

Robotic Milking Systems

Part 2: RMS Management Changes and Considerations

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Choosing to switch over or start new with a robotic milking system (RMS) will require a different knowledge base than the previous management systems the farm used. Starting RMS will require the desire to learn and change the way things are done on the dairy. In either case it requires a bit of a paradigm shift in the way facilities are designed or remodeled and animals are managed. A steep learning curve is to be expected by management and cattle. The areas where RMS's can have the greatest influence are: feeding, cows, time management, and labor. Management needs to be adapted to the new central piece of the farm, the RMS.

Cow Feeding Changes

Feeding management is now more important because the feed in the RMS is what encourages milking visits. Finding a nutritionist that can work with these systems is important. A diet properly balanced for the robotic system will encourage the cow to use the robot.



Figure 1. A cow enjoying the feed that motivates her visit to the RMS.

The Partial Mixed Ration (PMR) and the grain available through the robot allow you to customize the diet to each cow which can increase

feed efficiency. The general rule-of-thumb for formulating the PMR is herd or group production average minus 15 lbs. milk. Balance the remainder of the individual requirements with the grain in the robot. This prevents over and/or underfeeding, but still gives the lower producers in the group some incentive to visit the robot.

With the progression of robotic technology and modifications to the previous systems, some newer versions of the robot are allowing for dispensing of multiple feeds in multiple forms – liquid, mash, pellets, or a combination.

Time Management Changes

Management and hours are more open and flexible but is a transition from 2x or 3x per day to having to be on call 24-7 in case the equipment needs repairs. The RMS requires herd autonomy. Interference will defeat the purpose of automating the milking process and train the herd to look for human management in the milking process.

The RMS is just a machine that milks your cows; it is optimizing all the subsystems around that machine that makes an operation successful. Such as a well-planned reproduction program substituting for previous observations during milking. Spending time evaluating the information the system's software provides will become an essential management activity. Having the milking automated allows for increased management of other aspects of the farm and time should be spent adjusting the remaining aspects of the farm to automation.

Labor Changes

On average, changing from a parlor to an RMS results in a 40% reduction in labor devoted to milking. This gives you the option of reducing the labor force, reassigning the labor to another enterprise, or increasing the herd size without increasing the labor force. Moreover, you can

spend more of your time managing cows and less time on rote labor tasks. Having a manager or herdsman is still important. While RMS takes time away from actively working with cows it is still important to keep stalls clean, observe cows, and otherwise manage the herd. Anecdotally, maintaining the stalls seems to reduce the number of fetch cows. This may be a function of more rest results in less lameness, and therefore, better mobility.

Cow Changes

RMS barns tend to be much quieter. As such the cow's behavior becomes more docile and workable, so sorting or fetching is not usually the rodeo it used to be when cows were gathered up 2-3 times per day. Minimize the time in the pen interacting with cows and allow the cows to figure out their schedule without disruption. In some cases they become obnoxiously friendly, which means servicing a waterer or circulation fan can become a mob scene.

Understanding cow social orders and patterns of behavior are essential for success. They are animals with a herd mentality and are subject to diurnal rhythms. There will be lulls in the traffic to the robot – usually between 2 - 3 AM and 2 - 3 PM. Cows that are sick or lame will not visit the RMS therefore it may be best to fetch these cows at these times. Another group that often requires fetching are fresh cows. A good, consistent fresh cow training program can also significantly reduce the number of fetch cows.

This means getting that fresh cow through the robot at least three times per day for the first 5-7 days.

RMS also requires a bit of maintenance on the cow. Long udder hair, reverse tilted udders, touching or crossed teats, and dancing cows need to be helped, managed, and can delay attachment times. Newer models of the RMS have updates that allow to better utilize cows with non-uniform udders, but these cows tend to be preferred to be sold from the herd when choosing an RMS system.

Cow Health

To avoid long fetch lists, staying on top of herd health and treating sick and lame cows quickly is essential. In treating cattle try to do any dry treating, vaccinations, or other vet work outside of the robot. You never want them to associate the robot with any unpleasant experiences. Use a squeeze chute, treatment stall, or headlock for these management activities.

Locking up large numbers of animals for a vet check or penning off a group of animals for the hoof trimmer – as you did in your conventional parlor system – will affect the natural flow of animal traffic in an RMS operation and will leave management with “fetching” a high percentage of the herd. Your advisers should also know how to collect and evaluate the information the system's software provides and have the animal knowledge to make effective use of the reports.

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