



Department of
Primary Industries



THE UNIVERSITY OF
SYDNEY

Australian AMS KPI Project

Monitoring 9 commercial farms

Lyons, Nicolas (NSW Dept of Primary Industries)
Kerrisk, Kendra (FutureDairy, University of Sydney)

AMS KPI Project: Background and Aim

Knowledge Gap:

- Knowledge required to determine investment
- **Throughput potential**
- Economic performance

Aim:

- Capture key performance indicators (**KPIs**) related to AMS utilisation
- Understand current and potential systems performance

AMS KPI Project: Methodology

- 9 AMS farms (voluntary participation)
- Monthly extraction of reports and data
- Generation of KPIs for the previous month
- Results posted online / newsletter

A screenshot of the NSW Government website. The page is titled 'Automatic Milking Systems: Project output' and is part of the 'ROBOTIC MILKING SYSTEMS' section. The page includes a navigation menu, a sidebar with links to various dairy industry topics, and a main content area with a 'Progress summary' section. The 'Progress summary' section is dated May 2016 and provides detailed information about the project's progress, including the number of participating farms, milk production, and robot performance metrics.

PRIMARY INDUSTRIES
Agriculture

Home » Agriculture » Livestock » Dairy » Robotic milking systems » Automatic Milking Systems KPI project

ROBOTIC MILKING SYSTEMS

Automatic Milking Systems: Project output

- Progress summary
- Project output data tables
- More information
- Disclaimer

The Automatic Milking Systems' KPI Project provides the Dairy Industry with key information of what is achievable under commercial conditions. Information about milk production, AMS utilisation and farm demographics will help understand how these farms 'behave' over a 12 month period.

Progress summary

May 2016

The 9 participating farms in the Automatic Milking Systems' KPI Project reflect a range of farming systems with different animal breeds and calving systems. The farms have either 3, 4 or 6 single box robots, whereas one farm has the robotic rotary.

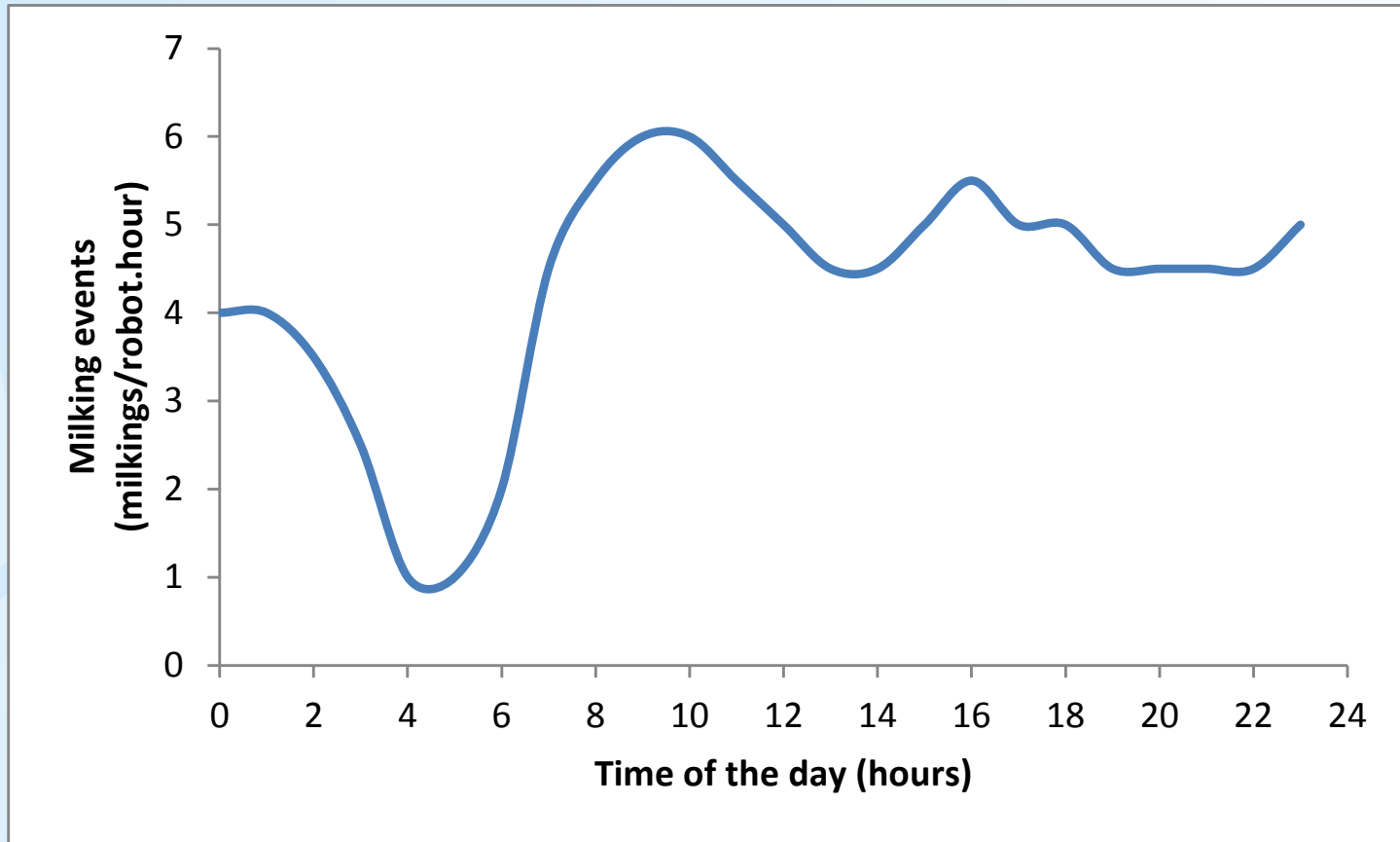
In May, on average these farms were milking 157 cows and producing around 4,014 kg milk/day with a milk composition of 4.45% fat, 3.49% protein and a somatic cell count of 202,000 cells/ml.

