

## **Hired labor on New York State dairy farms: Cost, efficiency, and change from 2016 - 2022**

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Hired labor plays a significant role on dairy farms, with more than nine thousand jobs provided by New York dairy farms in 2019.<sup>1</sup> As farm size grows, hired employees provide a larger percentage of the labor needed to work the farm. In 2021, authors J. Karszes and C. Wolf presented an in-depth look at hired labor on larger dairy farms over a 10-year period in E.B. 2021-05 “*Hired Labor on New York State Dairy Farms: Costs, Efficiency & Change from 2011-2020*”. Since then, hired labor has continued to increase in cost. This paper presents updated trends, costs, and changes over the last seven years through 2022.

From 2016 through 2022, 112 farms utilizing hired labor participated in the DFBS for all seven years. With this balanced data set, change can be looked at over this time frame. On these 112 farms, hired labor grew from 86.9 percent of all labor on the farm in 2016 to 88.2 percent in 2022.

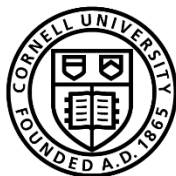
### **Trends from the same participating farms, last seven years**

Selected factors over the seven years are highlighted in Table 1. Starting with an average herd size of 979 cows in 2016, these farms grew an average of 4.5 percent a year, with 2018 showing the highest growth of 6.4 percent, and 2021 having the smallest change in growth of 1.3 percent. Herd size averaged 1,274 cows in 2022. Milk production also showed a small increase over this period, from 26,348 pounds per cow to 27,119 pounds per cow, a difference of 2.9 percent.

With the increase in cow numbers, the amount of hired labor also increased to reflect the larger labor needs. Average hired labor equivalents rose from 18.1 to 20.8. One worker equivalent equals 2,760 hours of labor for the year. While average herd size grew 30.1 percent from 2016, hired labor utilized rose only 14.8 percent. With herd size increasing at a faster pace than hired labor, labor efficiency metrics improved. Average cows per worker rose from 46.9 to 54.1 for the period, an increase of 15.2 percent. Milk sold per worked rose 18.5 percent, reflecting the increase in milk per cow, along with the increase in cows per worker equivalent.

With the businesses growing in herd size from 2016 to 2022, the total payroll cost to the business rose by 54.8 percent. This increase was due to the combined effects of more hired labor hours utilized by the farms and a higher average cost per hour. The average hourly cost of hired labor rose from \$14.60 in 2016 to \$19.69 in 2022, a 34.8 percent increase. The annual percent change in hired labor cost per hour ranged from a low of 2.0 percent in 2018 to a high of 6.8 percent in 2022, with an average annual increase of 5.1 percent. For these same farms, the percent increase year over year rose over time as shown in Figure 1. The rise in hired labor cost per hour, coupled with the growth in total hours of hired labor, drove the increase in total payroll costs.

<sup>1</sup> Schmit, T. M. (2021). The Economic Contributions of Agriculture to the New York State Economy: 2019. Charles H. Dyson School of Applied Economics and Management. E.B. 2021-04.



