

# NMHC Industry Performance Survey 2004

## INTRODUCTION TO SURVEY

In the late 1990's the Milk Harvesting Centre surveyed the dairy industry in Victoria to identify some of the times involved in various aspects of the milk harvesting process. The sample was based on 3 herd size groups, small, medium and large. Data from the other states was added to this information finishing in 2000. These surveys were conducted through the mail in all states except for West Australia where the data was collected by personal interview.

This data from 1000 dairy farms was compiled and used to create benchmarking graphs called 'Industry Performance Graphs'. These were published in the CowTime Guidelines<sup>1</sup> and used extensively in the CowTime program.

The Industry Performance Graphs were used in CowTime's Milking Monitor to provide an indication to farmers of how their performance sits in relation to their peers and also to help them identify which parts of their system they should target to get the most value for their effort.

CowTime resurveyed the industry in April - May 2004. The new survey was developed and conducted as a phone survey. This choice was made to try to reduce the time frame required to carry out the survey and get the data. It was also hoped that it would improve the response rate and the data might be more reliable.

The main aim of the survey was to update the labour productivity data by determining the times involved in the various aspects of the milk harvesting process. This would provide some evidence of improvement in the industry over the last 5 years and provide some initial indication of CowTime's impact.

Other aims included:

- trying to identify the level of automation or advanced technology used in current milk harvesting systems,
- collecting some attitudinal indicators to use as benchmarks in the CowTime program, and
- collecting market research information.

Advice was taken from the CowTime Advisory Committee and considerable assistance was given by the survey conductor to formulate a survey that was about 20 minutes in length. There is a copy of the survey questions included in the 2003 - 2004 CowTime Milestone Report. The interviews ended up taking close to 27 minutes to complete.

Biometric advice suggested that one hundred respondents of each shed type would be adequate to determine performance trends. The firm contracted to conduct the survey sourced the farm contacts from a comprehensive list of dairy farmers in all States purchased from Axiom Databases. None of the Food Safety Authorities in the States were prepared to make a list available due to the privacy laws currently in place.

The survey was conducted mainly during the month of April 2004. Preliminary processing of the data indicated some inconsistencies in some of the data. Selected farms were contacted again by the survey team to try to verify information in doubt. Lessons have been learned from this exercise and in

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<sup>1</sup> CowTime Guidelines for Milk Harvesting, Klindworth, D., Greenall, R., Campbell, J. eds. (2003) Dairy Research and Development Corporation. 84 William St., Melbourne 3000.

future a number of checking calculations should be built into the survey software in order to flag the questionable information during the first contact.

The interview was conducted between a trained interviewer organised through Down to Earth Research and the person who managed the milk harvesting process on that farm. The farms were contacted randomly and asked if they milked in the year 2003. If yes, they were then asked about their shed type. If their particular shed type was still required to fill the quota of 100 dairies, the survey continued. Only 20.2% of farms initially contacted refused to participate.

This report contains the following sections:

- PARTICIPANT FARM DESCRIPTIONS
- Benchmarking Milk Harvesting Labour Productivity
- Time In The Day Spent Milk Harvesting
- Use Of Technology In Dairies
- Milking Procedures
- Facility Changes And Upgrading
- General Labour Use Information
- Attitudes Of Farmers To Milking
- Milking Injury Statistics

## PARTICIPANT FARM DESCRIPTIONS

This section describes the general farm data giving some background to the sample providing the milk harvesting information.

### Dairy type

Based on the total number of farms contacted by the survey staff to fill the desired quotas, the proportion of different shed types within the industry is:

Shed types	
Swingover	55%
Double-up	27%
Rotary	16%
Walk through	2%

### Farm description of the survey participants meeting the quota

The locations of the farms that were included in the survey quota are listed in state groups below.

