

AMS KPI Project - General farm information – Australian Farms

February 2017

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.

Table 1: General farm information

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|----------------------|--|----------------------------------|---------------------|-------------------------------|----------------------|---------------------|---------------------|---------------------|----------------------------|---|----------------------|---------------------|
| Breed of cows | Holstein, Holstein x Jersey, HJx Brown Swiss, Holstein x Brown Swiss, Red Holstein | Holstein | Holstein | Holstein and Brown Swiss (5%) | Holstein | Holstein | Friesian x Jersey | Holstein | Holstein | 50% Holstein, 45% Cross cows & 5% Jersey cows | Holstein | Holstein |
| Calving system | Year round | Seasonal | Split (3 batches) | Year round | Year round | Split (2 batches) | Seasonal | Seasonal | Split (2 batches) | Year round | Split | Split |
| Milking area (ha) | 55 | 60 | 100 | 40 | 100 | 43 | 90 | 50 | 157 | 65 | 112 | 80 |
| Type of robots | Single box | Single box | Single box | Single box | Single box | Single box | Single box | Single box | Robotic rotary | Single box | Single box | Single box |
| Number of robots (#) | 3 | 3 | 3 | 3 | 6 | 3 | 4 | 3 | - | 4 | 4 | 3 |
| Feed stations (#) | 0 | 6 | 4 | 0 | 6 | 3 | 2 | 2 | 16 (2 feeds) | 0 | 4 | 2 |
| Gate time changes | 6:00, 14:00 (feedpad) & 22:00 | 1:30, 7:30, 11:00, 13:00 & 18:00 | 8:00, 16:30 & 22:00 | Barn with free cow traffic | 03:00, 13:00 & 19:30 | 4:00, 13:00 & 20:00 | 2:30, 10:00 & 17:30 | 2:30, 10:00 & 16:30 | 4:00, 10:45, 16:45 & 20:00 | 0:00, 7:00, 15:00 (feedpad) & 15:30 | 01:00, 09:00 & 15:00 | 6:00, 13:00 & 21:00 |

Table 2: Herd information

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Cows in milk (#) | 175 | 219 | 161 | 122 | 258 | 115 | 152 | 188 | 540 | 271 | 223 | 135 |
| Heifers (%) | 32% | 3% | 33% | 40% | 26% | 12% | 27% | 28% | 14% | 18% | 29% | 13% |
| Animals that calved (#) | 20 | 0 | 21 | 11 | 33 | 6 | 13 | 47 | 0 | 25 | 2 | 4 |
| Farm stocking rate (milking cows/ha) | 3.2 | 3.7 | 1.6 | 3.1 | 2.6 | 2.7 | 1.7 | 3.8 | 3.4 | 4.2 | 2.0 | 1.7 |
| Robot stocking rate (milking cows/robot) | 58 | 73 | 54 | 41 | 43 | 38 | 38 | 63 | 540 | 68 | 56 | 45 |
| DIM (#) | 160 | 171 | 209 | 204 | 251 | 185 | 168 | 173 | 224 | 162 | 257 | 216 |

Table 3: Daily milk production and quality

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Daily milk production (kg/day) | 2,817 | 4,679 | 4,083 | 3,393 | 4,660 | 3,505 | 2,387 | 4,470 | 13,779 | 4,748 | 4,356 | 4,007 |
| Fat (%) | 4.13 | 4.46 | 4.46 | 3.3 | 4.39 | 3.92 | 5.1 | 3.95 | 4 | 4 | 4.64 | 3.66 |
| Protein (%) | 3.12 | 3.62 | 3.26 | 3.45 | 3.44 | 3.07 | 3.73 | 3.3 | 3.8 | 3.11 | 3.58 | 3.38 |
| Somatic cell count (x 1000) | 280 | 210 | 180 | 170 | 365 | 179 | 163 | 127 | 121 | 168 | 196 | 154 |

