Once a Day Milking Version 1.4 4 October 2014

Most of this is about whole season once a day milking, but if changing to once-a-day half way or later through the season, the following is suggested.

Cull the low produces and high somatic cell count cows. Milk solids (MS) daily production is likely to drop by about 0.1 kg per cow per day which at $5 per kg of milk solids is worth $190 a day in a 380 cow herd, the average size in 2014.

The following is not a guaranteed cure, but is interesting. If others get success from it I'd like to hear from you please. A farmer had Johne's in the dairy herd quite badly, with about three cows showing signs each year. I was asked in 1998 to consult and it was agreed to go organic and Once a Day Milking all year.

Like most diseases, stress is a contributor. OAD cows are much less stressed, healthier, maintain, better condition and have a higher conception rate.

The pasture was analysed for the 17 important minerals. Calcium was very low which was confirmed in pastures that had few and small clovers, perennial ryegrass was hard and pulled out, there were few earthworms and tight hardpans with a low organic matter content.

Bloat which had been a problem for ten years stopped and more pasture than ever was grown. Metabolic problems decreased, AND there has been no Johne's for fifteen years. The farmer had been careful to isolate all cases immediately and dispose of them as soon as possible and to not feed suspect milk to the calves.

In New Zealand 90% of the cows that are milked by automatic milking choose to be milked just once a day. It was also found that none come to be milked between 3 and 6 am and most like between 8 and 9 am. This can cause a three hour queue of cows in the lane to the dairy, and wasted manure in the lane. Consider shading and sprinkling it.

Use Dairy Cow Numbers for Max Profit spreadsheet figures to see the costs per milking, and the optimum number of cows to milk on your farm for maximum profit. Applying this has increased profits by thousands of dollars for many. Most farms milk too many cows, so they can't produce to their ability.

A better feed situation and better cow condition occur.

In 2004 in NZ there were about 300 herds milking OAD, some for decades, and most users swear by doing so. One has a herd of 900.

In 2006 there were about 750 herds on OAD, with some cows producing 500 kg MS per cow pa. The NZ average per cow then was under 400.

Dairying adversely affects one's lifestyle and the obtaining of good staff. OAD can help with both these. Milking can be after breakfast in the light when cows prefer to be milked.

From about seven years of age I aimed to be a dairy farmer - apart from about two days when I was going to be a steam engine driver! However, in 1960, after five years of actual milking 100 cows twice a day on my own farm which I was also developing, I employed a 25% sharemilker, who milked and tended to the cows' daily needs for 25% of the milk cheque, and we paid all costs.

I enjoyed buying neighbours' run down land and improving it, to be able to increase our farm and herd size to 220 cows by 1970. I also did agricultural contracting, improving land for others, and in winter manufactured and sold farm machinery I had invented.

This leads me to what my wealthy hotel-owning late uncle told me in South Africa when I was 22. "Why do you want to milk cows? When Hell was full, Satan created dairy farms", he said jokingly, but with a serious tone.

However, dairying earned us money to semi-retire at age 36, and later sell the farm and buy flats and then retail shops to lease for three times the net profit of farming.

I might have milked cows for longer had I known about once a day milking.

Benefits

Breeding OAD animals can reduce the production decreases to very little, because some Jerseys drop very little. Large fully-fed and high producing cows will drop more on average, than underfed low producing ones, of which there are many in New Zealand, but selecting for high production and using

semen from bulls selected for OAD helps.

As well as a big time saver, OAD milking costs are obviously lower. Some farmers who increased cow numbers, as is recommended, claim to have increased their net profit on OAD.

High Production Worth (PW or PI in some countries) cows when changed to OAD didn't perform relatively better than lower PW ones. Some high producers dropped a lot, some not at all, which is exciting for the future OAD herds.

Because NZ is paid for milk solids with a three cent a litre penalty for milk, Jerseys are best for OAD, because they have more concentrated milk and a relatively higher milk solids holding capacity than other breeds. Obviously the North American Holstein cows being milked three times a day and producing large volumes of low milk solids milk in North America will not be suitable for OAD.

I am against overstocking and underfeeding as done by too many in NZ, but with OAD and the same number of cows this would reduce, and allow the herd to produce to its potential. The many overstocked farms would lose little if anything, by changing to OAD and feeding their same number of modern high BW cows better - provided they are Jerseys.