States represented	Number of farms
New South Wales	27
Victoria	246
Queensland	9
South Australia	12
Western Australia	8
Tasmania	0
<b>TOTAL</b>	<b>301</b>

Frequency of milking during the peak of the 2003 season	
1 x per day	0
2 x per day	299
3 x per day	2

Distribution of calving	
On a seasonal basis, where most of the herd calves in one main group each year.	150
Year around, with cows calving in most months	63
On a split calving basis, where your herd calves in two or three batches	88

Sheds types	
Double up	93
Double up, rapid exit	7
Rotary	100
Swingover	97
Swingover, rapid exit	4

Herd size	
<150	66
150 - 250	99
251 - 450	88
450+	48

Number of clusters in dairies	
<b>Swingover:</b>	
▪ average	16.9
▪ range	6 - 40
▪ most frequent number	20
▪ second most frequent number	10
<b>Double ups:</b>	
▪ average	21.5
▪ range	10 - 48
▪ most frequent number	20
▪ second most frequent number	16
<b>Rotaries:</b>	
▪ average	45
▪ range	14 - 92
▪ most frequent number	50
▪ second most frequent number	44

Cows/cluster				
Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	4.5	8.4	10.3	20.8
Rotary	1.9	9.2	11.4	46.7
Swingover	6.5	11.5	14.4	42.5

Month of peak milk production in 2003	
January 2003	3
February 2003	2
March 2003	2
April 2003	0
May 2003	2
June 2003	4
July 2003	4
August 2003	5
September 2003	34
October 2003	136
November 2003	98
December 2003	11

Age of milk harvesting managers	
18 - 29	23
30 - 39	46
40 - 49	92
50 - 59	101
60 - 69	35
70 or older	4

## BENCHMARKING MILK HARVESTING LABOUR PRODUCTIVITY

The data required to recalculate the industry performance benchmarks was collected from a series of questions similar to those used in the Milking Monitor. The data has been filtered to remove farms that showed litres per cow per day values above 40 litres averaged across the herd and less than 15 litres per cow per day. This left 296 farms used for the productivity figures based on milking time and litres of production at their peak month of lactation.

Shed types (n=296)	number
Double up	97
Rotary	99
Swingover	100

In this 2004 survey Walk Thru style dairies were not asked to participate as they represent 'old' technology that is fast disappearing from the industry (currently 2% of the industry).

### Cows/operator/hour (CUPS ON TO CUPS OFF)

This calculation identifies the number of cows milked per operator in an hour of milking. The time data is from first 'cups on' to last 'cups off' (CUPS ON TO CUPS OFF). This figure is often referred to in the dairy industry and is one of CowTime's main benchmark values.

The results from the new survey are summarised in the following table.

**Cows/operator/hour (CUPS ON TO CUPS OFF)**

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	24	70	92	146
Rotary	40	115	145	242
Swingover	30	70	86	204

Breaking the data down a bit farther, looking at only dairies that were built new in the last five years the figures are as follows:

**Cows/operator/hour (CUPS ON TO CUPS OFF) for dairies built new in the last five years**

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=10)	62	105	134	146
Rotary (n=21)	44	144	162	220
Swingover (n=13)	53	82	94	180

Compare that set of numbers to the following for dairies that have not been upgraded or extended in the last 15 years:

**Cows/operator/hour (CUPS ON TO CUPS OFF) for dairies that have not been upgraded by updating or extending the building or equipment in the last 15 years.**

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=13)	24	60	75	111
Rotary (n=15)	46	100	120	179
Swingover (n=8)	35	61	77	110

It is clear that newer dairies are processing more cows per operator hour than older ones. An average of the number of clusters in dairies reporting an update in the last 1 or 2 years indicates that there is on average 4 more clusters per dairy compared to dairies reporting the last upgrade was more than 10 years ago. The trend to higher milk production per cow must also have some impact on this.

**Litres/operator/hour (CUPS ON TO CUPS OFF)**

This calculation identifies the litres of milk harvested per operator per hour of milking from first cups on to last cups off (CUPS ON TO CUPS OFF). This is a better figure to compare the productivity of a milk harvesting system than

cows/operator/hour. After all, farmers are paid for the milk that is harvested not the cows that are run through the dairy.

The new results for this calculation are summarised in the following table.

Litres/operator/hour CUPS ON TO CUPS OFF

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	305	875	1200	2250
Rotary	341	1647	1950	3405
Swingover	335	897	1152	2294

There is certainly upward movement in these figures from the earlier survey. Increasing milk production per cow and larger dairies may account for some of the increase since the last survey.

Below is a break down of the results for dairies reported as built new in the last five years.

