in determining whether labour saving precision technologies will be adopted. In order to establish typical wage rates for dairy herd workers in Ontario Canada, dairy farm members of the Progressive Dairy Operators Association were surveyed to determine the overall labour requirements and labour costs on their farms. Respondents were asked to include all labour related to the care of the dairy herd including replacements and record keeping and barn equipment maintenance, but excluding field work associated with feed production. The survey also included more detailed questions on the time required for tasks related to feeding the herd. Similar surveys were conducted in 2004 and 2007, making it possible to look at trends over time as well as current wages and labour efficiencies. At the time of writing 62 farms with a herd size of 169 ± 97 cows had reported and more were expected to respond. A detailed final report on this study will be posted on the web at www.dairylogix.com when all results are in and analyzed.

Overall Labour Efficiency

These farms reported 5.5 ± 2.9 people contributed labour to the farm including, 2.4 owners, 0.9 children of owners and 2.2 unrelated arms length employees. The total hours of labour per milking cow was 0.18 hours per day, a nearly 20% improvement over the 0.22 hours reported in 2004. Increases in labour efficiency over the 6 year period were evident in all herd size categories as shown in table 1.

Table 1. Labour per milking cow per day reported by dairy farms in 2004 and 2010 by herd size.

No. Milking Cows	2004 Hours/Cow/Day	2010 Hours/Cow/Day	% change
All farms surveyed	0.22 ± 0.08	0.18 ± 0.09	-18%
< 100	0.31 ± 0.15	0.26 ± 0.10	-16%
100-200	0.21 ± 0.11	0.16 ± 0.07	-24%
200-300	0.17 ± 0.11	0.11 ± 0.04	-35%
>300	0.12 ± 0.05	0.11 ± 0.08	-8%

Wages Paid

Average wages paid to non owner, non family employees on surveyed dairy farms increased from \$11.80 per hour in 2004 to \$13.43 in 2007 and \$14.29 in 2010. In the last two surveys the value of non monetary benefits such as housing, milk and meat, use of vehicles etc. was valued at \$0.53 per hour in 2004 and \$ 0.55 per hour in 2010. It is noteworthy that total labour costs per cow are nearly unchanged over time because the 23% increase in cost per hour is offset by an 18% increase in labour efficiency. The farms also reported on wages and hours of work for employees by level of responsibility and task. These tasks were defined as “herdsman”- required to make day to day management decisions and can be left in charge; “herd worker” – performs several different skilled tasks such as milking feeding and healthcare; “milker”, “feeder”, “calf feeder” – performs this specific skilled task only; and “labourer” – does unskilled work under supervision. Average wages, hours and benefits for each category are listed in Table 2.

Table 2. Hours of work, wages and benefits paid to arms length employees in 2010.

Job description	Ave. Hours/Week	Ave. \$/Hr Wages (SD)	Ave.\$/Hr benefits	Ave. \$/Hr Total
Herdsmen	47.2	\$16.86 ± 2.64	\$1.32	\$18.18
Herd Worker	41.4	\$15.33 ± 2.91	\$0.80	\$16.13
Milker	17.7	\$14.12 ± 3.49	\$0.33	\$14.45
Feeder	27.4	\$14.33 ± 3.92	\$0.59	\$14.92
Labourer	19.1	\$13.21 ± 3.60	\$0.41	\$13.62
All employees	26.0	\$14.29 ± 3.76	\$0.55	\$14.84

Feed Handling

Survey farms were also asked to provide data on the time required to mix and deliver TMR mixes, push up feed and clean mangers. These farms made an average of 3.82 batches of TMR per day and spent an average of 35 minutes per batch mixing and delivering them. This time included and estimated 2.60 minutes to park the mixer, 12.19 minutes to add forages, 4.68 minutes to add grain, 4.29 minutes to add other ingredients, and 11.32 minutes to mix and deliver the average batch. Farms reported very little in the way of automation of feeding. Two farms reported using software designed to guide and monitor ingredient additions and 11 farms used one or more auto shutoffs on augurs or conveyors linked to the digital scales. Only one farm used an automated system for pre-batching grain, supplement and mineral ingredients. Nearly all farms cleaned the bunk once per day although 2 farmers reported they cleaned twice a day and 5 never cleaned the bunk. The average time required for this task was 6.12 ± 4.86 minutes. The average number of times feed was pushed up was 4.38 ± 2.65 per day and pushing up feed took 22.24 ± 20.08 minutes per day. 21 respondents pushed up feed with a skid steer, 10 with a tractor, 9 used a lawn/garden tractor 2 used a gator and 14 used hand tools. Two farms used automated Lely Juno feed pushers. Eleven of the herds that used skid steers and tractors acknowledged that tires were often soiled with manure. It is of note that the most common feeding practice was to feed TMR once per day in the morning, and to push up feed several times during the day, but not at night, near the end of the feeding period when push up would seem most appropriate.

Cost Benefit of Feed Handling Automation

Knowing the time required to perform a task and the cost of labour can be beneficial in calculating the cost benefit of labour saving automation. For example, based on this survey, these Ontario dairy producers spend 22.24 minutes per day pushing up feed, using labour that costs an average of \$14.84 per hour. This works out to 135 hours per year at a cost of \$2007. Farms that are 1 standard deviation above the mean for time spent pushing feed spend 42.32 minutes per day or 257 hours. Using standard labour costs this is \$3820 per year. If an automated feed pusher costs \$24675, and it is amortized at 15% of its value per year, this \$3700 cost can be recovered from labour savings alone on one in six farms, and on an average farm labour savings will pay more than half the cost. More frequent more consistent feed push up, especially during the night when on many farms it would be most beneficial is a further benefit, along with reduced wear and tear on the equipment used for clean up and the reduction in disease risk when manure equipment is kept off the feed alley. These farms spend just over 2 hours per day or more than \$11,000 per year on labour for mixing and delivering feed suggesting that a substantial investment in feeding automation can be justified, but very few of the producers surveyed have invested in any automation or labour saving technologies for feeding. While currently available automated feeding systems all have significant limitations it can be anticipated that this is a technology area that will see further development and commercialization in the next decade.