Understanding the Opportunities and Risks Associated with Alternative Milking Strategies

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INTRODUCTION

What are alternative production (milking) strategies? As farmers continue to find ways to adapt to milk and labor market conditions, strategies such as **seasonal production** or **flexible milking frequencies** (i.e. once a day milking) are increasingly appealing. Although the benefits of these strategies may come at the expense of reduced milk production, farmers in some markets, such as 100% grass-fed where production is generally lower and the pay price is higher, may be better able to compensate for such impacts.

Do farmers in the Northeast use alternative production strategies? Researchers from the University of Vermont Extension conducted a survey of Northeast dairy producers in the spring of 2021 to answer this question. This article summarizes the 134 farmer responses.

FARM DEMOGRAPHICS

Approximately 800 surveys were mailed to dairy producers across the Northeast, including Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, and Pennsylvania (Figure 1). The survey asked about the farmers' use and interest in alternative strategies, impacts they observed if they tried an alternative strategy, and benefits they'd be interested in obtaining through alternative strategies. If a farmer was not interested in these strategies, there was also a place for them to indicate their reasons and/or concerns.

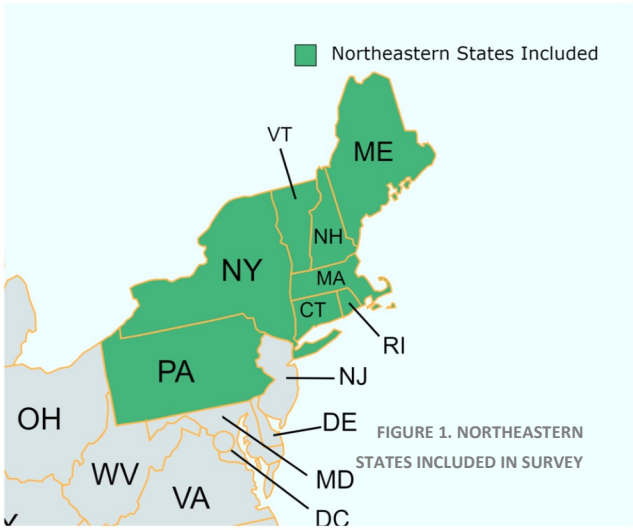

FIGURE 1. NORTHEASTERN STATES INCLUDED IN SURVEY

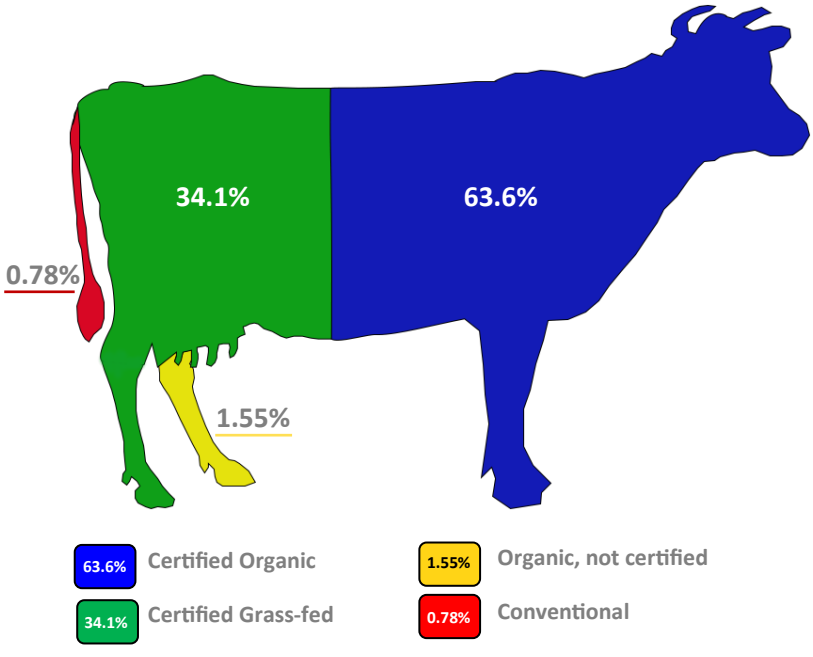

FIGURE 2. DISTRIBUTION OF RESPONDENT PRODUCTION SYSTEMS

The majority of respondents operated certified organic farms while 34.1% were certified grass-fed (Figure 2). The remaining farms were organic without certification or conventional.