Litres/operator/hour CUPS ON TO CUPS OFF for dairies built in the last five years

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=10)	828	1459	1607	2080
Rotary (n=21)	622	1950	2250	3070
Swingover (n=13)	833	971	1470	2000

The following table gives the calculation for dairies that have not been upgraded by updating or extending the building or equipment in the last 15 years.

Litres/operator/hour CUPS ON TO CUPS OFF for dairies that have not been upgraded by updating or extending the building or equipment in the last 15 years.

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=13)	305	653	1178	1500
Rotary (n=15)	565	1500	1787	2475
Swingover (n=8)	375	662	745	1675

Increasing cluster numbers and cow production would have an impact on the comparison between these dairies.

### Cow collection time

The earlier survey asked for the average distance the herd had to walk to a milking. The average time taken to do that was also requested. These values were used to calculate the speed at which the cows walked. This proved to be a frustrating

exercise and gave results that were at best a crude approximation of herd speed. CowTime has identified preferred cow walking speeds and has used them as targets.

The current survey asked for the labour time taken on average to collect the cows for milking. This value helps to define the total milk harvesting time and focuses on the labour time required for this task. It is also useful in identifying the amount of time cows are away from the paddock.

The time taken to collect cows is shown in the following table.

Cow collection time in minutes

Herd size	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
< 150	5	20	30	45
150 - 250	2	30	30	90
250 - 450	10	30	35	135
450 +	10	30	45	90

Average time across all farms sampled was 28 minutes.

In terms of labour time per cow the spread is shown in the table below.

Time in labour seconds per cow to collect herd

Minimum Value	Median	Average	Maximum Value
0.5	6.7	7.8	36.9

Some farms have a very labour efficient system for collecting cows and others clearly have a fairly labour intensive system.

### Machine cleaning time

This value shows the labour time taken to clean the milking plant. The updated information does not contain specific information on cleaning systems. The major concern here from a productivity point of view is the labour time required. This information is presented in the following table.

Machine cleaning time in minutes

Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
1	10	15	45

### Yard cleaning time

Yard cleaning is one area where many farms spend a lot of time. Often this is not a very productive use of a person's time. The new results are summarised in the table below.

Yard Cleaning time

Cleaning system	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Flood wash	1	5	10	40
Hose	4	15	20	50
Hydrant wash	5	10	10	30
Scraper & hose	5	15	20	30

### Clusters per operator

This calculation shows the number of clusters that operators are using. In general the more clusters used per operator the better the performance of the dairy in terms of litres of milk harvested per labour hour. All the clusters listed for a dairy were used in the calculation. The data suggests that 11 swingover dairies had extra or lazy clusters in them.

#### Clusters per operator

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	5.7	16.0	20.0	32.0
Rotary	7.0	22.0	25.0	40.0
Swingover	4.0	10.0	14.0	24.0

In dairies that have been built in the last five years there is a trend for more clusters per operator than in earlier dairies.

#### Clusters per operator for sheds built in the last five years

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=10)	14	20	24	32
Rotary (n=21)	7	25	25	40
Swingover (n=13)	10	13	15	20

This compares with the following data for sheds that have not been upgraded by updating or extending the building or equipment in the last 15 years.

Clusters per operator for dairies that have not been upgraded by updating or extending the building or equipment in the last 15 years.

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up (n=13)	5.7	10.7	16.0	30.0
Rotary (n=15)	8.0	21.0	22.0	30.0
Swingover (n=8)	4.0	7.4	11.0	16.0

### Cows per cluster per hour

This is an indication of how many cows are being milked per cluster in an hour and so is a measure of how well capital/clusters is/are being utilised.

There are many variables that impact on this calculation. Some of them are the production of the cow, the cow flow, the number of clusters being managed by the milking staff and the efficiency of the milking plant.

### Cows per cluster per hour

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	2.4	4.8	5.7	8.3
Rotary	2.5	5.5	6.0	9.7
Swingover	3.8	6.7	7.9	12.0

### Litres per operator per hour (Total Milk Harvesting Time)

This benchmark has been used to summarise the total productivity of the milk harvesting process. The calculation takes into consideration all the labour times involved in milk harvesting. This includes cow collecting time, cups on to cups off milking time, the number of operators, machine cleaning, shed cleaning and yard cleaning times. This is divided into the litres of milk harvested in a day.

