

Labor Considerations for Robotic Milking Systems

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One reason frequently given for considering an automated milking system (AMS) is a reduction in the labor force necessary for the farm. Another reason sometimes given is that a smaller farm can consider expansion of cow numbers without a large change in its labor force. While both of these reasons have some validity, it is important to consider the whole work load and labor force picture as this decision is made.

The AMS should reduce the number of milking technicians necessary on most farms, there are other positions that will also be impacted, and the qualifications of the staff necessary may change, and the way the labor force works may change.

Consider these Questions/Scenarios

- On most farms it is common to scrape alleys, dress stalls and maybe even put down fresh feed while the cows are at the parlor. This is convenient and efficient because the cows are out of the way. It is easy to run a skid steer loader and dress the empty stalls. If the cows go whenever they want to the AMS, when will your staff carry out these tasks, and might they take more time than they do now? Or, might you be able to function with fewer staff who work a flexible schedule that isn't dictated by milking schedules?
- It is now common to draft off cows for reproductive exams or breeding at milking time. The cows can be directed to a different pen or area of the barn for short-term holding and then the necessary work. Who will do this in an AMS barn and how will it be done? Will all the cows be forced through an alley for sorting? If not that, will there be an automated gate design to sort cows as they leave an AMS? If they are automatically sorted, how long might they be held away from their stalls and feed while waiting for their work?
- Every milking cow gets seen two or three times a day as she comes through existing parlors. This offers an opportunity to observe the general condition of the cow -- Is she showing signs of lameness? Does she appear "droopy"? Are there signs of any abnormal nasal or vaginal discharges? Is she breathing normally? If the cow does not have the benefit of this regimented observation, is someone on the farm devoting time to deliberately watching the cows multiple times a day? Who is given this responsibility and how will it be scheduled?
- An AMS is a complex piece of equipment. While experience has made them more trouble-free than earlier models, things still can and will go wrong.

Someone needs to be available and prepared to troubleshoot when the robot signals it needs help.

If the farm owner/manager is the only person properly trained to respond, they have not improved their situation beyond when they milked 60 cows all by themselves every day of the year. They still need to be around. If you want other staff to provide relief, they need to be properly trained and qualified to make decisions and carry out basic maintenance activities to keep the robots operating properly. If there is need for someone to call technical assistance, will they be able to communicate effectively and efficiently with the technical service staff?

- A reduction in the work force means fewer people whose schedules need to be coordinated and managed. On a routine basis, that can be a plus, but when it comes to holiday and vacation scheduling, will you still have enough people to properly cover the work load while some are away from the farm? If your normal staff may be inadequate to meet the needs, is temporary help available to meet the need?
- If adding an AMS frees up time for the manager(s) who may now be doing some milking, how will they spend their freed up time? Will it be family time? Will it be better management time? If the time is not well-spent, it will be expensive time.

In order to help answer some of those questions, a work load analysis would be helpful. This could be done in two parts where one considers the work load based on time and another on the qualifications/skills necessary. A work load analysis considers the following factors:

- Jobs that need to be done
- How often a job is done and at what times (daily, weekly, monthly, other...)?
- How long does the job take?
- Does the task require more than one person at a time?
- What equipment is necessary?
- Are any special skills necessary?
- Staff available
- Skills and qualifications of staff
- Time they are available to work
- Who has primary responsibility for a task? Who can have secondary responsibility?
- Does this job impact another task on the farm at the same time?
- Are there specific scheduling requirements that must be met? (When does the milk truck arrive?)

- Do periodic tasks (hoof trimming as an example) take extra help, and if so, who will that be and does that mean re-scheduling other work?
- Other needs specific to an individual farm...

Sample of a Labor Needs Analysis

Labor Needs Estimate

- Task Analysis – currently 90 cow herd

Type of work and when	Length of time	Total hours	People required
Milk 2X/day, 3 hrs/shift	6 hrs/day X 365 days	2190 hrs	Jeff – 1 shift (3) Nancy – 1 shift Ken – 2 days/ wk
Herd care – daily	2 hr/day x 365 days	730 hrs	(1) James
General – feeding, manure removal Daily	7 hrs/day X 365 days	2555 hrs	(1) James – 3 hr/day (2) Jeff – 4 hrs/day
Farm Mgmt	4 hrs/day X 6 days/wk	1248	(1) James

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Total farm business requirements:

Type of work and when	Total hours per year	Total hours per week	Who does it?	Hrs/wk/person
Milking	2190	42	Jeff Nancy Ken	15 15 15
Daily herd care	730	14	James	14
Management daily	1248	24	James	24
General daily	2555	49	James Jeff	21 28
Haying June/July/Aug	240	120	James 5 casuals	30 90
Haylage June	160	140	James Jeff	70 70
Field Prep-Apr/May	40	40	James	40
Corn Planting - May	40	40	James	40
Corn Silage – Oct	160	140	James Jeff	70 70

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Example of a Staff Responsibility Outline

Determining Levels of Responsibility

	Owner:	Responsibility Level	Manager:	Responsibility Level	Farm Assistant:	Responsibility Level
		R=responsible A=assists				
Milking			✓	R		
Cleaning up after milking					✓	R
Milking plant maintenance	✓	R	✓	A		
Feeding out			✓	R		
Machinery maintenance	✓	A	✓	R		
Feeding calves					✓	R
Recording calvings			✓	R	✓	A
Administration	✓	R				
Planning – feed management	✓	R	✓	A		
Planning - financial management	✓	R				
Planning – work management	✓	A	✓	R		
Making supplements			✓	R	✓	A
Etc...						

Example only – not based on any real situation

HR Toolkit
Dexcel, NZ

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While installing an AMS might be a good move for your farm, don't assume labor needs will automatically decrease, or that the current labor force on the farm will be the right labor force for your new needs. You might find a need for more skilled labor than you currently have on the farm. Will you re-train the staff you have or will you have to replace some of your staff? What may be the impacts of those changes on you and your labor force?

An AMS should help free up the owner/manager to do more true managing of the dairy. A manager needs to make and take time for planning, careful record keeping and record analysis. That will be one of the challenges to dairy operators with an AMS. It will take discipline to spend the newly created time away from the milking process truly managing your dairy.

For further information on labor needs analysis and work force planning, or management planning programs contact:

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