

## Key points

- For best results, set up farm layout for 3-way grazing.
- An automatic milking system (AMS) involves a steep learning curve; expect the first season to be challenging.
- Introducing the herd to AMS in late lactation has less impact on production.
- Accurate pasture allocation is critical for voluntary cow movement.
- AMS offers a flexible work routine and the potential for improved work-life balance.
- AMS does involve the use of computers but the equipment suppliers provide training and most people readily pick up the required skills.
- An AMS farm may be attractive to potential employees for its technology and flexible routines.





## Jim and Sue Ford

Jim and Sue Ford were in their mid-fifties when Max, their 25 year old full-time employee, decided to buy his own farm.

At the time Jim was working 60 hours a week, with Sue working 25 hours a week, as well as spending two days a week minding their daughter's two young children.

Max was working more than 50 hours a week before he left. Jim and Sue wanted to 'slow down' a bit; but finding another employee was proving to be extremely difficult.

If they were to stay in dairying, Jim and Sue wanted to look at their options for the medium to long term, including planning towards semi-retirement.

While attending a dairy conference in their region, they visited an automatic milking system (AMS) dairy farm. They were impressed by what they saw: cows moving around the farm, to and from milking with no real human intervention.

Jim revisited the farm several times to see if this could fit into their plans for the future. They recognised that there was much more to AMS than just putting in robots. Automated milking did not mean that they could just forget about the farming operation. There were tasks that still needed to be done and they would need new skills to operate an AMS farm.

After much discussion Jim and Sue decided to replace the existing herringbone and install four AMS box units. They talked to an independent AMS researcher, several AMS farmers and the manufacturer to develop a design for the milking shed, farm layout and laneways.

Construction was completed during the dry period to allow the herd to be introduced to the new system at the start of calving.

Jim and Sue decided to reduce the herd size from 310 to 280 cows (a more comfortable number for the four AMS box units). The aim was to produce a similar volume of milk from fewer cows by increasing the average milking frequency over the season. They aimed to have cows peaking at around 2.3 milkings/day and dropping their milking frequency as they progressed through the lactation.

Jim and Sue employed Mark, a 60 year old retiree, who was looking for part time work. Mark had a background in farming and was willing to develop the necessary computers skills required for AMS operation.

Three years down the track, Jim and Sue's AMS is operating smoothly. Production is up and the farm's financial returns are better than the average for the district. Jim and Sue have reduced their workloads and are happy with their work-life balance.

Looking back over their journey, they realise their move to AMS involved a steep learning curve. They faced several challenges along the way and learnt some valuable lessons in the process. Jim and Sue feel now is a good time to share their experiences.....



### Jim's insights

#### *Infrastructure changes*

I was keen to set up the farm layout for 3-way grazing. Everyone we spoke to said this was critical for establishing reliable voluntary cow movement. As it turned out, it wasn't a big deal. We just built 250 metres of new laneway to split the farm into three sections of almost equal area (see diagram). We are really happy with how well the cows move around the farm system.

#### *Stocking rates*

At the time, it was a big decision to cut milking cow numbers from the 310 in the conventional system back to 280 in the AMS. The theory was that we could

increase production per cow and maintain profitability while reducing the herd size and the associated workload. We decided to aim for an average of 2.3 milkings/cow/day throughout the season. We didn't reach that target in the first season but we got close in the second season and so far this season we are on target to average 2.4.

Last season, we averaged 668 kg MS/cow and this season looks like being similar or a little better. So we have achieved our total production target from the smaller herd.

#### *Commissioning timing*

It suited us to build the dairy over the dry period but the downside of that was the cows were introduced to AMS at the start of lactation. It meant a bigger fall in milk production as a result of the training period.

In hindsight it would have been better to train the herd for AMS when the cows were in late lactation. They would have taken longer to adapt but they would have entered the new season with an improved level of trafficking and performance and would likely have realised a higher level of production during their first full season.

Obviously in the first season the whole herd was new to the AMS. Since then we've been surprised at how easily heifers learn the system around automatic milking. They need very little help from us because they learn from the experienced cows. During the winter we usually run the heifers with any extended lactation cows for a couple of weeks so that they learn to move around the farm and dairy. We recently installed an 'express laneway' at the dairy entry for priority cows. It is great for training heifers and has reduced the stress on both heifers and us.