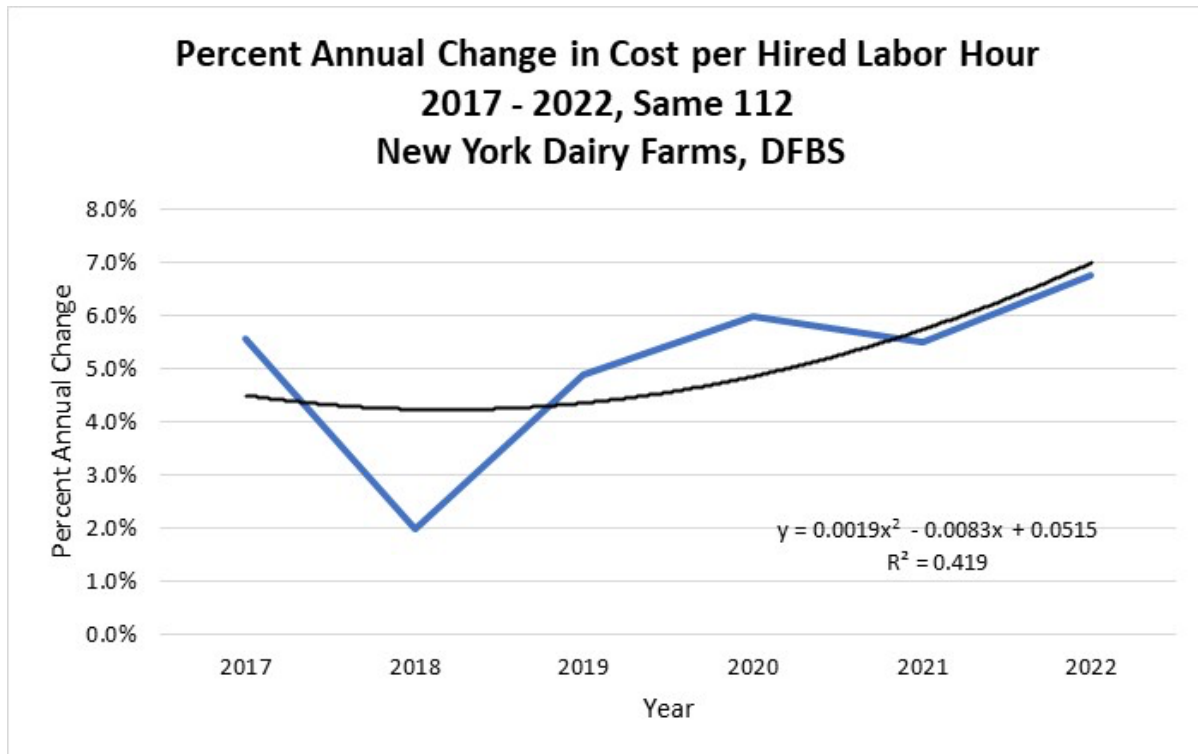
The average hired labor cost per hundredweight of milk produced increased from \$2.83 per hundredweight in 2016 to \$3.27 per hundredweight in 2022, an increase of 15.6 percent. Average hired labor cost per hundredweight rose every year during this period, yet the average annual percent change was quite variable, ranging from less than 0.5 percent for three of the six years to a 5.6 percent jump in 2022. Increases in hired labor cost per hundredweight would have been greater if labor efficiency improvements were not implemented by farms during this period, which partially offset the rising hourly cost of hired labor. If labor efficiency had remained the same, hired labor would have increased by an additional 3.6 worker equivalents, and total payroll would have grown by an additional \$194,324 per farm, on average. Without any labor efficiency improvements, the hired labor cost per hundredweight would have been \$3.84 in 2022, an increase of 35.5 percent from 2016. Figure 2 highlights the difference in projected versus actual hired labor costs if no improvements in labor efficiency had occurred. Across the 112 farms, the increase in labor efficiency resulted in a total of 400 less hired worker equivalents needed by 2022 than if labor efficiency stayed the same as 2016.

