



Key Points:

- Automatic milking allows very flexible routines.
- Essential to have some sort of routine to ensure tasks get done in the right timeframe.
- Schedule the timing to suit your farm, animals and the people involved.

Daily routine for large herd automatic milking systems

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On any farm, every day is different; there is always an element of unpredictability. But it is important to have a routine that ensures that all of the necessary tasks are conducted each day. This becomes even more important with an automatic milking system (AMS).

The routine on an automatic milking farm is much more flexible than a conventional dairy farm where the routine is built around morning and afternoon milking sessions. Despite this flexibility, you still need a routine to ensure tasks get done regularly.

A large herd brings added complexity. There will be several people working at the farm and they each need to know what tasks they are responsible for. This Info Sheet provides some guidelines for developing a routine for a large AMS herd. It is not a recipe. Rather, it is intended to demonstrate a working routine that is practical and that might be adopted (with or without modification) on farm. While we have recommended the rough timing (morning or afternoon), the specific time you do these tasks is flexible, and can be customised for the individual farm, work routines and the people involved.



For examples of specific daily routines used on AMS farms, refer to FutureDairy's AMS labour case studies:

www.futuredairy.com.au/AMS_Case_Studies.php



Above: When you arrive at the dairy in the morning, assess the situation for an indication of overnight traffic and milking activities.

Morning tasks

Monitoring

When you arrive at the dairy in the morning, observe the current situation. Assess what cows are in the waiting yard (if you have one); a visual appraisal will give you an immediate indication of overnight cow traffic and milkings.

Ask yourself questions such as:

- Would you expect this number of cows at the dairy at this time of day?
- Does everything sound and look right?
- Have the cows that were due to be drafted overnight made their way through the system or do they require fetching?
- Are there too many cows to put through a wash at the moment (without creating an extended waiting time)?

Fetch cows

Someone will need to fetch any cows that haven't come to the dairy on their own. If you have a 3-way grazing system, your routine will need to include fetching cows three times a day (once from each pasture/feed allocation).

The ideal timing would give cows enough time to exit the area voluntarily without exceeding 16 hours since the allocation opened. (Research has shown that milk yield and udder health are compromised if milking intervals exceed 16 hours). However this usually results in very unsociable hours so most AMS farmers compromise and fetch cows at times that suit their routines.

The table overleaf gives an example of a daily routine that has reasonably sociable hours. Note that cows have a minimum of 5 hours to voluntarily exit any one paddock.

In the perfect world the cows that remain in allocation C would be fetched at around 4am but in this case the farmer prefers to start his/her day around 7am but is happy to do a final fetch after dinner at around 7pm (allocation B).

Allocation	Active access time (cows drafted to this area)	% feed allocated	Fetch time	Hour available for voluntary exiting	Total max time a cow can be in this allocation
A	8pm to 5am (9 hours)	40%	Mid-Late morning (say 10:30am)	5 ½ hours	14½ hours
B	5am to 2pm (9 hours)	40%	7pm	5 hours	14 hours
C	2pm to 9pm (7 hours)	20%	7am	10 hours	17 hours

Milking fetched cows

You might choose to 'sweep' the cows at the dairy before bringing in the fetched cows. 'Sweeping' refers to encouraging cows through the dairy while preventing more cows joining the existing queue. This ensures cows already at the dairy don't get caught up in a new queue of cows (i.e. the fetched cows).

It is a good tactic if you are concerned about how long some cows might have already been at the dairy. If fetched cows are overdue for milking, you may also choose to sweep them before opening up the queue to cows that have voluntarily arrived at the dairy.

Whether or not you sweep the existing cows or fetched cows is entirely up to you and will be determined by your confidence that the cows that are present haven't been loitering for an extended period. Your decision may also be influenced by the number of cows present, the time of day and the anticipated pending cow traffic of other herd mates.

When you sweep cows, a backing gate or manual gates can be used to prevent additional cows joining the queue. Don't forget that you will need to 'reopen' the yard for the rest of the herd once the queue of swept cows dwindles.



Above: Cows that haven't come to the dairy on their own need to be fetched from their pasture allocation. Time these fetchings in your daily routine to avoid the need for fetching at unsociable hours (such as during the night).

Cleaning

If you have a robotic rotary you will need to manually initiate a system wash. To do this, you need to inform the system that it is time to stop allowing cows onto the platform while continuing to milk the cows that are on the platform and continue rotation to allow milked cows to exit the system. Once you are confident with the operation you may choose to initiate the system wash from the computer at the house so that the system is idle and ready for a wash by the time you get to the dairy.

Regardless of whether the system washes are manually initiated (robotic rotary) or fully automated (some box AMS), you will need to choose suitable wash times. Doing a system wash early in the morning gives the best opportunity to achieve a desirable interval between system wash(es) throughout the day. Follow the manufacturer's recommendations for the number of system washes performed each day.