If everyone produced a little less milk the payout would increase, because the more produced the more sold at commodity prices, which decrease when surpluses are produced. The Australian drought and higher grain prices reducing milk production and increased the payout to New Zealand dairy farmers substantially in 2007/8. New Zealand produces only 2% of the world's production, which is all pasture fed so better and in demand, therefore with correct marketing should fetch higher price. Auctioning milk won't achieve this because it allows the buyers to set the price. Read Fonterra.

OAD is not only in New Zealand. A top UK grazing farmer with over 400 NZ Friesians who comes to New Zealand regularly to learn, and has an NZ made Turn-Style, changed to OAD.

In a comparatively low producing Jersey herd, 25% of cows hardly dropped in annual production at all. In a fully fed good Friesian x Jersey herd some cows went dry after six months. Most of these were first calvers of the bigger breeds. First calvers with their small tight udders don't do as well on OAD. See below.

Overseas readers should keep in mind that most OAD herds in New Zealand are fed only pasture, and supplemented only with pasture silage and/or hay.

Dairying here is not as profitable now as it was between the 50s and 70s, partly because so many people like dairying (a monthly milk cheque, and cows are nice things) that farmers over-produce and under-market. Look how Arabs control the price of fuel - they cut production and up the price goes.

Dairy farmers would never do this because they are individualists, but if everyone changed to OAD the volume would drop and the price could go up, and could give the same net return. However, this would mean that even more would want to milk cows! So we'd be back to square one. Incidentally, it takes only about 5% overproduction to create a surplus and prices to drop and a 5% decrease in supply for prices to increase. Google for Unsold cars. You'll see thousands of unsold cars in many countries, but even with these surpluses the price of cars didn't drop.

A main aim of OAD is to save time, so implement time-savers whether you milk once or twice a day.

When I encouraged a US dairy farmer in Maine to stop washing pasture grazed clean udders in 1991, his milk increased at the first milking and half a minute per cow was saved at each milking, giving his 50 cows 40 minutes more time in the paddock each day and 40 minutes more manure in the paddocks so less in the parlour. He also had 20 minutes longer in bed in the morning and got in for the evening meal 20 minutes earlier. Both pleased his wife. His cows preferred not being washed - they fidgeted and tap danced when they were being washed US style which involves a lot of rubbing and drying.

When most of New Zealand changed to not washing, milk quality improved and mastitis decreased. Quality because New Zealanders washed, but didn't dry, so some moisture got into the milk. Mastitis reduced because there was no transfer of infection by hands.

Typical NZ preparation and cluster application is 5 seconds per cow. Northern Hemisphere milkers can take a minute, including parlour gate operations, which is a negative for the milker and the cow, which just wants to get rid of its milk and get back to the paddock.

A comparison between NZ and USA cows showed NZ ones have a milk flow of 3 litres per minute and US 2.3, thanks to New Zealand's 40 years of selection for fast milking in the herringbone batch milking system and in the even faster rotaries.

All overseas farmers should consider installing an NZ swing-over straight rail and auto systems to allow one person to milk about 100 cows easily in an hour, or, better still, an external rotary, which allows one person to milk about 300 an hour. With the latter, milk production increases because cows and milkers love rotaries and cows have more time in the paddock. The exact milking time will depend on the milker, the brand of milking machine, the milking speed of the herd and the quantity (just calved or nearly dry) of milk being produced at the time.

In New Zealand, OAD is being taken seriously by researchers (now that some farmers have been doing it successfully for decades). The NZ Dairy Research Corporation (DRC) started a trial in June 1999 milking two herds of Friesian cross Jersey cows, which are very common and popular in NZ. One was 30 cows milked twice a day on 10 ha (25 acres) and one mob of 35 cows milked once a day on 10 ha with 20% replacements. The comparison ran for three years to see if close to similar production could be obtained from the higher stocked per ha OAD system.

First year figures were 21% lower production per cow and 14% less per ha. There was little difference in fat and protein percentages. The OAD cows were 26 kg heavier at the end of the lactation. Researchers then increased the OAD herd size by 17% to give about equal total production, but not total earnings, because it costs about $800 to own and milk a $2,000 cow on OAD or $900 on twice a day.

The figures published by theorists who published much higher profits from OAD, were completely wrong because they didn't allow for the cost of keeping extra cows.