**TABLE 1**

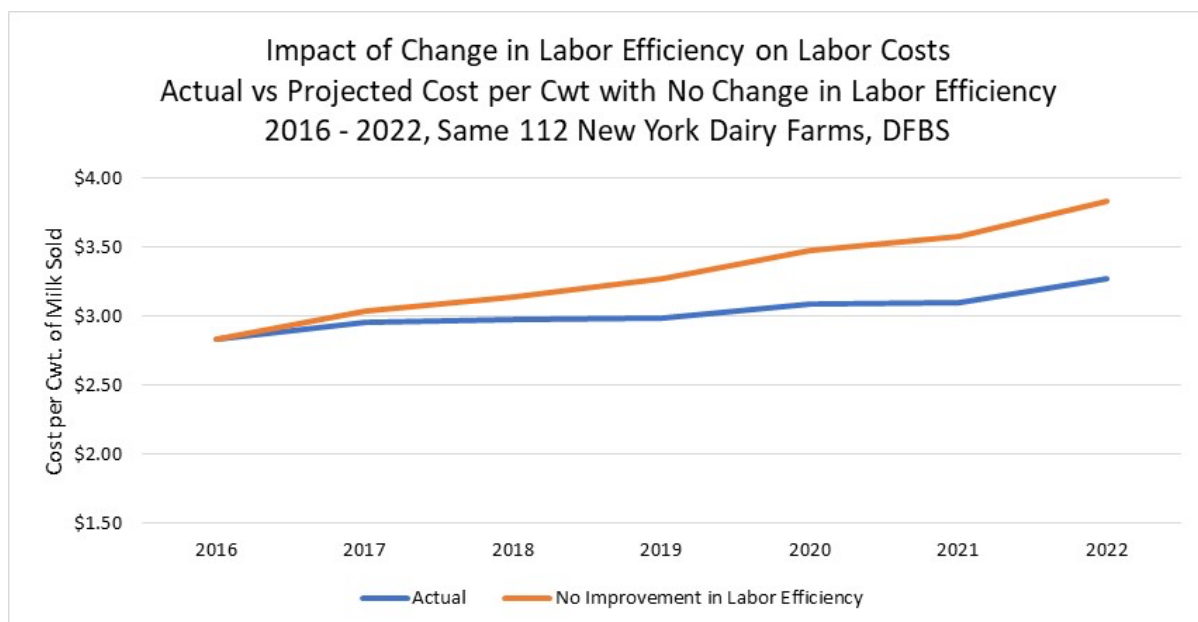
Summary of Selected Labor Metrics with Year over Year Changes							
Same 112* Farms, 7 years, 2016 through 2022, New York State, DFBS							
	2016	2017	2018	2019	2020	2021	2022
<b>Descriptive Statistics</b>							
Herd Size	979	1,039	1,106	1,168	1,212	1,240	1,274
%Change		6.1%	6.4%	5.6%	3.8%	2.3%	2.7%
Lbs. Sold per Cow	26,348	26,067	26,348	26,338	26,406	27,075	27,119
% Change		-1.1%	1.1%	0.0%	0.3%	2.5%	0.2%
# of Hired Worker Equivalents	18.1	18.9	19.6	20.2	20.5	20.4	20.8
% Change		4.0%	4.2%	2.8%	1.7%	-0.4%	1.8%
<b>Labor Efficiency</b>							
Cows per Worker	46.9	48.1	49.3	50.8	52.1	53.4	54.1
%Change		2.4%	2.5%	3.2%	2.4%	2.6%	1.2%
Milk Sold per Worker	1,236,842	1,253,219	1,276,279	1,338,238	1,374,843	1,445,595	1,465,322
%Change		1.3%	1.8%	4.9%	2.7%	5.1%	1.4%
<b>Labor Costs</b>							
Total Payroll, Dollars	\$730,463	\$802,315	\$852,218	\$918,478	\$989,980	\$1,040,079	\$1,130,436
% Change		9.8%	6.2%	7.8%	7.8%	5.1%	8.7%
Cost per Hour, Hired	\$14.60	\$15.42	\$15.73	\$16.49	\$17.48	\$18.44	\$19.69
% Change		5.6%	2.0%	4.9%	6.0%	5.5%	6.8%
Cost per Cwt. of Milk Sold	\$2.83	\$2.96	\$2.97	\$2.99	\$3.09	\$3.10	\$3.27
% Change		4.6%	0.4%	0.4%	3.6%	0.2%	5.6%
Hired Labor Costs as % of Total Operating Expenses	16.6%	17.0%	17.2%	17.2%	17.2%	16.4%	14.8%
Hired Labor Costs as % of Total Farm Expenses	15.0%	15.3%	15.6%	15.7%	15.7%	15.1%	13.7%
<b>Earnings</b>							
Percent Rate of Return on All Capital w/o Apprec.	1.7%	4.0%	1.7%	5.9%	6.8%	4.3%	11.8%

\* Number of farms with more than 1 hired worker equivalent and cost per hired worker equivalent greater than \$30,000 that participated in DFBS project every year from 2016-2022

**FIGURE 1**



**FIGURE 2**



For these same farms from 2016 to 2022, hired labor cost is also reported as a percentage of total operating costs. Operating expenses on dairy farms are continually changing as prices change, different mixes of inputs are utilized, and production output changes. Hired labor as a percent of total operating costs increased from 16.6 percent in 2016 to a high of 17.2 percent in 2019 and 2020, falling back down to 14.8 percent in 2022 as inflation impacted inputs prices across the farms.

## **Summary**

As farm size increased from 2016 to 2022, dairy farms have utilized more hired labor, with hired labor providing over 88 percent of all labor on larger dairy farms in New York. As farm size grew, and farms utilized more hired labor over this period, total payroll costs also increased. This change was driven not only by the increase in the amount of hired labor, but also the rising cost of hired labor. The change in the hourly cost of hired labor did vary from year to year. However, the rate of change has been increasing over the last six years, with the highest jump in the hourly cost of hired labor occurring from 2021 to 2022.

While labor costs have been increasing as measured by total payroll and cost per hired labor hour, cost per hundredweight of milk has also risen, but at a slower rate. Dairy farms have offset some of the increase in cost per hired labor hour by improvements in labor efficiency as measured by milk sold per worker equivalent. Without these increases in labor efficiency, increasing costs associated with hired labor would have had a much larger negative impact on earnings.

Improvements in labor efficiency have partially offset the increase in hourly hired labor cost, slowing the rise in hired labor cost per hundredweight of milk sold. However, any costs associated with achieving the improvements in labor efficiency are not captured or analyzed within this report. Many different farm characteristics and management decisions may impact labor efficiency on a dairy farm, including farm size, growth, technology, automation, employee training and retention, utilization of custom services, and more. For a farm to raise earnings through management changes or investments to improve labor efficiency, any cost saving due to improvements in labor efficiency must exceed the cost increases incurred by the farm to achieve those efficiencies.