



# Working out Work Routine Time

## 1. Introduction

The tasks that a milker must complete for each cow at milking make up the work routine time. Measured in seconds per cow these tasks determine how many cows a milker can handle in an hour. Going into the dairy and measuring the time taken to perform work routine tasks is one of the first steps towards a more efficient routine at milking. The tasks in a typical milking work routine are:

- Cow entry – time spent from when the entry gate is opened until the last cow is in place or the first cluster is attached.
- Feeding – time required for the milker to feed the cows.
- Teat preparation – time spent preparing teats prior to clusters being attached for milking.
- Cluster attachment – the time spent putting the cluster onto the cow.
- Cluster removal – time required to remove the cluster from the cow.
- Teat disinfection – time required to apply disinfectant to teats after milking.
- Cow exit – time spent from when the exit gate opens until the 'cow entry' time starts.
- Miscellaneous – time spent on other tasks like removing test buckets, drafting, checking tail paint, dealing with cluster slips and the like.

## 2. Interpretation and relevance to Australian conditions

Tasks taking extra time can be identified and improved resulting in a more efficient milking routine. Measuring the Work Routine Time can be useful in planning for a new dairy or for modifications to the present system.

## 3. Features of Work Routine Times

### Measuring Work Routine Time

Have someone record the amount of time you take for each of the tasks during an 'ordinary' milking and complete the times for each on the 'Work Routine Time Recording Sheet'. When added together the total time to complete the work routine tasks equals the total work routine time required for each cow that is milked in your dairy.

**Cow Entry:** To work out the time required for cow entry, take the time from when the entry gate is opened until the last cow is in place. Divide this time (measured in seconds) by the number of cows in the row or batch. If cluster attachment begins before all cows are in place then time only until cluster attachment begins.

Cow entry time for a rotary dairy should be 0. However some time may be required of the milker to load cows when things are not running smoothly. Try to estimate this time over a couple of minutes and divide this by the number of cows that have been milked in that time. It will hopefully average only a few seconds across the whole period

**Feeding:** In dairies with automated feeding systems no time may be required of the milker to feed the cows. In dairies where each cow is fed manually by pulling cords or the like, this time should be recorded if it happens when other tasks could be performed such as cluster attachment. Take the time required for the batch and again divide it by the number of cows in the batch. If this is done as the cows are entering then very little time is taken up beyond cow entry time.

This time is generally 0 for rotary dairies as the operator is rarely involved with feeding.

**Teat Preparation:** Time can be spent preparing teats prior to clusters being attached by washing or cleaning them. Take the total time required for the task for a row and divide that time by the number of cows in a batch. In dry conditions for many herds this time is 0.

An estimate of the time needed to prepare teats on a rotary dairy can be made by timing the 'cups on' operator(s) over several minutes and dividing it by the number of teats prepared (excluding any cluster attachment time).

**Cluster Attachment:** This is the time required putting the cluster onto the cow. Record the length of time taken to attach clusters to an entire batch by the milker and allow them time to return to the starting point for the next task. However, not all dairies are able to work with such clear boundaries between tasks. In these cases, time how long it takes to attach say five clusters and divide that time by 5.

An estimate of the time needed to attach clusters on a rotary dairy can be made by timing the 'cups on' operator(s) over several minutes and dividing it by the number of clusters attached (excluding any teat preparation time).

**Cluster Removal:** This is the time required to check that milking is finished, remove the cluster from the cow and hang it up or swing it over. Record the time required by the milker to remove the clusters from an entire batch and divide this number by the number of clusters on that side. This can be complicated if a number of clusters need to be checked a couple of times to see if the cow is milked out. Cluster removers would generally remove this task from a work routine.

The time needed to remove clusters on a rotary dairy can be determined by timing the 'cups off' operator(s) over several minutes and dividing it by the number of clusters removed (excluding any teat disinfection time).

**Teat Disinfection:** Time is required to apply disinfectant to teats if this task is not automated. Teat disinfection is best worked out by treating an entire run but is also frequently determined by treating a small number of cows and then working out how much time was used per animal.

An estimate of the time needed to disinfect teats on a rotary dairy can be made by timing the 'cups off' operator(s) over several minutes and dividing it by the number of cows disinfected (excluding any cluster removal time).

**Cow Exit:** Cow exit time is the time in your system that the milker is waiting for the cows to exit the platform and is not able to do other milking related jobs. If all cows walk out before the next side is allowed to enter then the exit time for the batch is divided by the cow numbers to work out the time required per cow. In some dairies cows coming onto the platform follow the exiting cows. This results in reduced time for both entry and exit.

Cow exit time for a rotary dairy should be 0. However some time may be required of the 'cups off' milker to encourage cows to get off the platform when things are not running well. Try to estimate this time over a couple of minutes and divide this by the number of cows that have been milked in that time. It will hopefully average only a few seconds across the whole period.

**Miscellaneous:** This section is used to include miscellaneous tasks that occur during milking like removing test buckets, drafting, checking tail paint, dealing with cluster slip and so on. In a simple routine this time is generally at least 10% of the total work routine. In a rotary dairy estimate the time spent on miscellaneous duties for both the 'cups on' and 'cups off' milkers over several minutes and divide by the number of cows passing their position.

## 5. Expected benefits

A good understanding of your work routine times can highlight aspects of the milking process that would benefit the most from improvement. Long times spent on cow entry and exit for example, may highlight opportunities to improve cow flow. Having a good understanding of your work routine times can help to establish reasonable expectations for staff that work in the dairy also.

## 6. Potential challenges with implementation

Getting someone to come along to the dairy to work out the work routine times can be a challenge. Many milkers do not have a realistic understanding of the times milking tasks take. There is a constant drive to reduce Work Routine Times. This pressure must not compromise milk quality, udder health or ask too much of the operators.

## 7. Robustness of this information

Reprinted from CowTime Guidelines for Milk Harvesting, pages 257 – 260

## 8. References and further reading

CowTime Guidelines for Milk Harvesting. Edited by Darold Klindworth et al, DairyAustralia, 2005

## Herringbone work routine time recording sheet

Work Routine Task	Secs/cow
Cow entry	
Feeding	
Teat preparation	
Cluster attachment	
Cluster removal	
Teat disinfection	
Cow exit	
Miscellaneous	
<b>TOTAL WORK ROUTINE TIME</b>	<b>SECONDS PER COW</b>

Your Calculated Work Routine Time is \_\_\_\_\_ seconds per cow.

## Rotary work routine time recording sheet

A slightly different table should be used for each of the 'cup on' and 'cups off' operators in a rotary situation. Milkers at each position on the rotary work independently of each other.

Task	Cups on (Seconds/cow)	Cups off (Seconds/cow)
Cow entry		
Feeding		
Teat preparation		
Attach cluster		
Remove cluster		
Disinfect teats		
Cow exit		
Miscellaneous		
<b>TOTAL WORK ROUTINE TIME</b>	<b>SECONDS PER COW</b>	<b>SECONDS PER COW</b>

Your Calculated Work Routine Time is  
 'Cups on' : \_\_\_\_\_ seconds per cow.  
 'Cups off' : \_\_\_\_\_ seconds per cow.