Of the 134 farmer responses, 62% of respondents self-identified as belonging to the Plain community (i.e. Amish, Mennonite, etc.).

Of the total respondents, annual milk production averaged 12,898 lbs. per cow but ranged from 4,400 to 27,375 lbs. There was a **51 mature cow/ herd average** with 57% of herds being Holsteins, 33.1% of herds bring Crossbreeds, and 17% of herds being Jerseys.

RESULTS

Of the total respondents, only 17% indicated they have tried or currently use an alternative strategy with 20% interested and 63% not interested or unsure. Interestingly, 76% of the Plain community said they were not interested or were unsure about alternative milking strategies. This is significantly higher than English respondents, of which 38% were unsure or uninterested. Furthermore, 10% of Plain community respondents and 31% of English respondents reported trying or using an alternative milking strategy. Amongst the respondents that have tried or are using one of these strategies, the most popular strategy employed was once-a-day milking, followed by seasonal production, and milking three times in two days (Figure 3. It is important to note that farms could have reported experiences with multiple strategies).

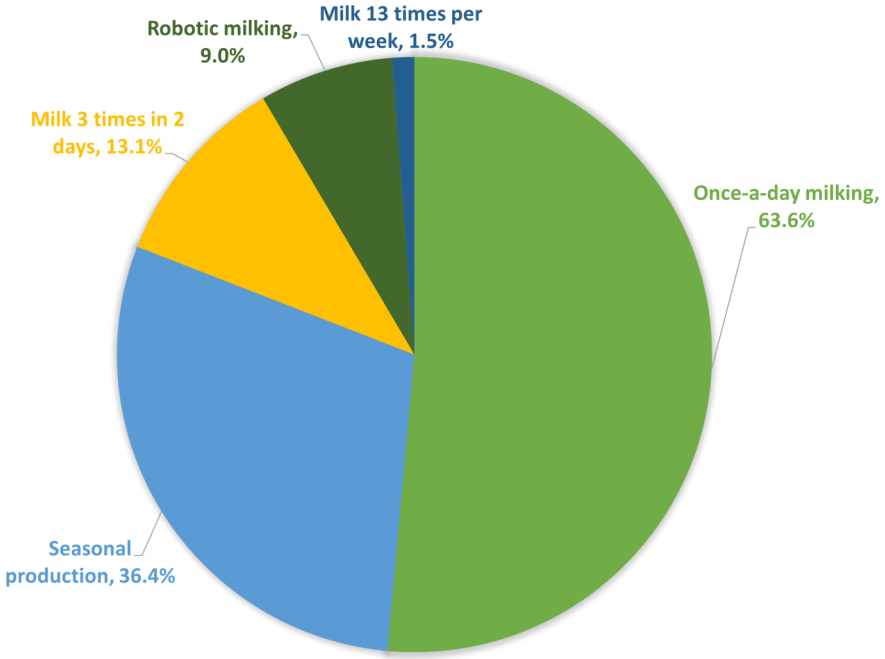

FIGURE 3. TYPES OF ALTERNATIVE MILKING STRATEGIES ADOPTED BY FARMS IN THE NORTHEAST

Interestingly, 18% of grass-fed respondents and 12% of organic respondents reported having tried an alternative strategy. While this suggests that a higher proportion of grass-fed farms have at least tried one of these alternative strategies, we do not know how many continued the practice.

The length of time that an alternative milking strategy was employed by a farm depended on the strategy (Table 1). Farms were engaged in seasonal production for 4.5 times longer than farms on once-a-day milking. This is somewhat to be expected as trying a different milking frequency can occur within a much shorter span of time compared to a shift towards seasonal production. Interestingly, only 13% of farms who indicated they have tried or are milking three times in two days have done so for an average of 15 months indicating that this practice is relatively new and rare in the northeast compared to the other strategies.

Table 1. Duration, herd size, milk production, and breed types for each alternative milking strategy.