Individual cows were milked 2.2 times/day, producing 22.0 kg milk/day and consuming an average of 6.4 kg concentrate/day. In every milking visit, cows produced on average 9.8 kg milk and spent 6:12 min in the robot.

Per hour each individual robot was milking an average of 5 cows, ranging between 2 and 7 milkings/robohour.

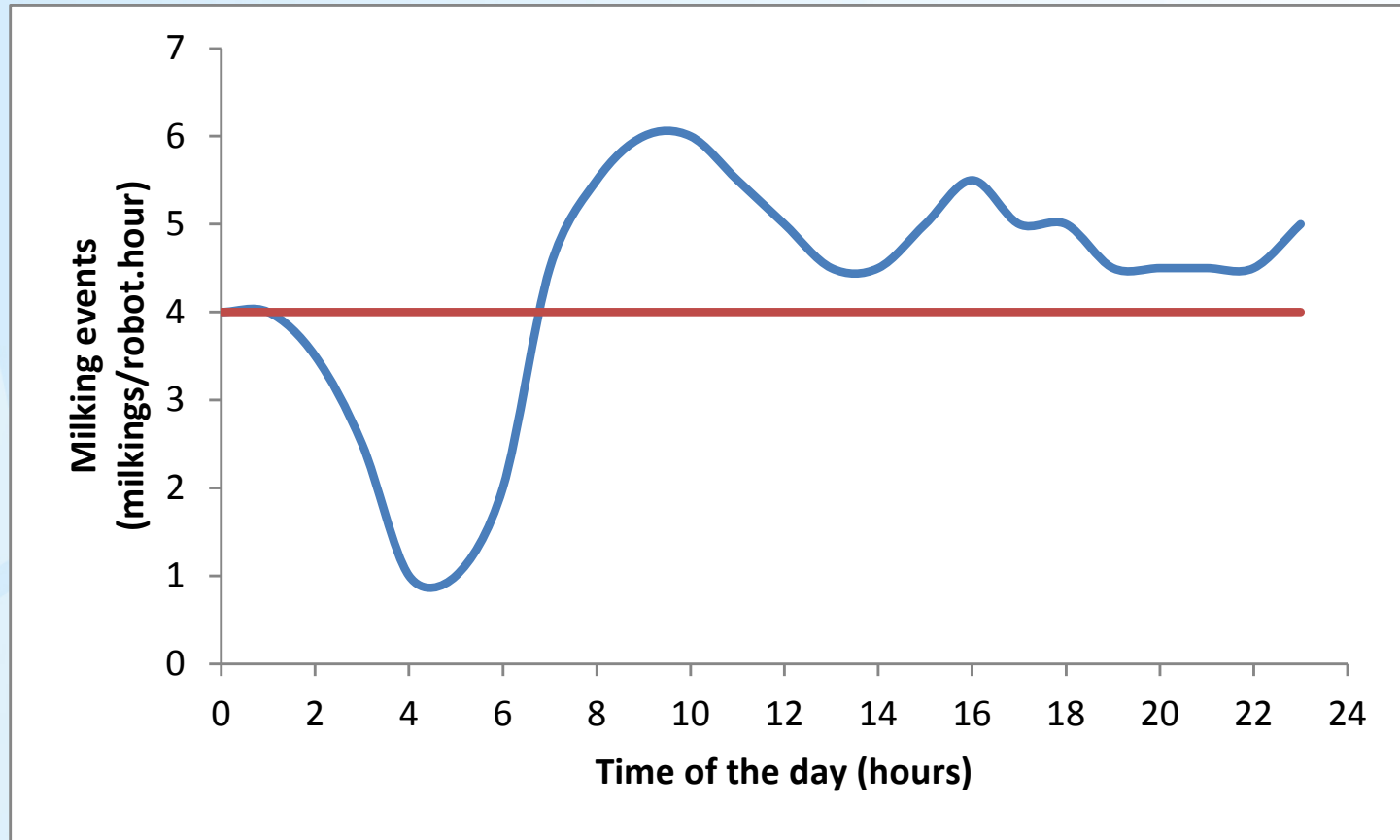
Each individual robot performed an average of 114 milkings/day, operating for around 12.75 hours/day and harvesting 1,104 kg milk/day.

