

Case Study: SRUC Dairy Herds

The Effect of Reducing Milking Frequency in Response to Covid-19



Across the three dairy units run by SRUC in the South West of Scotland, management has recently changed from 3x to 2x milking. This change took place on the 23rd March as a precaution to reduce labour demand in case of having to deal with staff self-isolating or off sick due to COVID-19.

With 3x milking, the milking intervals were 8, 7 and 9 hours apart (milking at 4am, 12pm and 7pm) and with 2x milking, 12 hours apart (milking at 6am and 6pm). It was important to stick to 12-hour milking intervals, as the farms manager wished to retain the night milking staff who previously did the 3rd milking, but also to minimise any loss in milk output. There is often a bigger drop in yield observed when milking intervals are not even when reverting back to a 2x system.

It was expected that there would be a bigger drop in milk production across the three units. However, there has been very little change in output or milk composition as shown in the table below, which compares milk output and composition before implementing 2x and then at roughly 3 weeks and 6 weeks later. Milk yield per cow actually increased initially at Crichton but this is likely due to lower producing cows either being dried off early or culled. There was very little difference in the days in milk at each unit between the reported time periods (no more than 5 days), so this would have little influence on yield per cow.

Milk Output and Composition with 3X and 2X Milking at SRUC's Three Dairy Farms

	3x Milking	2x Milking	2x Milking
	Daily average from 14th-22nd March	Daily average from 11th-19th April	Daily average from 27th April - 5th May
Acrehead Farm	Average no. milking cows = 180	Average no. milking cows = 180	Average no. milking cows = 180
Milk output (litres)	5,630	5,359	5,589
Milk yield/cow (litres)	31.3	29.8	31.05
Butterfat (%)	4.24	4.28	4.26
Protein (%)	3.49	3.47	3.51
SCC (x1000)	89	82	100
Barony Farm	Average no. milking cows = 180	Average no. milking cows = 172	Average no. milking cows = 162
Milk output (litres)	5,630	5,155	5,266
Milk yield/cow (litres)	31.3	30	32.5
Butterfat (%)	4.33	4.4	4.45
Protein (%)	3.24	3.24	3.2
SCC (x1000)	90	112	200
Crichton Farm	Average no. milking cows = 176	Average no. milking cows = 179	Average no. milking cows = 177
Milk output (litres)	5,468	5,697	5,830
Milk yield/cow (litres)	31.1	31.8	32.9
Butterfat (%)	4.22	4.15	4.08
Protein (%)	3.31	3.28	3.27
SCC (x1000)	96	82	98

Note: data is based on average figures over a 9-day period before moving to 2x on 23rd March and post change, a 9-day period approximately 3 and 6 weeks later. Data is from Milk Payment Testing Results through NML. Out of the 180 cows at Acrehead, on average 45 cows were still milked through the robot.

There was the concern that reducing milking frequency could lead to higher cell counts and more mastitis. However, early indications are that cell counts were not affected and so far, the number of mastitis cases is on a par or less than in the previous months, as shown in the following table.

Monthly Cases of Clinical Mastitis at SRUC's Three Dairy Farms

Month	Acrehead	Barony	Crichton
Apr-20	4	9	2
Mar-20	2	8	5
Feb-20	4	7	5
Jan-20	4	10	4
Dec-19	5	8	5

It has been observed that despite little effect on cell counts or mastitis rates, some cows do appear to be carrying a lot of milk in the last hour prior to milking, with possible discomfort.

With one less milking per day, it was thought that the average lying time would improve. The three farms use the Cow Alert system from Ice Robotics Ltd for heat and lameness detection and the system also records lying time. Under ideal conditions, cows should lie down for 12-14 hours/day and as a rule of thumb, an extra hour of lying time will give roughly an extra litre of milk.

The average lying times for two of the herds before and after the change in milking frequency are detailed below. Lying times were only available for Acrehead after the 24th March when 2x milking had already commenced.

Average lying times on 3x and 2 milking

Farm	Lying Time on 3x Milking (hours/day)	Lying Time on 2x Milking (hours/day)
Crichton	12	11.8
Barony	10.2	10.4

Note: Lying times are a daily average between 14th – 22nd March and 10th - 19th April

There is an overall higher lying time at Crichton due to the recent installation of mattresses, improving cow comfort. There was no difference in lying time when comparing 3x versus 2x milking, possibly due to the cows producing more milk at the 2x milkings (as yields have been similar), meaning each milking is taking slightly longer.

Other observations from this management change are that staff appear to be more relaxed, with more time in the middle of the day for other jobs, without the lunchtime milking. Less stress and less time pressure on staff are positive for mental health, job satisfaction and being able to retain staff in the long-term. These are all very important considerations on a dairy farm, with herd performance being only as good as the people employed.

Key Messages

- The milking interval will have an impact on the response to 2x milking. Keeping to a 12 hour interval could minimise the drop in production.
- Be aware that cell counts and mastitis count increase, but with attention to detail in the parlour and keeping cows clean, milk hygiene quality can be maintained.
- There are benefits for staff, reduced labour and other costs associated with a 3rd milking.



For more detailed information about dairy herd management see the [Dairy Cattle](#) section on the FAS website or contact our helpline on 0300 323 0161