

Economic Analysis of Switching Milking Frequency

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In these challenging economic times dairy producers are looking for ways to improve economic net margins in order to remain competitive. An alternative to achieve this goal may reside on increasing the current milking frequency with the purpose of improving milk productivity and consequently enhance overall farm economic net margins. The motivation for this management strategy comes from a long standing proven research indicating that higher milking frequencies indeed increase milk productivity per cow and overall herd milk production.

However, this increased productivity will require additional expenses. The two most important additional expenses are: (1) cost of additional labor and (2) cost of additional feed required. If the value of the additional milk produced is greater than the aggregated additional costs, then the proposition of increasing milking frequency would be worthwhile considering.

Nonetheless, the expected additional milk revenue and the additional costs will depend upon a series of farm and market conditions. Key variables to watch out are: (1) the expected milk price to be received from additional milk produced (\$/cwt), (2) the expected additional labor required to implement an additional milking event every day (hour labor/day) along with the cost of labor per hour (\$/hour) and (3) the expected additional feed required to produce the additional milk along with the estimated feed cost (\$/cwt of milk).

Knowing the number of milking cows in the farm, the net margin of an increase in milking frequency can then be calculated by subtracting additional costs from additional revenues. If this value is greater than zero, then the increase of milking frequency is profitable. The same reasoning can be used when switching from twice to three times daily milking, when switching from twice to four times daily milking, or even when assessing the net margin of decreasing milking frequencies.

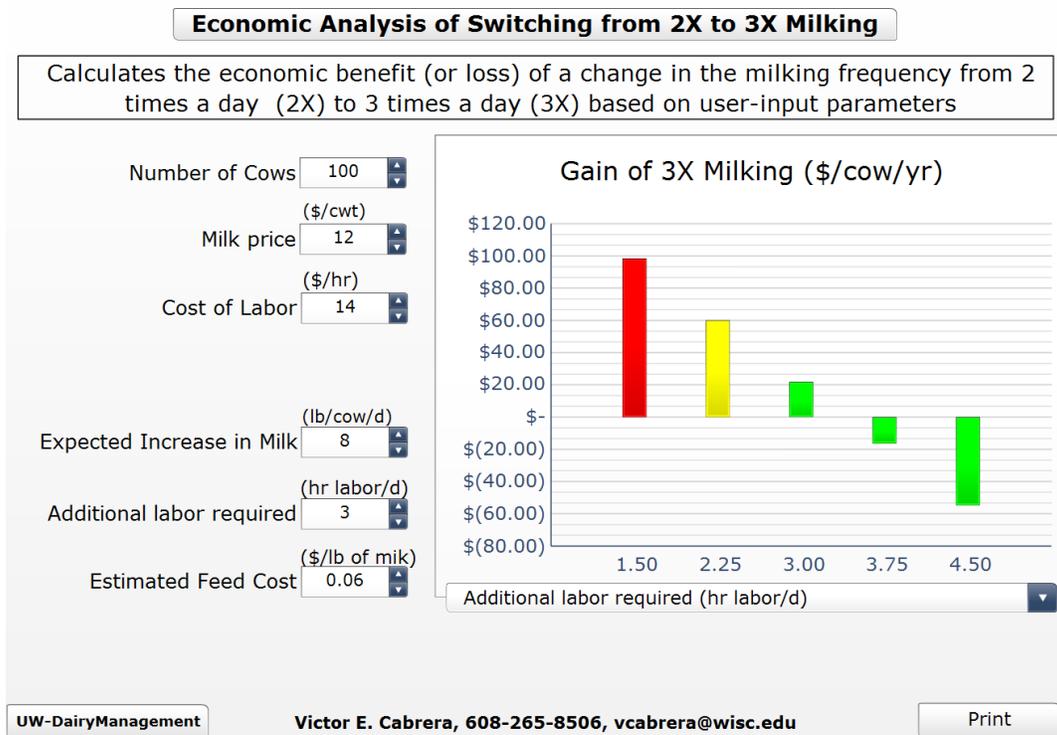
All the above can better explained with a case example. Let's think of a herd of 100 milking cows that is currently receiving \$12/cwt of milk and values \$14/hour of labor. Let's then assume that the expected increase in milk production when switching from twice to three times daily milking is 8 lb/cow per day, the additional labor required to milk one more time the cows in a day is 3 hour labor/day and the estimated feed cost is \$6/cwt of milk. Consequently, in a year a cow will have an additional revenue of \$350.4 (0.08 cwt milk/day x 365 d/year x \$12/cwt milk) while the additional expenses will be \$328.5 (\$175.20 of feed: \$6/cwt milk x 0.08 cwt milk/day x 365 d/year and \$153.3 of labor: 3 hour/day x 365 day/100 cows x \$14/hour). Therefore the net margin of switching from 2X to 3X in this particular farm for this particular conditions will be \$21.90/cow per year (\$350.4 - \$328.5) or \$2,190 for all the milking cows and therefore the proposition of increasing the milking frequency will be profitable and recommended.

However, many of the factors included in the calculation are rather uncertain. The most uncertain factors are probably the expected increased milk and the additional labor required per additional milking. Consequently, it would be prudent to make these calculations under optimistic and pessimistic

scenarios. For example what would happen if the milking frequency switching results in only 4 lb of additional milk per cow per day (pessimistic) instead of 8 lb? or what would happen if the additional labor required is only 1.50 hours labor per day (optimistic) instead of 3.0 hours?

In the pessimistic scenario the milk revenue will only be \$175.4 and consequently the net margin will be -\$65.70. However, in the optimistic scenario the revenue will remain the same while the costs will substantially decrease and consequently the net margin will be \$98.55.

The bottom line is that you need to run your own numbers and make your own assumptions. To help you on that process we have created a tool named "Economic Analysis of Switching from 2X to 3X Milking" and it is available for you in the UWEX Dairy Management Website: <http://www.uwex.edu/ces/dairymgt/> under Management Tools. This tool works directly in your web browser and it does not involve downloading or installation tasks. The tool requires only few inputs as discussed above and it is fairly intuitive. Results are presented graphically (see figure) and include optimistic and pessimistic scenarios to a user-defined uncertain variable.



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