AMS KPI Project: Methodology



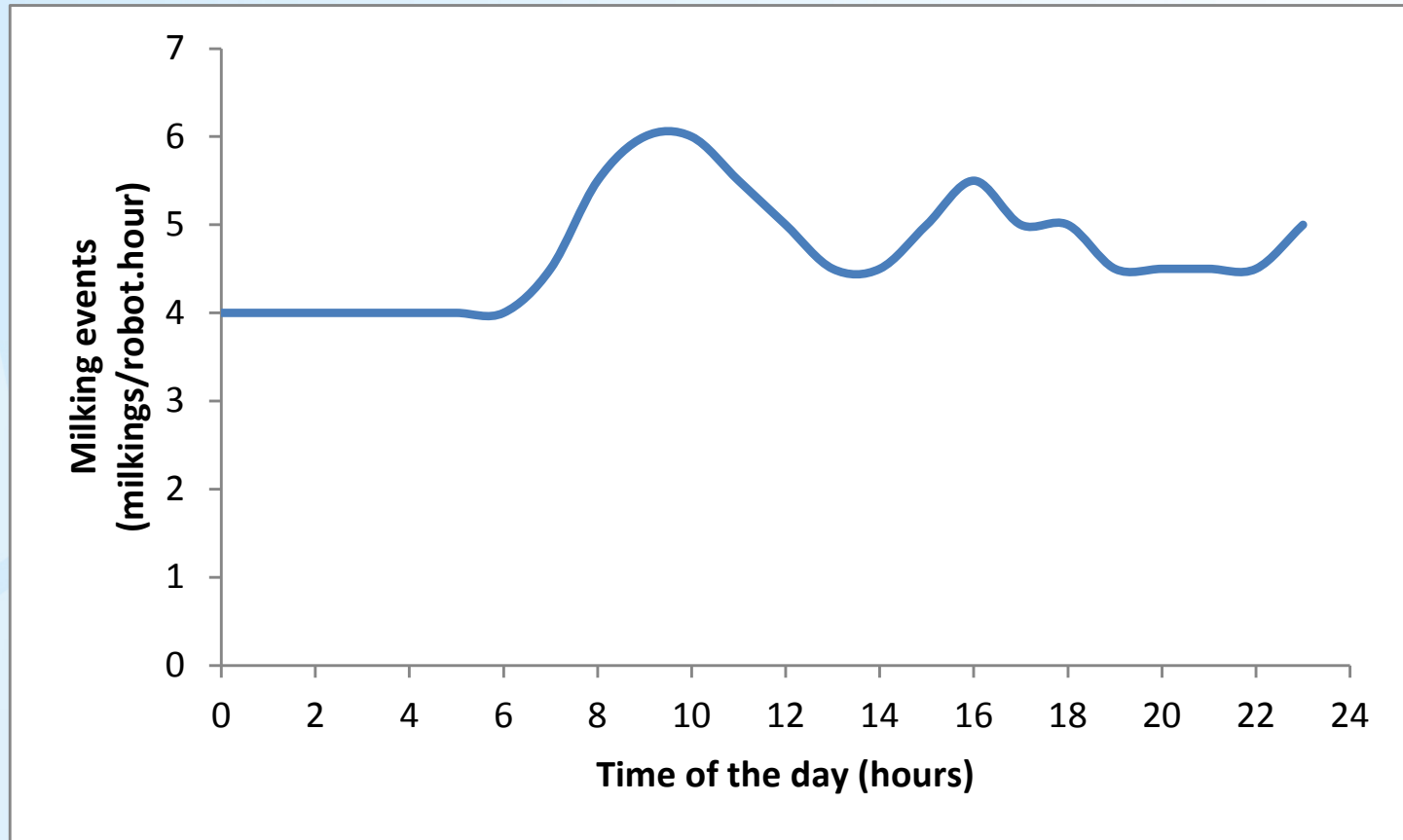
Actual performance

AMS KPI Project: Methodology



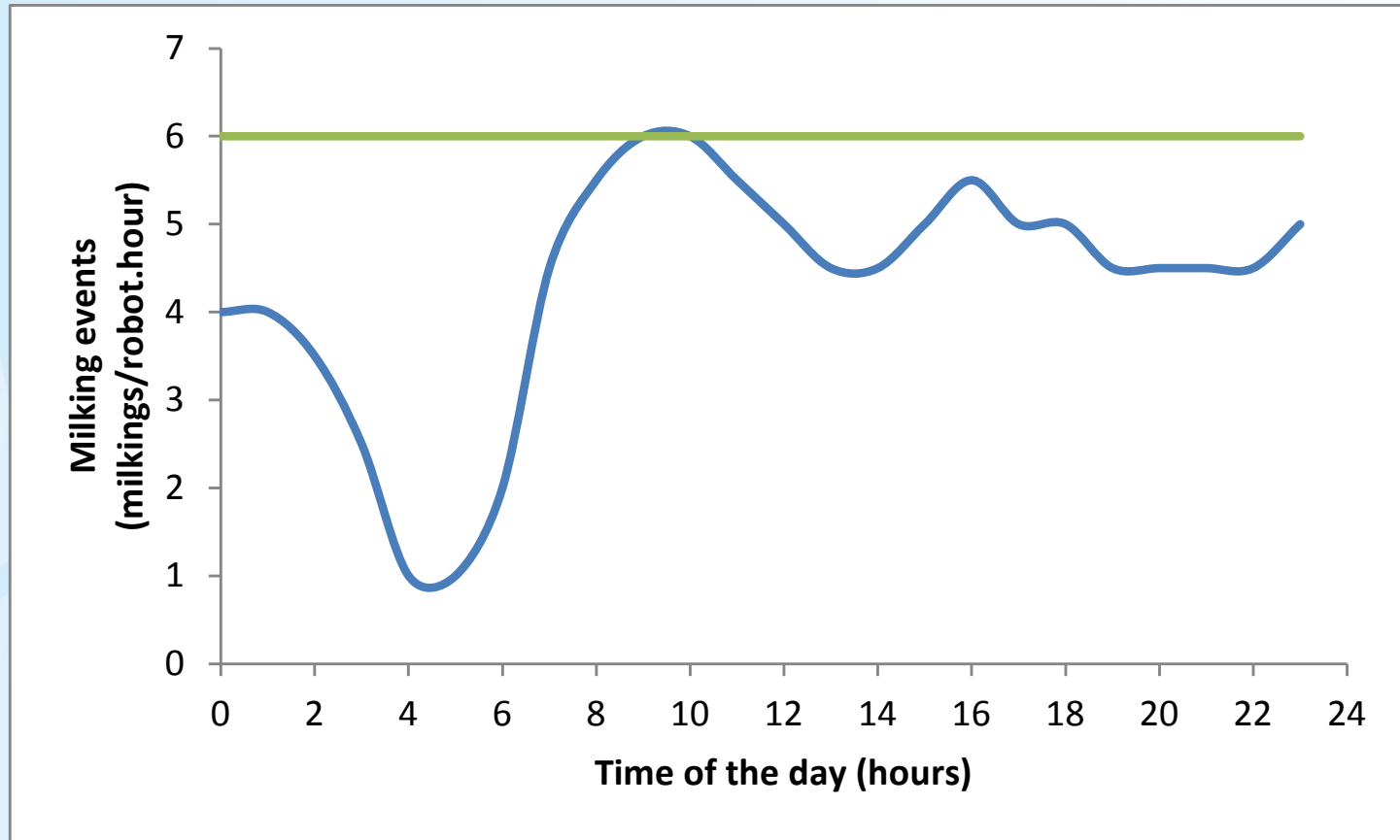
Average = 4 milkings/robot.hour

AMS KPI Project: Methodology



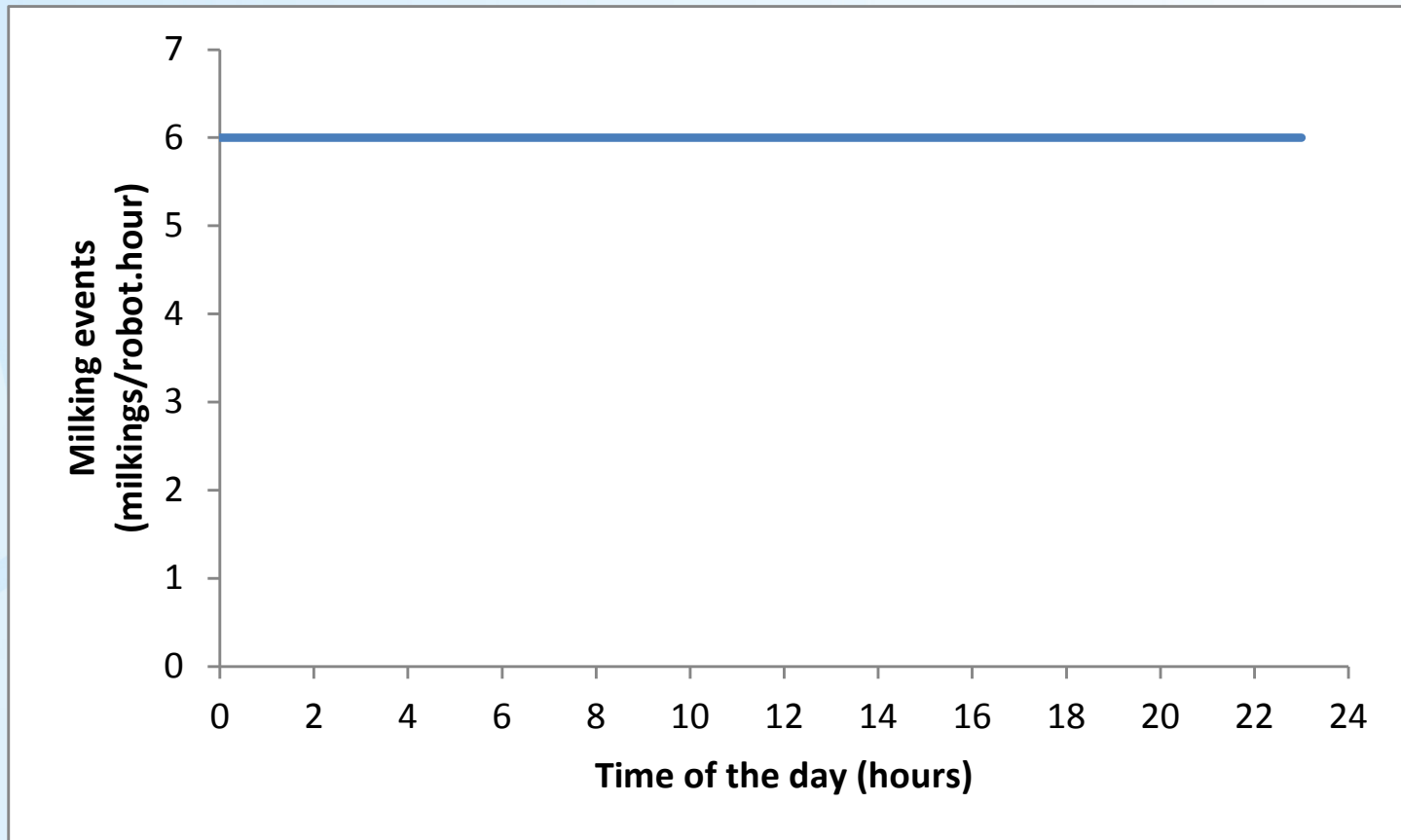
Potential average system performance

AMS KPI Project: Methodology



