

ANOTHER VOTE FOR INCREASED FREQUENCY

The same advice applied to voting in Chicago in bygone days may be applied to milking frequency: 'Do it early, and do it often.'

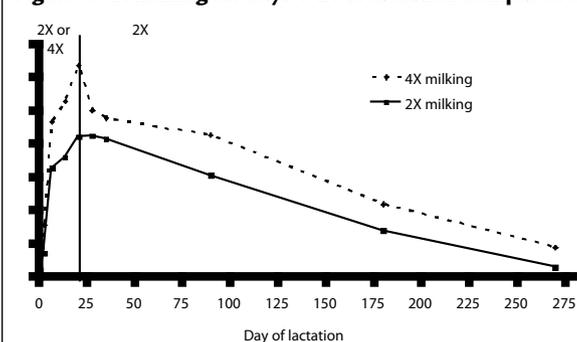
Editor's note: This article is summarized from an article "Researching multiple milking," by Emma Wall and Thomas McFadden, that appeared in the Pro-Dairy section of the December 2007 issue of *Northeast DairyBusiness*.

Many dairy producers have successfully implemented 3X, 4X or 6X milking, taking advantage of milk-yield response to frequent milking.

More recently, there has been growing interest in milking fresh cows more frequently to stimulate milk yield for an entire lactation. Research has shown that frequent milking for the first 21 days-in-milk (DIM) increases milk yield through the entire lactation. That means a small initial investment in time and labor can pay off for the entire lactation.

Researchers at University of Vermont

Figure 1. 4X milking for days 1-21 of lactation compared to 2X



Source: Modified from Wall and McFadden, 2007. Used by permission of the *Journal of Animal Science*; doi:10.2527/jas.2007-0318. Solid vertical line represents 21 DIM when udder halves, milked 4X, were switched to 2X milking. Data extrapolated from half-udder yields.

Table 1. Potential economic return of milking 4X daily during early lactation¹

Milking routine ²	Feed cost during frequent milking ³	Feed cost after frequent milking ⁴	Labor ⁵ cost	Misc. cost	Extra milk income cow/year ⁷	Total net income cow/year ⁷	Total net income 100-cow herd ⁸
4X 1-21	\$19.28	\$98.00	\$84.00	\$0.50	\$294.75	\$92.94	\$9,293.60
4X 1-14	\$12.86	\$100.75	\$56.00	\$0.34	\$210.29	\$40.33	\$4,032.85
4X 7-21	\$12.86	\$98.00	\$56.00	\$0.34	\$239.33	\$72.12	\$7,212.35

1. Table reproduced from Wall and McFadden, 2007. Used with permission from the *Journal of Dairy Science*; Vol. 90:5042-5048.
2. 4X milking for days 1-21, 1-14 or 7-21 of lactation, followed by 2X milking for rest of lactation.
3. Additional feed to support increased milk production during frequent milking (FM), estimated at \$0.92/cow/day.
4. Additional feed to support increased milk production after FM, estimated at \$0.39/cow/day.
5. Additional labor associated with extra milkings and animal handling during 4X milking, approximately \$4/day.
6. Cost associated with extra milkings, including inflation replacement, teat dip and towels, approximately \$0.025/day.
7. Extra milk income based on \$12/cwt.
8. Total net annual income for a 100-cow operation.

conducted studies to determine the optimal duration and potential economic benefit of frequently milking fresh cows. The udders of cows enrolled in the experiments are milked 2X on the left side and 4X on the right side. After the treatment period, the entire udder is milked 2X for the remainder of lactation, but milk yield for each udder half is monitored

separately. When the cow completes the lactation, daily milk yield of each udder half is multiplied by two to represent a "whole cow" response.

Figure 1 shows the response during the first experiment, which imposed 4X milking for the first 21 DIM. The 4X udder half produced more milk than the 2X udder half, both during 4X milking and through the remainder of

lactation. These results agreed with previous experiments conducted on cow groups – not just half udders.

Because the primary costs associated with this milking routine are incurred during the frequent milking period, researchers focused on decreasing the duration of frequent milking to a two-week period during early lactation. So far, they've studied 4X for the first two weeks of lactation, and 4X for days 7-21 of lactation.

The 4X for days 1-21 is predicted to be the most profitable, because milk yield response was greatest for that treatment group (**Table 1**). Researchers saw no 4X on milk composition and SCC.

Current experiments at UVM

Thus far, the Vermont research has focussed on a freestall system, with milking sessions of three hours. To determine the impact on dairies with tiestall facilities, researchers are currently milking cows 4X for days 1-21, with only a one-hour interval between regular and extra milkings.

They are also conducting a 4X milking

experiment on heifers only, and using edema scoring to determine if frequent milking decreases udder edema after freshening. Results of both these experiments will be available next year.

FYI:

• **Emma Wall** is working on her Ph.D. in animal science with **Dr. Thomas McFadden**, chair and associate professor in the department of animal science at the University of Vermont. The UVM frequent milking research has been reported in the *Journal of Dairy Science*: Vol 90(2): 716-720; Vol. 90(11):5042-5048. For a copy of the article, contact Wall at Emma.Wall@uvm.edu

Should you change your routine?

Should you change your milking routine to take advantage of benefits related to frequent milking?

Consider these factors:

1) Is your facility setup conducive to milking fresh cows first and then again at the end of milking? They should be able to go back to their pen to eat, drink and lie down between milkings.

2) How close is your fresh pen to the parlor? University of Arizona research indicates long walking distances or time away from the pen could negate the beneficial effects of frequent milking.

3) How long are your milking sessions? If they're less than three hours, the milk yield response may be less than that observed in University of Vermont research.

4) How good is your herd management? Would you benefit from seeing your fresh cows twice as much?

5) You should expect to see a decrease in milk yield when you switch back to 2X, but remember that cows will continue to produce more milk for the rest of their lactation than they would have otherwise.

6) Do you currently milk 3X? If so, it may be worthwhile to consider switching your entire herd back to 2X, and milk only fresh cows 4X. The expected milk yield response is similar to 3X, but the cost of labor and supplies is less.

Remember, as for any management that increases production, nutrition programs must be closely monitored and adjusted to maintain superior animal performance.