

Robots allow for individual attention

ROBOTIC REPORTS



KEY POINTS

- ✓ Robotic milker provides huge amount of data and reports
- ✓ Mastitis management improved
- ✓ Heat detection reports useful

RICHARD van Dooren has changed his focus from managing mostly at a herd level to monitoring and managing individual cows, as a result of the reports generated from his automatic milking system (AMS).

“Before we had an AMS, we really only had information at a herd level, except when we got the herd-recording results,” he said.

“Now, every day is like herd recording day. I just love the reports. They are a very powerful management tool. And I can access them any time of day or night.”

With his wife, Mariette, Mr van Dooren milks 800 cows in two herds at their northern Victorian property near Strathmerton. One herd is milked in a conventional dairy while the other is housed indoors and milked by an AMS with six DeLaval robots.

The van Doorens plan eventually to move all their cows onto automatic milking, with an additional two robots scheduled to be installed in 2013, and more to follow until the system has 12 robots with the capacity to milk 850 cows.

In moving to automatic milking, the van Doorens wanted to be able to milk more cows more often with less labour and greater flexibility than a conventional milking system offered. The AMS herd calves year round to optimise robot utilisation and therefore return on capital investment.

They chose a European, barn-style system because it had a proven track record of achieving voluntary milking frequency of at least two-and-a-half times a day and because they could achieve high milk production and pasture utilisation rates by harvesting green chop and feeding it in the barn. For 10 months of the year, 70% of the cows’ diet comes from green chop harvested on the property.

Although it took some time to adapt to this new way of farming, the van Doorens



The Van Dooren free stall barn in northern Victoria – the barn has enabled the Van Doorens to increase milking frequency through the robotic milkers.

are delighted with the results. The cows average 2.8 milkings a day in a completely voluntary system.

The cows take themselves to and from the dairy for milking. The only time cows are fetched is if there’s something wrong (such as illness or injury) because the dairy layout encourages sufficient cow traffic to achieve the van Doorens’ target milking frequency without regular fetching.

Another attraction of the AMS was the ability to record and access vast amounts of information about individual cows.

The whole system is based on electronic cow identification. Each cow wears a collar which is scanned by ‘smart gates’, and the milking robots, which are both linked to DelPro, DeLaval’s herd record and farm management software. The robots sample and test milk from each individual quarter, providing specific information after each milking.

Reports

Once a week, Mr van Dooren reviews the reports in detail looking particularly at feed intake, production, animal health and joining. But he uses the reports every day to detect mastitis; and he checks the fresh cow reports several times a day.

“We get a separate report for fresh cows – those zero to 30 days post calving,” he said. “It tells me production, feed intake, number of milkings and incomplete milkings and milk quality in each quarter. I keep

a keen eye on those reports because it allows me to pick up problems and deal with them very quickly, before they escalate. That’s just so important with fresh cows.”

Mr van Dooren reviews milk quality reports every day, paying particular attention to milk conductivity results, which are an indicator of mastitis.

“The AMS milk conductivity is a quick and very effective way to detect mastitis,” he said. “We’ve found that conductivity tends to rise about two days before we see the usual signs of mastitis – clots in milk, change in colour etc.”

If a cow’s milk conductivity goes up, it is flagged with an ‘alert’ on its computer record. If it is up again for a second milking it will be drafted to a holding yard after milking for examination and treatment. It can also be directed to a specific robot, which diverts milk from the main vat and has an automatic cell count reader for closer monitoring.

Mr van Dooren said he was delighted with mastitis management in the AMS herd.

“We are picking up mastitis very early which means there’s less opportunity for it to spread from cow to cow,” he said. “We are also finding that by detecting mastitis earlier, we have fewer repeat treatments, and that means less money spent on antibiotics and less money lost in diverted milk.”

Heat detection

For heat detection Mr van Dooren relies on ▶

activity meters that are built into the cows' collars sending information to DelPro.

"I've never liked visual heat observation," he said. "It's time consuming and I've always found it difficult to train people to do it well. We are really happy with the activity meters. They did take a bit of getting used to but now I'd say that about 95% of oestrus cows are detected using the activity meters."

The system measures the activity of each cow every 10 minutes, monitoring activity trends of the herd in general and of individual cows.

"Once we've identified cows that might be on heat we look at their records – last joining date, production, feed intake etc and flag the ones to go on heat alert," he said. "They will be drafted from their next milking to be inseminated; we inseminate 3-4 times a day – whenever there are cows there."



Cows are housed in a free stall barn and mostly fed green chop from the farm.



A cow moves through a Smart Gate to be milked in the robot.

Mr van Dooren describes AMS as a 24/7 operation with about five times the flexibility of a conventional system.

"Because cows are milked any time of day or night we can access detailed records whenever we want," he said. "It took me about a year to gain confidence in using the reports but now they are central to our oper-

ations, and I am still discovering more things I can get out of the reports."

But a 24/7 operation also means maintenance is crucial and Mr van Dooren can receive an alarm any time the robots are operating. He's basically on call all the time.

"That doesn't worry me because I can usually sort it out from the computer, without leaving the house," he said.

"And what I really love is that we have so much more flexibility to get away from the farm. AMS is a much more family-friendly operation than conventional milking."

"With a system that runs day and night you can't afford to have breakdowns. Routine maintenance is essential, but most of it is built into the DeLaval service contract. We just do a weekly calibration and change the liners fortnightly; but with six robots, there are only 24 liners."

FutureDairy project leader Dr Kendra Kerrisk said that Mr van Dooren's experience was typical of most AMS farmers.

"AMS is a different way of dairying, and it takes some time to get used to it, but the instant access to information and reports enable farmers to manage their herd quite differently to a conventional dairy," she said.

FutureDairy's major sponsors are Dairy Australia, NSW Department of Primary Industries, DeLaval and the University of Sydney.

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FutureDairy's robotic prototype completes its journey

THE prototype of the revolutionary robotic rotary at FutureDairy's Camden, NSW, site has been decommissioned.

Chairman, Shirley Harlock, said the decommissioning was both expected and planned.

"The 16-bail prototype at Camden was used for research and development purposes: it's an early design that was used for concept testing," Mrs Harlock said.

In the process it was modified, using 'one-off' custom-made parts that are difficult to maintain in the long term.

"From the outset, we knew the prototype would be 'decommissioned' after the successful commercialisation of the AMR (Automatic Milking Rotary) by DeLaval," she said.

The FutureDairy team has completed data collection from all of the

component research work planned for the prototype robotic rotary.

Plans are under way for a replacement dairy at the site.

In the interim, FutureDairy's activities will focus on existing commercial Automatic Milking System (AMS) and AMR installations to develop resources that support AMS farmers and provide answers to those who are considering AMS. The activities will include research, development of extension resources and support for farmers.

"The decommissioning step marks another successful milestone for FutureDairy: the development of a product which is now commercially available," Mrs Harlock said.

"It is a world first that has been strongly influenced by the Australian dairy industry. That's an achievement that we can all be very proud of."

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