#### *Pasture management slippage*

Like many AMS farmers we slipped up a bit with our pasture management during the first year. AMS farming requires very accurate pasture allocation: if we give the cows too much they stay in the paddock too long, resulting in reduced milking frequency and a drop in milk production. If we offer them too little they'll loiter at the dairy waiting for the next pasture break, resulting in a fall in feed intake, milk harvesting efficiency and milk production. We ended up compensating by increasing grain based concentrate allowance and then our costs went up.

In our second season we really sharpened up our pasture management. The system ran a lot more smoothly and we got our feed costs back down.

#### Work routine

My daily routine is very different now. Obviously there's no more early rises for milking. My day starts at about 7am and finishes about 5:30. And I only work the equivalent of four days a week. It's also a lot less physically demanding, and I have more time to manage the operation. A lot of this involves reviewing the reports on the computer which means I can make decisions earlier.

#### Sue's insights

##### Work-life balance

Our work-life balance has improved immensely. The most obvious difference is that Jim no longer works seven days a week. He is quite comfortable to leave the farm in Mark's hands. On the days Jim is rostered on, he has more flexibility because he doesn't have to be at the farm for morning and afternoon milking.

I have cut right back on my farm duties, and now focus on the book keeping and budgeting. In the past, a lot of my time was spent on record keeping, and most of that is automated now. I'm delighted to have more time and energy to spend with our grandchildren. I'm also really enjoying spending time with Jim now that he only works four to five days a week. Jim's health has also improved. He's not as physically tired and his back and knees have improved now that he's not standing in the dairy twice a day.

##### Technology skills

Jim and I were both worried about whether we'd be able to master the computer skills needed for an AMS. As it turned out, Jim took to it like a duck to water! Mark has picked up the system too. The manufacturer provided training up front which got us started, and we had support until we gained confidence. Much to the kids amusement, Jim recently bought a smart phone so he can log onto the system and modify settings remotely. We could always do this from the house but the phone access means Jim can enjoy more time off the farm without worry.



## The daily routine

### Usual roster:

**Jim** - 'Full time' – 35 hours per week (maybe not full time by dairy farming standards)

**Mark** - Tuesday and Thursday in the afternoon + some weekends

**Sue** - as needed for book keeping and budgeting

*Reason for two labour units is to ensure Jim is not tied to the farm 365 days of the year. Having Mark involved provides flexibility but Jim learnt quickly that Mark needed regular exposure to the system if he was to cope without Jim being around.*

	Weekdays	Weekends
7:00-9:00	<ul style="list-style-type: none"> <li>• Check AMS reports</li> <li>• Fetch cows that have not come up from yesterdays morning and afternoon paddocks</li> <li>• Shift fence for next grazing in both morning and afternoon paddocks</li> <li>• Encourage fetched/extended interval cows into machines (usually during hosing down)</li> <li>• Attend to cows in drafting yard/paddock</li> <li>• Hose dairy yard (to be automated in future)</li> <li>• Hose out around robots</li> <li>• Clean cameras</li> <li>• Check dairy, deal with any cows requiring attention</li> <li>• Change filter sock</li> <li>• Feed calves</li> </ul>	<ul style="list-style-type: none"> <li>• Same tasks, except fences are generally set up on Friday to allow morning tasks to be completed by 8:30AM followed by feeding before breakfast</li> </ul>
Breakfast break		
9.30-16:00	<ul style="list-style-type: none"> <li>• Season dependent</li> <li>• General farm jobs – feeding herd, fence repairs, spraying paddocks etc</li> <li>• Any non-routine tasks eg pregnancy testing, weighing heifers</li> <li>• Depending on tasks and time, on the way home for lunch drop into dairy to clean cameras and assess general situation</li> </ul>	<ul style="list-style-type: none"> <li>• Feeding, not much else on the weekends</li> <li>• Aim to finish by 9:30</li> </ul>
Afternoon break		
16:00-17.30	<ul style="list-style-type: none"> <li>• Check AMS reports</li> <li>• Fetch cows from night paddock</li> <li>• Shift fence for next grazing in night paddock.</li> <li>• Change filter</li> <li>• Hose out around robots</li> <li>• Clean camera</li> <li>• Feed calves</li> </ul>	<ul style="list-style-type: none"> <li>• Same tasks, except finish at 17:00 if fences set up on Friday</li> </ul>
After hours		
	<ul style="list-style-type: none"> <li>• Rostered on call; attend only if can't be dealt with remotely</li> <li>• Normal farms on-call activities including calving watch</li> </ul>	

### Transition phase stress

I have to confess I had some doubts during the transition phase, in particular during the first three months which were quite stressful. It probably took us eight or nine months to understand the new farming system and to start to really see the potential of the system. Now that the AMS has been operating for three seasons, it runs very smoothly and I really enjoy seeing the herd and Jim and Mark so calm and relaxed.