The pre-programmed wash times will depend entirely on the operator, your daily routines, other commitments and the voluntary cow movement of the herd (which is usually fairly consistent in a well-operated and stable AMS).

If you have a robotic rotary, it is a good idea to stay at the dairy during the system wash so that you can initiate a restart as soon as the wash is complete. The washing time is a good opportunity to do some regular maintenance and clean equipment around the dairy.

If you haven't already done your computer monitoring, now is a good time. This allows you to get draft cows set for drafting, attention cows flagged etc prior to any cows entering the platform after the system wash.

Another advantage of the robotic rotary for large herds is the ability to finish off or initiate milking with a 'manual milking.' This is particularly useful to relieve traffic congestion and cow waiting times due to unforeseen events such as weather, power outage or scheduled/unscheduled maintenance.



Above: Computer monitoring is best done before or during the system wash to set cows for drafting, flag cows for attention, etc

External surfaces

Regardless of the type of automatic milking equipment, a really comprehensive wash of external surfaces should be done once a day, either at the morning or the afternoon system wash.

Afternoon is normally warmer and a nicer time to be splashing water around; cow demand for the equipment is generally lower in the afternoon than the morning and cleaning in the afternoon may set you up for a good night with no call outs etc. Whichever option you choose it is best if the intensive surface cleaning is conducted at the same end each day so that the interval between them is reasonably consistent. Also note that a less comprehensive/hose down is still required at the other end of the day.

The robotic rotary platform is not moving during the system wash so it is a good opportunity to clean external surfaces, and conduct a visual assessment of the equipment. Cleaning the external surfaces during the system wash has the added bonus of minimising the disturbance/distraction for cows and any potential interference with cow traffic.

Once the fetched cows are milked and the system cleaned, there is no real pressure to do anything within the dairy and you should be comfortable the day's milking sessions are well setup and underway.

Yard washing can be conducted at this time but is more likely is done during slower periods when cow traffic at the dairy is lighter.

Colostrum/treatment cows

With a large herd operation you have three options for managing colostrum and treatment cows.

1. Batch milk these cows through a separate herringbone facility (either purpose built or your old milking facility).
2. Batch milk these cows through the AMS (more practical with the robotic rotary than with box units), in which case they should be milked before conducting a system wash.
3. Allow these cows to voluntarily milk themselves through the AMS (not an option for the robotic rotary as it cannot divert milk from the bulk milk vat).



For more information see FutureDairy Info Sheet: Managing colostrum and hospital cows in large automatic milking herds

If you manage the colostrum/treatment cows in a separate facility, a good time to attend to these cows is after the fetched cows are milked and the system has been cleaned. This is generally a less pressured time of the day so you can give these cows the full attention they require.

Any cows or heifers that are due to enter or re-enter the voluntary milking facility at the next milking should have their udders singed and their tails trimmed at this milking session. The AMS should be a calm, relaxed milking environment. Any manual handling or intervention of cows (especially heifers) should be done in a purpose built handling facility. Cows that are cleared to join the main milking herd for the first time (eg colostrum or treatment cows) should be drafted to be milked in the AMS rather than the treatment facility, and monitored for their first milking. This is to ensure milk let down and successful automatic cup attachment occur and to respond to any other issues that may require intervention. If you choose to milk new cows in the AMS without supervision and release them directly to the paddock with the main milking herd you will be unlikely to see their first automated milking and will need to rely entirely on the data captured by the system.

Monitoring

After you have attended to the dump cows and the new AMS cows, it is worthwhile going back to the dairy to complete the days'

monitoring routines. This is a generally a broader assessment of the system and might focus on performance indicators such as: feed stations performance/utilisation, grain consumption, milking frequency, cow traffic, waiting times, new cows that entered milking herd yesterday or over the past few days, traffic of heifers that are in training etc.

Also make a conscious effort to identify and/or anticipate anomalies and the effect this could have on cow traffic, animal behaviour and milking frequency, for example:

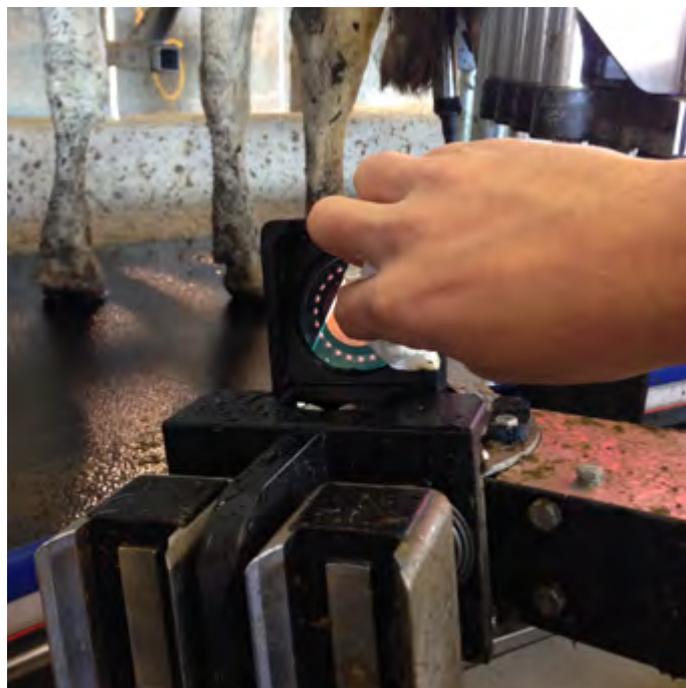
- Congestion at grain feeders.
- Cows trafficking earlier or later from scheduled pastures.
- Overcrowding in smart gate interchanges.
- Cows loafing in strange places.