### Litres per operator per hour (Total Milk Harvesting Time)

Shed Type	Minimum Value	Median	3 <sup>rd</sup> Quartile	Maximum Value
Double up	231	714	974	1800
Rotary	309	1431	1674	3029
Swingover	289	740	952	1884

### TIME IN THE DAY SPENT MILK HARVESTING

There is a much repeated statement that over 40% of dairy farms spend more than 50% of their time in milk harvesting. It is difficult to track down the source of this statement.

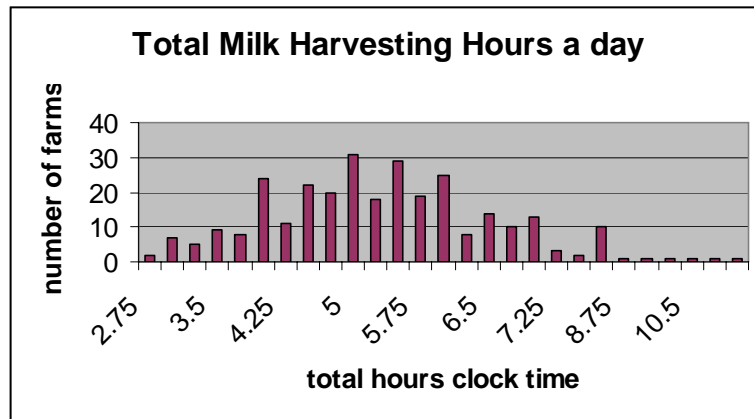
In the new survey participants were asked to indicate the clock time when someone went to collect the cows for milking and the clock time when the cleaning up after milking was finished. This was done for all milkings over a typical 24 hour period at the time of peak milk flow in the 2003-4 season. This was converted into total minutes of milk harvesting time. Note that this is not labour time just time elapsed on the clock.

From the new survey it is possible to say the following:

- 92% of surveyed farms spend 4 or more hours a day on milk harvesting activities.
- 70% of farms spend 5 hours or more a day on milk harvesting activities.
- 37% spend 6 hours or more on milk harvesting activities.
- 15% spent 7 hours or more a day on milk harvesting activities.
- 5% spend 8 hours or more on milk harvesting activities.

The following figure shows the distribution of times required for milk harvesting taken from the survey data. The time taken was rounded up to the nearest quarter of an hour.

Total milk harvesting hours in clock time a day (n=296)



**USE OF TECHNOLOGY IN DAIRIES**

Farms in the sample were asked about various items of technology. The following tables provide an over view of their responses.

Automatic identification (EID) by shed type (n= 39)		
	Double up	7
	Rotary	29
	Swingover	3

Automatic drafting by shed type (n=25)		
	Double up	3
	Rotary	20
	Swingover	2

Satisfaction with the automatic drafting system being used		
	Very satisfied	15
	Fairly satisfied	5
	Not too satisfied	2
	Not satisfied at all	3

Activity monitors by shed type (n=13)		
	Double up	2
	Rotary	10
	Swingover	1

Computer assisted feeding by shed type (n=29)		
	Double up	3
	Rotary	26
	Swingover	0

Cup removers (ACR) by shed type (n=84)		
	Double up	39
	Rotary	21
	Swingover	24

Satisfaction with the ACR system being used		
	Very satisfied	62
	Fairly satisfied	20
	Not too satisfied	2
	Not satisfied at all	0

Dairies with stall gates - excluding rotary and rapid exit dairies with built in stall gates		
	Double up	15
	Swingover	16

Does the plant wash system have automatic chemical dosing so that there is no handling of chemicals? (n=301)		
No		238
Yes		63

Dairies with an automatic plant wash system (n=301)		
No		251
Yes		50

Dairies with an automatic vat washing system (n=301)		
No		69
Yes		232

Person operating the auto vat washing system (n=232)		
The milkers		53
The tanker driver		179

System is used to clean the yard (n=301)		
Scraper and hose		20
Hose only		189
Flood wash		77
Hydrant wash		13
Other		2

In terms of the impact of technology on productivity a simple comparison does show a simple relationship. The following items of technology were used in this comparison: EID, Automatic Drafting, Activity Monitors, Computer Assisted Feeding, ACRs, Automatic Teat Spraying, Automatic Plant Cleaning, And Automatic Chemical Dosing. The number of times any of these items was listed was counted and divided by the number of farms in the group under consideration. This ratio gives a very simple comparison.