#### Mark's insights

I've always loved dairy cows but when Jim approached me I was initially concerned that it would be too physically demanding for someone my age. It has turned out to be a dream job. I really enjoy the combination of working outdoors and following up on the reports generated by the AMS. The computerised system was a bit daunting at first but Jim, Sue and I have been able to learn together and help each other. I don't have to get up at the crack of dawn to milk, but I still get to work with cows. The AMS gives us a lot more flexibility than I've been used to with dairying. Jim and I have developed a routine that suits us; but another AMS farmer might have quite a different routine. I've just got a smart phone too – so that we have even more flexibility, especially on the weekends.

One thing I hadn't expected is that someone needs to be on call after hours if an alarm is generate. Often I can deal with an alarm using the farm laptop from home but there is the odd occasion when I have to go to the farm out of hours. It doesn't worry me – I think the flexibility outweighs the occasional call out but some people might not like being on call.

## Find out more:

#### FutureDairy:

Assoc. Prof. Kendra Kerrisk

ph: 0428 101 372

email: [kendra.kerrisk@sydney.edu.au](mailto:kendra.kerrisk@sydney.edu.au)

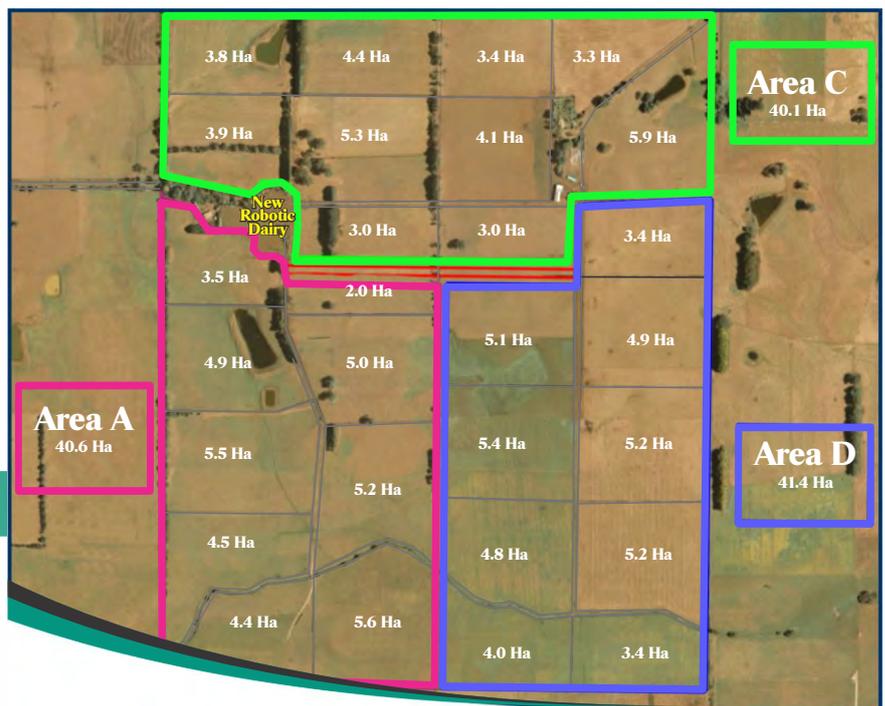
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### Physical Performance and farm layout comparing the two management systems

Physical	Conventional System (CMS)	Automatic System (AMS)
Farm Size (Ha)	129	129
Cow No.	310	280
Milk Solids (kgMS)	191029	187089
Pasture Consumption (tDM/Ha)	11.8	10.9
Concentrate per cow (tDM/cow)	2.0	2.5
Pasture per cow (tDM/cow)	4.7	5.4
<b>Work-life balance</b>		
Jim's hours/week	60	34
Sue's hours/week	25	7
Mark's hours/week	50	20

### Farm Layout

Existing farm plan showing new laneway (in red) and farm set up for 3-way grazing.



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**Note:** The information contained herein is based on Future Dairy's knowledge and experience generated through research and relationships with commercial farmers adopting AMS. The featured farm/farmers are fictitious.