



Key Points:

- Ability to retain off farm employment.
- Pathway to succession.
- New entrants to dairy industry.
- No employed labour.

Robots attract new entrants to dairying

Doug and Lyn Crosby and their son, Bill, Conmurra South Australia

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AN AUTOMATIC milking system (AMS) offered the Crosby family the opportunity to set up a dairy farm while maintaining off-farm employment. In the long term it is a step towards retirement for parents Doug and Lyn. In the short term, their off farm incomes have provided a vital buffer when milk prices were low.

Before AMS

The Crosbys are new to dairying but not new to farming. For the past 15 years, Doug managed a mixed farm (cropping and beef) while Lyn worked full time (from home) as secretary for the South East Annual Field Days.

Bill left the farm in 2002 to take up an apprenticeship and since 2006 has lived and worked as an electrician at Naracoorte, 50km from the AMS farm where Doug and Lyn live.

| Dairy labour efficiency | |
|-------------------------|-------------------------------|
| | Labour efficiency (cows/FTE*) |
| Crosby family (AMS) | 186 |
| Victorian average | 99^ |

* 1 FTE is defined as 50 hours/week
 ^ Based on data from Dairy Farm Monitor Project - Victoria Annual Report 2012/2013 (no data available from South Australia)

The path to AMS

The option to dairy with robots arose when Doug and Lyn began thinking about planning for retirement and Bill expressed an interest in farming. After 18 months of research they decided an AMS would create an opportunity to enter the dairy industry without the commitment to a routine of twice a day milking. The conversion to dairy had the appeal of a farm business with regular cash flow while the robots would allow them the flexibility to continue their existing jobs.

A property purchased several years earlier was suitable for an AMS dairy farm and had the added benefit of being very close to the mixed farm so Doug could continue in that role as well as working on the AMS.

Bill and Doug constructed most of the infrastructure for the AMS farm – the shed to house the robots, fencing and laneways.

In May 2009 they began milking a herd of 150 cows with two robots.

The Crosby family AMS

Doug and Lyn live on the dairy farm and Bill lives 50km away. Doug and Bill work to a roster which gives each of them every second weekend off.

During the week Doug runs the AMS farm as well as continuing to manage the mixed farm. The amount of time Bill spends on the AMS varies according to the demands of his electrical business – sometimes he spends a day a week at the AMS, other times he may work there for two weeks in a row.

Lyn does secretarial work from home as well as the dairy business book work.

Case Study

Although Bill's brothers, Ben and Bob, each have their own careers, they also help out at certain times of the year. Bob, a spraying contractor, helps with pastures. Ben is a marine engineer and helps with mechanical work.

FutureDairy calculated the farm operates with 0.75 full time equivalent staff (FTE) or 186 cows per FTE.

Daily routine

Although the daily routine is fairly consistent, the timing of tasks depends on who is working on the day. Because he lives on the farm, Doug prefers to rise at dawn and spend a couple of hours on the AMS farm. During the middle of the day he works at the mixed farm and comes back to AMS jobs in the late afternoon, finishing up at sunset, about 8pm in summer and earlier in the winter.

| The Crosby family AMS, 2013 | |
|-----------------------------|--|
| Herd | 140 cows Calving pattern: year round |
| Farm | Total farm area: 200 ha Milking area: 56 ha |
| Concentrates | 1.8 t/cow/year |
| Robots | 2 Lely Astronaut 70 cows per robot |
| Production | 7500 L/cow/year |
| Labour efficiency | 0.75 full time equivalents or 186 cows/FTE |

With a 45 minute drive to and from the AMS farm, Bill prefers to concentrate his AMS tasks into the main part of the day, between about 8am and 4:30pm. If he has urgent electrical work to do, he might attend to that first and arrive at the farm a bit later.

The AMS has the flexibility to accommodate these different personal preferences without having any impact on the herd or system performance.

Milking related activities take about 3 hours a day. The shortest day (say on the weekends) involves about 3 hours in the morning and as little as 30 minutes in the afternoon.

Voluntary cow movement

The farm is set up for 3-way grazing, a key to achieving voluntary cow movement and efficient robot utilisation. The Crosbys have programmed the gates to give cows access to a fresh allocation of pasture three times a day:

Section A: from 9:00pm

Section B: from 3pm

Section C: from 5:30am

Because it was a greenfield site, the Crosbys have an on-going pasture improvement program. Sections A and C have established Lucerne. Section B is used as a feedpad until additional renovated pasture areas are ready for grazing.

Alarms

One difference between labour requirements for a conventional milking system and an AMS is the need for someone to be on call with an AMS.

This is because an AMS operates almost 24 hours a day. If something goes wrong, the system will generate an alarm. Doug and Bill work on an 'on-call' roster, setting the computer to contact whoever is on call.



A typical day: Bill Crosby 2013

(timing of activities varies depending on who is working)

8:00 - 9:00am Morning duties

- | | |
|----------------|---|
| Dairy | <ul style="list-style-type: none">● Check AMS reports on computer and quick visual check of dairy● Check robots● Clean camera lenses● Change milk filter● Feed calves |
| Paddock | <ul style="list-style-type: none">● Check dry cows |

10:30am - 12:00pm

- | | |
|----------------|--|
| Dairy | <ul style="list-style-type: none">● Hose out and around robots● Hose main dairy yard● Treat cows in drafting yard (mastitis, A.I., lame)● Encourage cows waiting in the yard into robots (usually when hosing down) |
| Paddock | <ul style="list-style-type: none">● Fetch cows that have not come up from night paddock● Shift fence for next grazing● Feed silage on afternoon/evening paddock● Spread effluent on paddock |

4:30 - 5:00pm Afternoon duties

- | | |
|----------------|--|
| Paddock | <ul style="list-style-type: none">● Fetch cows, shift fence for next grazing in morning paddock |
| Dairy | <ul style="list-style-type: none">● Check AMS reports on computer; quick visual check of dairy and robots● Treat cows in drafting yard (mastitis, lame, A.I.)● Hose out and around robots● Clean camera lenses● Change milk filter● Check and wash milk vat if needed |

The most serious is a stop alarm which means the milking system stops until the issue is resolved so someone needs to attend the dairy to fix the problem promptly. The Crosbys estimate they average about three stop alarms a week.