Benefits of OAD

1. Social and family life improve tremendously.
2. The mental attitudes towards milking are better. Cows respond well to this.
3. More time to enjoy farming, smell the roses and do things the family like.
4. There is more time for stitch-in-time to be applied with tasks such as lane maintenance, applying fertilisers, growing forage crops, etc. Successful farmers are those who do things on time. OAD gives time to achieve this.
5. More time for thinking and planning.
6. Less calving blues and stress which increasing numbers of dairy farmers suffer each July, August and especially September, when the weather doesn’t improve and feed becomes short.
7. Cows are more relaxed, partly because the milkers are more relaxed. Cows like calm milkers.
8. Cows are keener to come and be milked. On average, 90% of the 150 mostly Friesian cows which present themselves for automatic milking at the Dexcel Greenfield project do so only once a day.
9. Lameness and hoof problems and treatment decrease substantially.
10. Lanes and gateways get half the wear.
11. Half the energy (feed) is wasted by walking, which is halved.
12. More time to do nice things on the farm such as plant trees.
13. Staff are easier to obtain and keep.
14. Larger farms per parlour become possible.
15. Milking costs are almost halved.
16. Half as much effluent has to be washed and spread. This can be an environmental benefit.
17. Half the number of paddocks and water troughs are required.
18. Cows milked OAD in the morning don’t have to walk along hot lanes and stand in hot concrete yards in the afternoon heat.
19. Cows maintain better condition, giving higher conception rates and fewer slips, which is a bonus to get concentrated calving and fewer empties (culls) on typical NZ seasonal milking.
20. More time is available to check cows in the paddock in the early evening when most bulling activity takes place. This is a help in achieving concentrated calving.
21. No fertility transfer from day to night paddocks.
22. Less pasture trampling and soil damage at gateways.
23. Less bloat.
24. Cows are longer in paddocks and less time on lanes and concrete yards.
25. More farm work can be done, which may mean fewer staff will be needed, which could also mean less housing.
26. Fewer after-calving metabolic problems can be expected because cows are in better

condition, and are not subjected to having to produce so much milk immediately after calving.

27. Overall animal health improves, lowering its cost.

28. With pastures, animal manure is the most valuable fertiliser there is. OAD halves waste in lanes and gateways, so more manure is returned to growing pasture, saving fertiliser and giving faster improvement of pastures and extra hidden profit.

29. Grazing of paddocks is more even and thorough, reducing the need for topping (clipping).

30. A solo parent with young children, who doesn't have enough cows or income to pay staff, can milk after the children have gone to school.

31. When a farm is not profitable enough so outside work has to be done to retain it. The milking can be done before going to work in the morning or after in the evening, or a spouse can milk at any time.

32. If funds aren't available to increase the parlour size to reduce milking time, and twice a day milking takes, say, six hours a day, including fetching cows and cleaning up, OAD could bring the time down to a more acceptable three and a half hours a day.

33. Farm bike fuel and wear are reduced.

As well as Jerseys, the new Kiwicow (crossbred from crossbred bulls) may prove to be ideal as a base to select OAD cows. See the LIC KiwiCross figures, which show how much better they are on OAD. LIC have done an excellent job in developing this new medium size dairy breed for grazing and high fertility. They also perform well under once a day milking .

Some of those who changed to OAD have claimed increased profits.

If unsure of the possible cost benefits, use the VJ spreadsheet to calculate yours.

Alternating each day's grazing between close and distant paddocks reduces the ill effects of long walks in any one period, and reduces the drop in milk production which occurs when cows walk about 2 km (1.25 miles) or further, to and from the parlour.

On large farms it pays to have the cows graze close paddocks after calving, while their udders are very large and tight.

New Zealand Jerseys have been selected for high milk fat for a more than hundred years, and for high protein since the 90's, so many have high milk solids levels (over 10% MS) meaning that about 40% more MS can be stored in udders than in low MS (about 7% MS) cows.

Most NZ cows have been selected for no-preparation, fast let-down and fast milking for 40 years, with excellent results. Unfortunately some NZ farmers still waste time preparing and machine stripping (pressing down on clusters to get the last drop of milk for no benefit). This antiquated practice can cause a second let-down in some cows.

Problems

Because with OAD it takes longer to rid cows of their colostrum, the first milk should not go in the vat (tank) for eight or nine milkings, which is as many days on OAD. This is not a disadvantage here, where the first colostrum can be sold at three times the price of ordinary milk, and the later colostrum can be kept for calf rearing.

Mastitis treated milk must also be held back for twice as long, because of fewer milkings. Avoid using antibiotics requiring 12 treatments.

Somatic cell counts can increase. In the DRC comparative herd trial the TAD (twice a day) average somatic cell counts were 224,000 cells per ml, and 292,000 in the OAD herd. At the end of season some OAD cows had very high SCC and had to be dried off. Mastitis was slightly worse in the OAD herd. However, the TAD figure of 224,000 SCC shows that they had a problem. My best dairy farmer client's TAD Jersey herd's SCC is around 60,000. A good NZ commercial herd on OAD for decades had an SCC of about 130,000. It pays to cull the high SCC cows before changing to OAD.

