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InfoSheet

AUTOMATIC MILKING SYSTEMS

## Key Points:

- AMS box units have the capacity to dump or divert milk that cannot go in the bulk milk vat.
- Robotic rotary does not have this capacity.
- With a large herd, the number of colostrum/ hospital cows may affect cow traffic of the main milking herd.

# Managing colostrum and hospital cows in large automatic milking herds

By Kendra Kerrisk and Lee-Ann Monks

**With a large herd automatic milking system (AMS), it is important to work through the logistics about how to deal with milk that cannot go in the bulk milk vat: colostrum and milk from cows treated with antibiotics ('hospital cows'). AMS box units have the capacity to 'dump' or divert colostrum or antibiotic milk.**

The robotic rotary does not have this function so colostrum and hospital cows need to be milked as a separate batch and the plant mush be washed before milking of the main herd recommences. With a large herd, the number of colostrum and hospital cows can significantly affect cow traffic of the main herd.

For example, a split calving herd of 800 cows could have up to 50 colostrum cows to handle on any single day, or even more if cows are synchronised at mating. You'll need a system that will ensure that colostrum and hospital cows and heifers are milked completely at regular intervals while the main herd (400-700 cows) is voluntarily moving around the system and milking themselves.

*Above: With a large AMS herd, the logistics of handling colostrum and treatment cows requires careful planning.*

## Separate herringbone facility

One option is to install a small herringbone milking facility. If your old dairy was a herringbone, you may be able to maintain at least one side of it to serve this purpose. Some farmers have a purpose-built single-sided herringbone in their automatic milking facility.

***For more information refer to Info Sheet: Infrastructure for large herd automatic milking.***

If you milk colostrum cows and heifers through a herringbone facility for the first few days, the initial milkings and treatment will be no different to management in a conventional milking system. Sometime during the colostrum period freshly calved cows and heifers should have their tails trimmed and udders flamed in preparation for transfer to the automatic milking system.

Hospital cows can also be milked through this facility until their treatment withholding period is up.

### Benefits

When an AMS is operating at or close to full utilisation, a separate herringbone facility allows colostrum/hospital cows to be milked without disturbing voluntary cow traffic. With voluntary milking, even at low utilisation levels cows will be presenting at the dairy almost 24 hours per day.

Even though AMS boxes can handle hospital and colostrum cows, once you have a large herd there will be at least some times of the year when it will be more labour efficient to deal with these cows in a separate facility rather than the AMS. This is simply because it will allow you to deal with these cows as a batch at two set times per day rather than dealing with them as individuals right throughout the day. Alternatively it may be possible to dedicate one or two robots for this purpose on an AMS farm with multiple boxes.

A herringbone facility provides ample time with colostrum and hospital cows without feeling the pressure to get the system ready for the main milking herd to continue their milking. It also means these cows can be milked at a time when the operator can focus their attention on the cows that most need it.

Milking treatment cows in the herringbone will reduce the risk of antibiotic milk ending up in the vat through user error.

*Below: Some AMS farmers have a single sided herringbone facility to handle colostrum and hospital cows, allowing robotic milking of the main herd to continue without disruption.*

## Transfer to AMS

### Fresh cows - mature

Upon transfer to the AMS, cows should quickly re-adapt to automatic milking considering they will have been milked in that facility during previous lactation(s).If they are in good health they should resume their voluntary trafficking lactation with a high milking frequency.

Fresh cows may tend to hang around at the dairy and attempt to achieve a large number of milkings per day during the first week as they settle into the milking routines. This is only a concern if they are hanging around at the dairy but not moving through the milking unit/platform. In this case, check for retained membranes and mastitis.

It may take some days (depending on brand) for the equipment to develop accurate expected yields. During this time animals that are not milked completely may not be tagged as 'incomplete'. This is a good reason to run these animals in a batch milking herd so their first milkings can be observed for completeness and ensuring that their expected yields (when they are calculated) are meaningful.

Observe each cow's first robotic milking of the season regardless of whether you use the auto-teach function or teach the robot the cow's teat co-ordinates manually. Good teat co-ordinates are achieved when cows are calm and stand relatively still. Aim for successful cup attachment without the robot searching too high (up in the belly of the cow) and without repeatedly touching her legs. If the cow is particularly unsettled consider aborting automatic cup attachment and do a manual or assisted attachment for the first milking.