In the worst case scenario, if the Crosbys need help, the local technician, based at Mt Gambier, can be on the farm within two hours.

While Bill and Doug are happy with the level of alarms now, they had a lot more alarms during the first two years.

"If you don't do enough maintenance, expect alarms in the middle of the night."

Bill Crosby

They have learnt from experience that maintenance is the key to preventing alarms. The number of alarms can be minimised with regular checks and cleaning throughout the day, especially cleaning the cameras, screens and milk hoses.

Bill says if he sees an automatic cup remover string that looks ready to break, he changes it immediately, knowing that if he doesn't there's a good chance he will get an alarm to fix it in the middle of the night.

The Crosbys also make sure they follow the manufacturer's recommended service schedule to prevent alarms.

Seasonal tasks

The original herd that the Crosby's bought was batch calving. However they moved to a year round calving system.

This means most of the herd related tasks are less intensive but occur continually throughout the year: calving, mating, calf rearing, heifer rearing and training heifers for the AMS.

Getting used to automatic milking

The Crosbys say it took about eight months to get the system working smoothly. They built most of the infrastructure (shed, laneways etc) themselves and they were still finishing this off when the robots were commissioned.

They didn't hire any extra help in the first few months so the days were very long (7am to 9:30pm), juggling training the cows with welding, fencing, calving as well as off-farm employment!



Case Study

Bill says the biggest challenge was training the cows to behave as individuals rather than a herd.

The 200-cow purchased herd arrived without calving dates (although it was joined to calve in batches). Fifty cows were dry and the rest needed milking.

The Crosbys trained the cows in small groups, introducing them to the robots and smart gates after they calved, all the while trying to make sure they didn't create lengthy delays for the rest of the milking herd.

Being new to dairy, there are many tasks that the Crosbys have only experienced with automation: milking, separating colostrum and treating cows with antibiotics.

"Being new to dairying was an advantage in some ways.

We didn't have to rethink our approach to tasks such as treating cows with antibiotics or separating 'bucket' milk."

Doug Crosby

Breeding

The Crosbys quickly decided to change from batch calving to year round. So they used bulls in their first year.

Training bulls was a challenge but they now have two bulls walking the system without any problem. They wear collars and the system is programmed to send them through the robots without milking.

The Crosbys have started crossing their Holstein cows with Brown Swiss to improve milk solids and voluntary cow movement. In their experience, Brown Swiss tend to be more motivated to move around the farm.

A balancing act

The Crosbys recognise that their non-dairy jobs are a double-edged sword. Bill says his electrical work still provides his main income. The off-farm income has proved vital to surviving low milk prices. Even so, the Crosbys reduced the herd size, selling a group of heifers to China.

The Crosbys are very happy that the AMS has allowed this flexibility. Dairying without robots was not an option the Crosby's were willing to consider.

The big gains

Automatic milking is the Crosby's only experience of dairying, so they can't compare their system 'before' and 'after'. But they do recognise that the flexibility that automation brings is what made it possible for them to become dairy farmers in the first place. It simply wouldn't have been possible for them retain their existing employment if they were tied to manual milking twice a day.

The appeal of AMS to the Crosbys fell into three areas: labour, farm business and lifestyle.

Labour

Automatic milking has enabled the Crosbys to establish a dairy operation that can be managed by a single operator, or a couple of people each in a part time capacity. They have been able to utilise family labour only, without hiring staff.

- No hired labour.
- Ability for part time roles.





Future plans

In the short term, the Crosbys' focus is on continuing to develop the farm for dairying. A high priority is to progressively renovate the pastures in Section B to maximise the amount and quality of home-grown feed.

This may be a challenge on areas with hilly sandy dunes that are low in organic matter.

A bigger calf shed is also on the agenda, as the existing one is becoming too small.

Further down the track the Crosbys are considering moving to seasonal calving as this could offer gains in both dairy efficiency and lifestyle (an annual holiday).

In the longer term, the Crosbys may consider adding a third robot to increase the herd size.

While there is room in the shed for another robot, the Crosbys want to first improve pastures and reduce the debt on the existing two robots.

The family is starting to plan the transition for Doug to move towards retirement and Bill to eventually run the AMS farm full time.

Farm business

The flexibility of AMS has enabled the Crosbys to develop a dairy business while retaining existing employment. It has also allowed the Crosbys to develop the dairy business at their own pace.

Automatic milking has provided Doug and Lyn with a pathway to retirement while giving Bill the option to dairy full time in the future or to continue employment as both an electrician and a dairy farmer.

- ✓ Ability to retain non-dairy incomes.
- ✓ Pathway to retirement for Doug and Lyn.
- ✓ Pathway to full time farming option for Bill.

Lifestyle

The flexibility of the system allows Bill and Doug to each work a routine that suits their personality and other commitments. Doug prefers to start at dawn while Bill starts a little later. On the weekend, Bill enjoys riding his motor bike after morning chores.

- ✓ Flexible routine to suit individuals.
- ✓ Every second weekend off.
- ✓ Flexible schedule.

FOR MORE INFORMATION

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