At least one very high endophyte perennial ryegrass caused cows' SCC to rise. It dropped the next day on safe endophyte perennial ryegrass. This increase and decrease happened several times. There are safe endophyte varieties which have Peramine to discourage insect attack, but without the animal-toxin Lolitrem. Some give between 7 and 13% extra milk solids per cow, depending on the time of the year. Most of these increases are in summer and autumn when endophyte toxicity is highest.

Endophyte levels are higher in the stems and seed heads, so avoid grazing these, and aim to have 25% clover and a few other grasses in pastures, to reduce the concentration of endophyte. Summer

forage crops help reduce the total intake of endophyte. See Animal Health > Endophyte and Elements > Calcium - Lime.

NZ research stated that first calvers "were no less tolerant to OAD than older cows", but one Jersey farmer reported, "Some first calvers didn't take to it." If identified soon enough they could be sold or leased for a year to a TAD farmer.

LIC farmers reported that some high BW Holsteins dried off before December, and a lot of young cows leaked milk.

The OAD culling rate will be higher initially. See below.

OAD MS production can be expected to increase as herds are bred from OAD semen.

Future

A problem with first calvers on OAD is that you only get one chance per day to get a let-down. Patience and early diagnosis to use a let-down hormone could help, or milk them twice a day until settled, but this should be the last resort. Solutions include -

- Rearing more calves from the best OAD cows to allow for increased culling.
- Leasing first calvers out to a twice-a-day farmer for one or even two lactations.
- Selecting and proving OAD bulls, which will have a major influence on increasing OAD production. Meanwhile use high percentage MS semen.
- NZ Livestock Improvement Association is selecting bulls for OAD qualities.
- If OAD semen is not available, use your own bull reared from your best OAD cow, or his semen, until OAD semen is available.

Morning of evening?

When milking once a day one needn't be tied to tradition. Cows soon adjust to whatever reasonable regime you use, and will accept changes made gradually. In winter, milking after lunch when warmer, is nicer for milkers and cows, and frost damage to pastures is less. The cows also get the benefit of eating afternoon pasture which is higher in sugars and energy and lower in nitrates. If full by nightfall, cows sleep comfortably with less walking. In summer they can be milked in the morning before it gets too hot. If working off the farm, evening milking could be better, because then one is less likely to rush the cows to get to work, one can attend to animals as required, can check for bloat after milking, and the cows will be getting afternoon pasture.

Cows can be fed some silage or hay in the late morning and pasture after milking, or a forage crop, or more supplements then. Never graze (or feed) a tainting crop such as brassicas before milking, because this can taint the milk.

If your soil is prone to pugging, plan to avoid the making of mud, most of which is made in the last hours before the cows leave the paddock to milk, so don't go near the cows until getting them. Otherwise move them to a chip or bark pad or sacrifice area in the morning, and milk in the afternoon. The pad or sacrifice area must be clean, so as not to foul teats.

Check with your dairy company regarding milk collection times.

Be careful of some figures

Publicity was given to OAD in 2007 when LIC consultants and Dexcel scientists claimed that the average annual extra net income from 22 OAD farms around the country was $43,000 higher than twice a day milking, which is impossible. The report included a case study involving a Canterbury farm that showed milking twice a day delivered a farm surplus per hectare of $1,307 as against $2,049 for once a day, however they didn't allow for the cost of 17% extra cows at 8% interest and 1% deaths on more cows, or other things. I spoke with two of the authors and told them that their figures were impossible, which they didn't like, however they agreed that they had omitted some costs. They didn't know or allow for the annual cost of keeping each extra cow at $800 on OAD cow, and $900 on TAD.

An average herd of 320 cows times $800 per cow, costs $256,000. 17% of this is, which is the usual increase in cow numbers on OAD is $43,520, so that much more has to be produced.

Their figures proved that most dairy farms in New Zealand were losing profits by being overstocked from following LIC and DairyNZ advice. Enter your figures into Dairy # Cows For Max Profit. It takes only a few minutes. Using it has increased the profit of many farms by $8,000 to $20,000 just by milking fewer cows. Costs and farmer's work decreased and lane and pasture damage reduced.

Pastures are damaged when large numbers of cows are moved on and off paddocks.

Farm by figures, not by the seat of your pants or panties! I've found that women on many farms are better than their husbands with figures, are more astute, listen, understand and are more willing to apply improvements.

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