Table 4: Daily milk information

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Daily milk production herd (kg/cow/day) | 17.1 | 24.7 | 27.3 | 27.0 | 19.1 | 30.1 | 16.2 | 26.7 | 25.8 | 18.0 | 18.2 | 28.8 |
| Daily milk production cows (kg/cow/day) | 18.0 | 24.9 | 29.4 | 27.5 | 20.3 | 30.9 | 16.6 | 29.6 | 26.9 | 18.0 | 19.2 | 30.0 |
| Daily milk production heifers (kg/cow/day) | 15.2 | 16.3 | 22.9 | 26.3 | 15.5 | 23.8 | 15.4 | 19.1 | 19.2 | 18.0 | 15.8 | 20.1 |
| Daily milk production heifers:cows (%) | 85% | 65% | 78% | 96% | 76% | 77% | 93% | 65% | 71% | 100% | 82% | 67% |
| Milking frequency herd (#/cow/day) | 2.0 | 2.2 | 2.1 | 2.5 | 2.4 | 2.8 | 2.3 | 2.3 | 2.0 | 2.2 | 1.9 | 2.6 |
| Milking frequency cows (#/cow/day) | 2.0 | 2.2 | 2.1 | 2.4 | 2.5 | 2.8 | 2.4 | 2.4 | 2.0 | 2.2 | 2.0 | 2.6 |
| Milking frequency heifers (#/cow/day) | 1.9 | 2.0 | 2.1 | 2.6 | 2.1 | 2.7 | 2.3 | 2.0 | 2.1 | 2.3 | 1.8 | 2.0 |
| Concentrate ration (kg/cow/day) | 7.5 | 7.4 | 8.9 | 3.5 | 5.4 | 9.6 | 3.5 | 7.0 | 8.5 | 5.2 | 7.5 | 7.4 |
| Concentrate intake (kg/cow/day) | 6.9 | 7.1 | 8.5 | 3.3 | 3.9 | 8.8 | 2.9 | 6.3 | 8.2 | 3.8 | 7.1 | 6.9 |

Table 5: Milking cow information

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Milk production (kg/cow/milking) | 8.6 | 11.3 | 13.1 | 11.1 | 8.0 | 10.8 | 7.1 | 11.4 | 12.7 | 8.3 | 9.5 | 11.1 |
| Average time in robot (mm:ss/milking) | 6:14 | 5:36 | 5:58 | 6:05 | 6:11 | 5:45 | 6:44 | 7:10 | 5:15 | 5:47 | 5:44 | 7:00 |
| Average milk flow (kg milk/min in robot) | 1.3 | 2.0 | 2.0 | 1.9 | 1.1 | 2.0 | 1.1 | 1.8 | 2.5 | 1.5 | 1.6 | 1.7 |

Table 6: Robot performance information

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Milking events (number/robot/day) | 110 | 140 | 110 | 110 | 97 | 108 | 92 | 138 | 1077 | 143 | 117 | 120 |
| Milking time (hours/robot/day) | 12:51 | 16:35 | 12:49 | 10:29 | 12:28 | 10:26 | 10:34 | 15:08 | 11:26 | 17:13 | 11:57 | 13:25 |
| Milk harvested (kg/robot/day) | 939 | 1,560 | 1,361 | 1,131 | 777 | 1,167 | 597 | 1,490 | 13,779 | 1,187 | 1,088 | 1,327 |
| Incomplete milkings (%) | 10% | 7% | 6% | 7% | 15% | 3% | 9% | 4% | 8% | 6% | 5% | 3% |

Table 7: Animal health

| | Farm 1 | Farm 2 | Farm 3 | Farm 4 | Farm 5 | Farm 6 | Farm 7 | Farm 8 | Farm 9 | Farm 10 | Farm 11 | Farm 12 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Lameness (cows detected or treated) | 4 | 0 | 0 | 3 | 3 | 1 | 0 | 0 | 2 | 0 | 1 | 1 |
| Mastitis (cows detected or treated) | 15 | 3 | 1 | 6 | 2 | 3 | 0 | 6 | 7 | 12 | 1 | 3 |
| Lameness (cases every 100 cows) | 2.3 | 0.0 | 0.0 | 2.5 | 1.2 | 0.9 | 0.0 | 0.0 | 0.4 | 0.0 | 0.4 | 0.7 |
| Mastitis (cases every 100 cows) | 8.6 | 1.4 | 0.6 | 4.9 | 0.8 | 2.6 | 0.0 | 3.2 | 1.3 | 4.4 | 0.4 | 2.2 |

For updates go to www.dpi.nsw.gov.au/agriculture/livestock/dairy-cattle/robotic-milking-systems

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