During the day

Most AMS farmers allocate the middle of the day to setting up pasture fencing and seasonal tasks such as feeding calves, managing dry cows and young stock, feeding out, training heifers, pasture improvement, fodder conservation etc.

Regular checks

During the day, periodically check on draft cows, priority cows and wash the cameras. Aim to do this about every 3-4 hours during day. The timing depends on how much the alarms/alerts are used during the day and your preference for visual checking versus electronic monitoring. It also depends on the current situation and you may find yourself looking over the dairy more frequently (often in passing) at certain times of the year, for example, more often at calving and less often during more settled periods.



Above: Clean camera lenses or lasers several times a day to prevent alarms and callouts.

Afternoon

You can more or less follow morning routines (maybe change order) with slightly different emphasis on some tasks. For example you might choose to perform more comprehensive monitoring in morning and put more attention to cleaning in the afternoon. In the afternoon it might be more convenient to milk hospital/colostrum cows first.

Tick when included in your own routine

Checklist – tasks that need to be included in the daily routine

Task	Timing considerations
VISUAL MONITORING	
Morning assessment – observe current situation for an indication of overnight cow traffic and milkings.	Best scheduled as one of the first tasks of the day.
Quick assessment of milking equipment and cows and listen for unusual noises or other anomalies that may risk milking capacity or animal welfare.	Several times as day – when passing through the dairy for other reasons.
FETCH COWS	
Fetch cows from stale pasture allocations.	3 times a day if you have 3-way grazing.
CLEANING	
Clean robot laser/camera lenses.	Several times as day – when passing through the dairy for other reasons.
System wash.	Follow manufacturer's recommendations for the number of times a day. Aim for relatively even interval between washes through the day.
Clean external surfaces	Twice a day: one comprehensive clean and one lighter clean.
Initiate vat wash. Check refrigeration/agitation is operational.	Depending on the level of automation with vats/cleaning. Timing depends on tanker collection times.
Yard wash.	At least once a day. Timing depends on operator preference. Generally at times of the day when there is less cow traffic at the dairy.
MONITORING COMPUTER REPORTS	
Morning review of cows that have been drafted and flagged for attention; events occurring overnight.	Start of the day, or remotely before arriving on site.
Reviews of individual cow and system performance e.g. feed utilisation, grain consumption, milking frequency, waiting times, cow traffic; particular attention to cows that entered the milking herd recently and heifers in training.	Every day, allow at least 15 minutes. Monitor more regularly after making changes to settings or allocations. It pays to have a quick visual assessment of the operation to check the changes are effective.
DEALING WITH ANIMALS THAT REQUIRE ATTENTION	
Drafted cows requiring health checks, AI.	Avoid leaving drafted cows standing on concrete for extended periods. If your drafted cows will not be attended to for more than an hour you should ensure they have access to feed, water and a comfortable loafing area. Remember if they associate being trapped in a concrete yard with no food or water they will be more reluctant to attend the dairy for future visits.
Colostrum/treatment cows.	Twice a day.
Preparation of cows to re-enter the milking herd in the coming days e.g. udder singeing, tail trimming.	This could be a morning or afternoon task, depending on your other routines. Remember this should be done in treatment facilities.
Supervising first milkings of cows re-entering the milking herd.	This could be a morning or afternoon task, depending on your other routines.
FEEDING	
Set up fences for fresh pasture allocations	Some AMS farmers set up all the weekend's pasture allocations on Friday – to give them more time off over the weekend.
Placement of supplementary feed on feedpad if applicable.	Number of times this is topped up will depend on your feeding system, volume of supplementary feed allocation and how many pasture allocations you are supplementing.
CALVES AND HEIFERS	
Calves on milk.	Probably twice a day (depends on your calf feeding system).
Heifers.	Timing depends on your management system and routines.
SEASONAL ACTIVITIES	
E.g. pasture improvement, forage harvesting, joining, blanket animal health (e.g. vaccinations), fertiliser spreading, drying cows off, dry cow and springer management.	Most AMS farmers have a decent block of available time in the middle of the day for this.

FOR MORE INFORMATION

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