STRATEGY	MAX AND MIN months	MEDIAN DURATION months	HERD SIZE	MILK PRODUCTION lbs	BREED TYPES %
Once-a-day	1 and 252 (21 years)	18.5	53	9,864	46.7% Jersey, 40% crossbred, 6.7% Holstein, 6.7% other
Twice-a-day	6 and 840 (70 years)	204 (17 years)	50	13,479	47.6% Holstein, 32.0% Crossbred, 16.5% Jersey, 3.9% other
Three-in-two	2 and 24 (2 years)	20	55	11,584	50% crossbred, 50% Jersey, 0% Holstein, 0% other
Seasonal	1 and 276 (23 years)	84	59	10,996	71.4% crossbred, 14.3% Jersey, 14.3% other, 0% Holstein
All farms	1 and 276 (23 years)	24.5	54	10,207	41% crossbred, 32% Jersey, 18% Holstein, 9% other

The average herd size varied little across strategies or management types (i.e., organic, conventional, etc.). However, milk production varied widely. The average annual milk production of the twice-a-day milking farms was 13,479 lbs per cow while the once-a-day farms averaged 9,864 lbs per cow. Interestingly, the farms that reported milking three times every two days averaged 11,584 lbs per cow. These data suggest a 14% reduction in milk production when milking three-in-two compared to a 27% reduction milking once-a-day. The lower milk production for the seasonal farms may have been due to the higher proportion of crossbred animals that fit the reproductive performance needs of that production system and may not be bred for high milk production. Some respondents may have also employed alternative milking frequencies in conjunction with seasonal production leading to lower production than the twice-a-day farms that produce milk year-round. In general, the distribution of breeds shifts from predominantly Holstein in year-round twice-a-day milking systems to crossbred or Jerseys in the alternative systems. This is consistent with alternative strategy farms selecting cows for additional characteristics necessary to be successful in these alternative systems. For example, high-producing cows may be less suited to tolerating the extended milking intervals in once-a-day and three-in-two systems. Furthermore, although milk volume may be reduced in these systems, selecting cows for higher components may help offset lost income from milk volume.

BENEFITS OF INTEREST

Each group of respondents was asked about the benefits that interested them in adopting, trying, or potentially adopting/trying alternative strategies. Across all Groups, the top benefit was increased flexibility in daily task timing which was cited by 75.9% of respondents in each group (Figure 4). Increased flexibility in timing also contributes to the ability to use that time to generate additional income, which was also cited as a top benefit of interest. Many of the responses within the "other" category included topics related to increasing quality of life either via reductions in physical demands on farmers or having more time for family and time off. In addition, many responses in the "other" category pertained to reductions in labor demands and costs associated with labor.

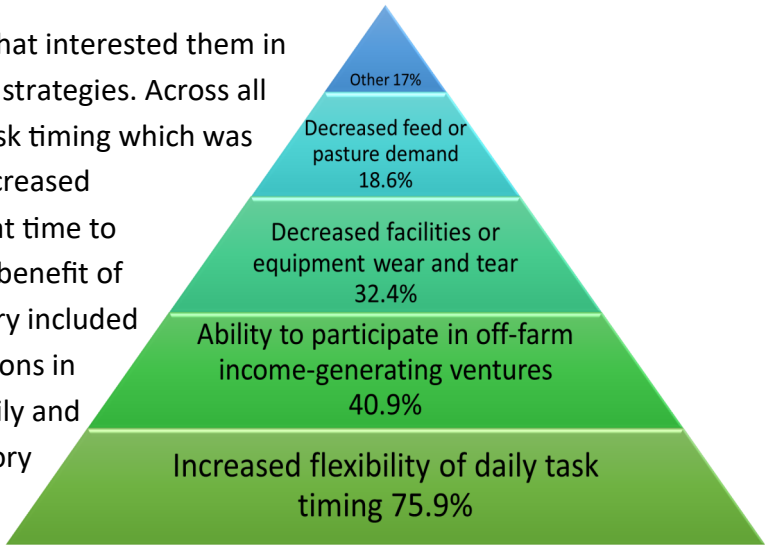

FIGURE 4. TOP CITED BENEFITS OF INTEREST

COMMON IMPACTS OF ALTERNATIVE STRATEGIES

The most common impacts observed by respondents who have tried or are currently using an alternative strategy are summarized in Figure 5. **Decreased milk production was the most cited impact.** Productivity reductions averaged approximately 25% but ranged from 0% to 50%, indicating that some herds were better suited to the alternative strategy employed. This was further supported by the range in increased cull rate from 3% to 30%. **Approximately 35% of farms also experienced increases in somatic cell count** ranging from 13.6% to 277%, indicating significant differences between herds in response to the strategies.