Comparison Of Technology Use		
Criteria for comparison	Bottom 25%	Top 25%
Litres per operator per hour (cups on cups off)	0.4	2.0
Herd size (# cows milked at peak)	0.46	2.1
Cluster numbers in Dairy	0.5	2

There is a clear usage of more technology in the top end of the groups selected for comparison.

Comparison Of Technology Use	
Dairy type	Technology ratio
Double up (n=97)	1.6
Rotary (n= 99)	2.7
Swingover (n= 100)	1.3

Clearly there is a very strong link between rotaries and increased use of automation.

## MILKING PROCEDURE

The following information concerns aspects of the milking procedure.

Number of operators normally milking in the dairy at a milking by shed type

	Number of operators									
	1	1.1	1.25	1.5	1.75	2	2.25	2.5	3	6
Double up (n=100)	34	0	1	15	0	48	0	3	0	0
Rotary (n=100)	4	0	1	3	0	71	2	9	9	1
Swingover (n=101)	40	1	5	13	1	39	0	1	0	0

Dairies that routinely disinfect cows' teats after milking (n=301)

Yes, always	275
Yes, sometimes	5
No	21

Method use to disinfect teats after milking (n=280)	
Dip cup	11
Handheld spray wand	246
Automatic spray (no person required)	23

Teat hygiene routinely undertaken before attaching clusters (n=301)	
Wash all teats	26
Strategically wash only dirty teats	236
Disinfect all teats	3
Stimulate all teats	6
None of the above	34

Number of times milker leaves the pit or milking area to push cows onto the milking platform (n=301)	
Never	65
Once per milking	55
2 - 3 times per milking	80
More than 3 times per milking	90
Have dedicated cow pusher, do not need to leave milking area	11

Time required to get cows to stand in the correct place on the milking platform , this excludes rotaries. (n=201)	
Never	95
Once per milking	19
2 - 3 times per milking	27
More than 3 times per milking	31
Rarely	29

Frequency that milkers have to wait for cows to milk out (n=301)	
Almost every side	32
Sometimes	112
Rarely	72
Never	85

Number of dairies that allow cows to go around twice at a typical milking? (n=100)	
No	2
Yes	98

Percentage of cows that go around twice at a typical milking at peak season (n=98)	
Range	0.2% to 100% average 7.9%

Percentage of cows that manure in the shed (n=294)	
Range varied from	1% to 90% average 10.7%

Number of farmers indicating the proportion of cows manuring in their shed is... (n=294)	
Very acceptable	67
Fairly acceptable	189
Not too acceptable	24
Not acceptable at all	19

Number of farmers using exfoliation gloves or similar to clean the clusters (n=301)	
Yes	59
No	242
Of the 'no' responses - number who knew about the use of exfoliation gloves	80

Number of dairies that use a backing gate (n=301)	
No	112
Yes	189

Use of backing gates by dairy type (n=189)	
Double up	52
Rotary	89
Swingover	48

Frequency of use of the backing gate (n=189)	
At every milking	124
Only at the start of the season	16
Sometimes	47
Majority of the time	2

Number of herringbone dairies with an entrance race (n=201)	
Yes	83
No	118

Length of entrance race (n=83)	
Less than 4m	68
Greater than 4 m	15

## FACILITY CHANGES AND UPGRADING

This section looks at information relating to changes or upgrades to dairies and the time frame in which those changes happened.

Time since the dairy was last upgraded by updating or extending the building or equipment (n=301)	
12 months or less ago	33
Up to 2 years ago	40
Up to 3 years ago	30
Up to 4 years ago	26
Up to 5 years ago	20
Between 5 and 10 years ago	75
Between 10 and 15 years ago	40
More than 15 years ago	18
Never been upgraded	18

Types of changes undertaken at the last upgrade (some gave more than one response)	
New dairy	103
Extended the dairy	72
Updated equipment	113
Put in more equipment	87
Improved/extended yards	7
Don't know prior to buying	1
Modified dairy	5