If the first milking is successful the cow can join the milking herd and move voluntarily around the system. Continue to monitor early lactation cows through electronic reports.

### Heifers

Closely observe heifers for the first few robotic milkings. Create a positive experience at the first milkings to avoid developing poor behaviour habits. If a heifer is particularly nervous and is moving around in the bail a lot, consider aborting attachment and manually attach the cups so she receives a complete and successful milking without becoming too agitated (not all AMS brands or installations allow for manual attachment so this may not be an option in some cases). However if the heifer is reasonably settled but automatic cup attachment is not successful before timing out, consider instructing the cup attachment robot(s) to attempt a second or even third attachment. Often a 'fidgety' heifer will settle allowing a successful auto cup attachment on the second or third attempt. This approach is more time consuming than opting for a manual attachment but it is worthwhile for cup attachment in the longer term.

Consider managing heifers in a batch milking herd for the first few days so that their milkings can be observed. They should remain in this batch milking herd until the operator is confident that they are standing calmly during the cup attachment and milking session. For example a 'graduation' criteria for transfer from the batch milked heifer group to the voluntary AMS herd might be to have 4-6 consecutive successful milking without any human assistance during cup attachment.

***For more information on settling heifers into automatic milking refer to Info Sheet: Raising cows for automatic milking.***

If heifers are managed in a batch milking herd after the colostrum period has ended they can be milked at any times during the day without creating too much disturbance to the voluntary cow traffic of the remainder of the herd since you will not need to put a wash through the system after they are milked. However, the downside is that you will be dealing with these animals for four days in the colostrum herd plus an additional 2-5 days while they settle into the AMS. The upside is that you are very confident that they have been set up for a very successful season with good habits, good attachment success and meaningful expected milk yields.

Robotic rotary: If your heifers are particularly jumpy or 'unsettled' consider milking them on the platform with mature cows. If a heifer is on the robotic rotary platform between two mature, calm cows she will be less nervous, have less room to move around in the bail and is more likely to stand still for successful cup attachment.

*Above: Closely observe heifers during their first few robotic milkings to ensure smooth and successful cup attachment.*

## Handling colostrum heifers and cows through AMS without a separate facility

It is quite straightforward to handle colostrum and hospital cows through AMS box units as they have the capacity to divert milk from the main vat to another place (e.g. a vat for calf milk or through a disposal line). This means that heifers and colostrum cows can be run with the main milking herd if convenient. With a large herd, consider setting up the system to direct colostrum and hospital cows to a designated robot(s). This will help you improve throughput efficiency as you will be able to reduce or eliminate auto-rinses after colostrum cows and just conduct rinses after the mastitis/antibiotic cows.

Managing hospital and colostrum cows on a robotic rotary is relatively straightforward for a batch milking herd. The colostrum and hospital cows are the last group milked before a system wash.

However, if you plan to operate a robotic rotary with voluntary cow movement, it will be easier to manage colostrum and hospital cows through a separate, small herringbone facility. If this is not available, it is possible to manage them through the robotic rotary, especially with a smaller herd size and lower utilisation level. One advantage of this is that it involves fewer days of high levels of attention.

Even if the main herd is voluntary milked, colostrum and hospital cows need to batch milked through the robotic rotary so their milk can be diverted from the main milk tank. The plant must be washed after their milking session to eliminate the possibility that residual milk (containing colostrum antibodies and antibiotics) is carried through to the vat with subsequent cows' milk.

Even with a small number of colostrum and hospital cows, this approach can be highly disruptive to the voluntary milking herd. Milking cows trafficking onto the platform have to be stopped, the cows on the platform must finish milking and be rotated off; hospital/colostrum cows are accepted onto the platform and milked, then the plant must be washed.

For example, milking 8-10 colostrum cows is likely to mean the robotic rotary is not available to the main herd for at least 40 minutes (plus wash time). In that time, the robotic rotary could have milked 40-50 cows from the main herd.

The timing of batch milking colostrum and heifer cows can involve a compromise. It makes sense to milk these cows prior to the scheduled system washes to avoid the need for extra washes. But these times may be less convenient or desirable to the operator.

*Above: Even if the main herd is voluntary milked, colostrum and hospital cows need to batch milked through the robotic rotary so their milk can be diverted from the main milk tank.*


**FOR MORE INFORMATION**

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