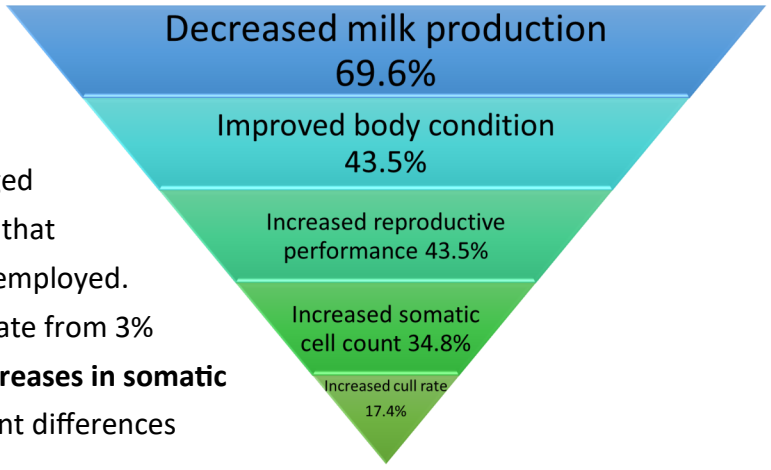

FIGURE 5. PREVALENCE AND MAGNITUDE OF IMPACTS

However on a positive note, respondents noted improved body condition and increased reproductive performance of the herd. Despite the challenges, 84% of interested farms, and 11.1% of unsure farms, indicated they would be interested in the strategies if they could overcome the barriers. However, 41.6% of the unsure group remained unsure of their interest in the strategy. Of farms that were unsure or not interested, approximately 22.9% indicated that they did not understand the benefits these strategies may provide and 15.7% did not understand what the strategies themselves were. This indicates that additional education and outreach on alternative milking strategies is needed.

COMMON CHALLENGES AND CONCERNS

For each alternative milking strategy, respondents identified their top challenge. Managing somatic cell count and mastitis was identified as the biggest challenge for farms using once-a-day milking, while farms milking three times in two days found managing the variation in the daily schedule and odd milking times the most challenging. As expected, the biggest challenge for farms milking seasonally was getting the herd bred within the narrow window necessary and having to cull otherwise high-producing cows who do not fit this reproduction schedule.

The main concern amongst farms that had not yet tried or adopted an alternative strategy was the economic viability either due to lower milk production or other aspects of the system. Farms were unsure that the potential benefits would be outweighed by the unknown costs of lost milk production, quality, or costs associated with the slow transition of the herd to be better suited to the systems. Farms were also uncertain about potential cow health impacts of these strategies.

CONCLUSION

These data suggest that northeast dairy producers are interested in adopting alternative milking strategies but require education and technical assistance to evaluate economics and assist with minimizing impacts on milk production, quality, and herd health.

ACKNOWLEDGMENTS

This work was made possible with funding from USDA National Institute of Food and Agriculture (NIFA) Northeast Sustainable Agriculture Research and Education Program (project no. ONE 20-360).

This resource was developed by the **University of Vermont Extension** using data collected from the survey, *Understanding the Opportunities and Risks Associated with Alternative Milking Strategies*. A special thanks to Sarah Flack Consulting and the University of Vermont Center for Rural Studies for their collaboration on this project.

Photo of a Grazing Herd provided by Sarah Flack of Sarah Flack Consulting

Thank you to all the farmers who provided honest and accurate responses. Information gathered is helping us learn more about the current interest and use of alternative milking strategies on farms and helping to identify areas of research and outreach critical to helping farmers successfully evaluate and implement these strategies on their own farms.

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Published: June 2022