Impact has this upgrade had on the milk harvesting system (some gave more than one response)	
Use less time	205
Milk more cows per hour	199
Reduce costs	125
Other	1
Less stress on cows/ increased production	5
Healthier cows	1
Easier/safer working conditions	14
More reliable system	2
Store more milk	3
None	7

Number of farmers without a new dairy that would like to upgrade (n=200)	
Yes, a substantial upgrade	61
Yes, a partial upgrade	46
No need for upgrade	92

Type of improvement or upgrade desired (first thing to do)	
Build a new dairy	48
Hire more labour	3
Install more clusters	39
Install cup removers	49
Install stall gates	13
Install auto drafting	3
Others	18
Computerised identification/id system	26
Extend/alter/improve yard	13
Flood wash/better yard wash	13
Auto wash for milking machines	5
Rapid exit	4
Improve dairy entry	1
Install/improve backing gate	6
Install/improve feed system	5
Install computerised ID system	2
Install auto teat wash	3
Upgrade/install new milking machinery	18
New milk vat	4
Extend/improve platform/pit	5
Nothing, happy with current system	9
Nothing, too expensive/no future in dairying	7

Reason for wanting an upgrade	
Improve use of labour	150
Shorten milking time	143
Milk more cows	92
Better working environment	161
Potential to cut costs or increase profit	81
Better for cow health	108
Other	3
Easier/more accurate cattle identification	4
No changes will be made/cost prohibitive	12

## GENERAL LABOUR USE INFORMATION

This section is concerned with information relating to the use of labour on the dairy farm.

Number of farms that employ off-farm labour / staff to milk (n=301)	
Yes	167
No	134

Frequency of employed staff milking (n=167)	
At every milking	86
8-12 milkings per week	15
4-7 milkings per week	9
A few milkings on a weekend	25
Only a couple of weeks per year	15
A couple of days per year	22

Following is a break down of staff employed by dairy type.

Frequency of employed staff milking in Double up dairies (n=46)	
At every milking	18
8-12 milkings per week	3
4-7 milkings per week	1
A few milkings on a weekend	6
Only a couple of weeks per year	9
A couple of days per year	9

Frequency of employed staff milking in rotary dairies (n=76)	
At every milking	58
8-12 milkings per week	8
4-7 milkings per week	7
A few milkings on a weekend	6
Only a couple of weeks per year	2
A couple of days per year	4

Frequency of employed staff milking in Swingover dairies (n=45)	
At every milking	16
8-12 milkings per week	4
4-7 milkings per week	1
A few milkings on a weekend	12
Only a couple of weeks per year	4
A couple of days per year	8

Limitations to dairy performance (n=301)	
Shortage of labour	22
Number of clusters	70
No /neither	206
Shed design	1
Vat size	1
Yard size	1
Labour skills	0

## ATTITUDES OF FARMERS TO MILKING

This section is concerned with attitudinal responses by farmers to a number of items.

Satisfaction with the current milk harvesting system on the farm (n=301)	
Very satisfied	113
Fairly satisfied	157
Not too satisfied	20
Not satisfied at all	11

Involvement of respondent in the milking process ie normally physically involved in milking (n=301)	
Yes, always	165
Yes, mostly	74
Yes, sometimes	42
No	20

How 'easy' respondent finds milking (n=301)	
Very easy	114
Fairly easy	151
Not too easy	10
Not easy at all	6

How 'relaxed' respondent is when they are milking (n=301)	
Very relaxed	110
Fairly relaxed	160
Not too relaxed	8
Not relaxed at all	3

## MILKING INJURY STATISTICS

This section gives an indication of milk harvesting injuries and their impact on time lost.

Number of dairies where injuries have occurred to the respondent or staff during milk harvesting in the last 12 months (n=301)

Yes	40
No	261

Milkings missed as a result of the injury (n=40)

Yes	22
No	18

Number of milkings missed in total as a result of the injury (n=22)

1 or 2 milkings missed	3
3 to 10 milkings missed	3
Up to 1 week of missed milkings	2
More than 1 week of missed milkings	5
More than 4 weeks of missed milkings	9

## CONCLUSION

The survey has gathered a significant amount of data concerning both the process of milk harvesting and the facilities in which it is conducted across Australia. The productivity figures will be used to update the CowTime benchmarks that are used in the Milking Monitor.

Hopefully a similar survey can be conducted in another 5 years to update the information.