Maximum = 6 milkings/robot.hour

AMS KPI Project: Methodology



Potential maximum system performance

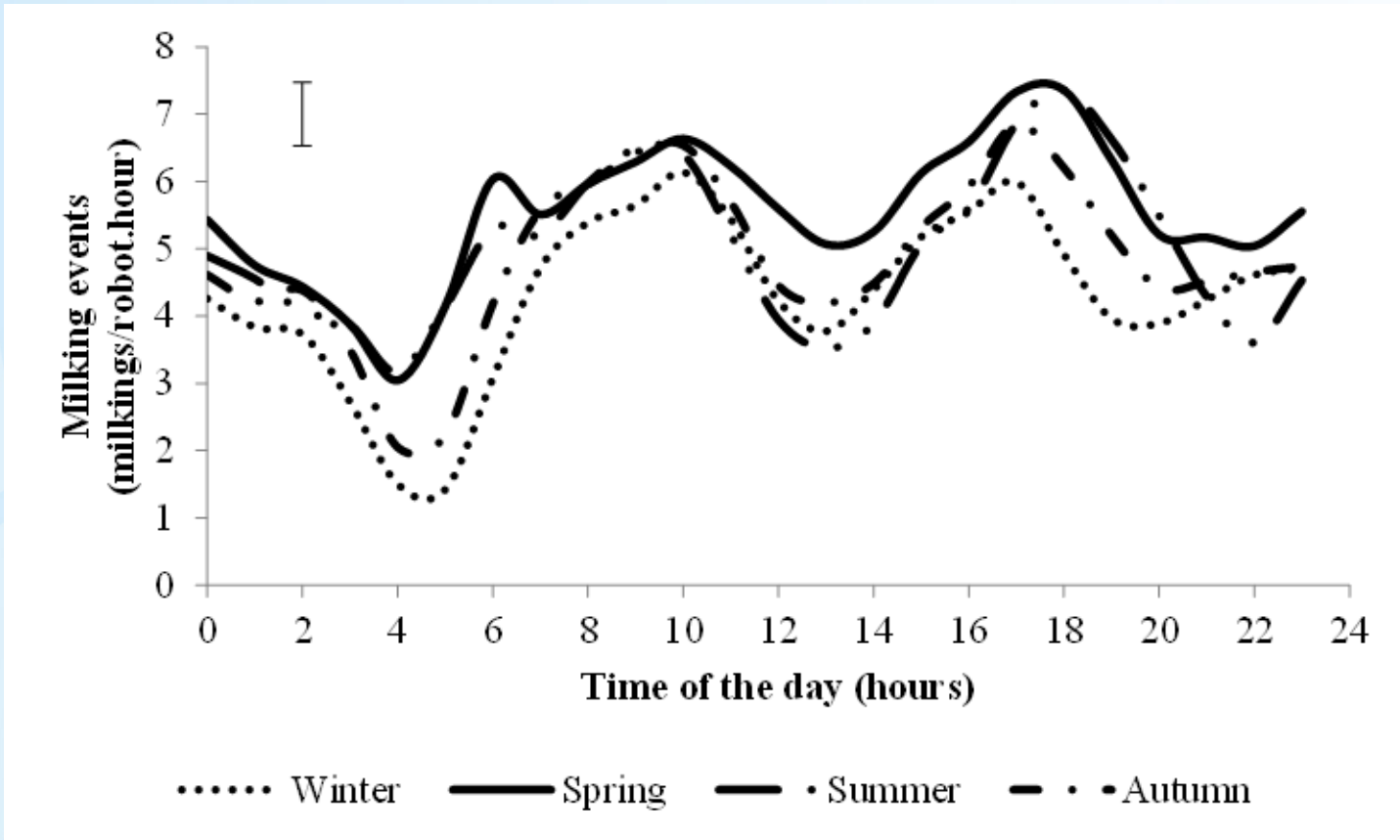
AMS KPI Project: Results

Wide range in farm performance:

- 176 milking cows (41 – 330 cows)
- 2.4 milkings/cow/d (1.6 – 3 milkings/cow/d)
- 24.8 kg milk/cow/d (14.7 – 35.6 kg milk/cow/d)
- 6.4 kg conc/cow (2.2 – 11.3 kg conc/cow)



AMS KPI Project: Robot performance



AMS KPI Project: Robot performance

	Current	Potential Average	Potential Maximum
Milking events (milking/robot/hour)	5	5	10
Milkings (milking/robot/day)	120	138	186
Cows (cows/robot)	51	58	78
Milk yield (kg milk/robot/day)	1,263	1,461	1,956
Milking time (hours/robot/day)	13.63	15.50	20.80



AMS KPI Project: Conclusions

- Wide range system performance
- High pasture-based AMS potential
- Milkings, cows, yield and milking time could increase by up to 60%
- Different strategies to achieve this potential
- Average farm has 4 robots, could potentially operate with 3 robots

Thank you very much

