

# Efficient milking facilities

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## Summary

- Milking facilities should be designed so that the milker can carry out the complete milking without leaving the pit. Aim to complete milking in under 90 minutes.
- Appropriate animal handling facilities are required to achieve this goal, including good cow flow into and out of the parlour.
- Drafting facilities save time, provide gentle cow treatment, and maximum cow traffic speed through the parlour.
- Cluster removers eliminate over milking and provide consistency of milk-out.

## Introduction

Milking is the main chore on dairy farms and typically consumes over 30% of total labour input. In the past, most dairy farmers focused on having about ten cows per milking unit and space for additional units was in many cases omitted. In the future, apart from restricted land resources, labour is likely to be the most important factor limiting herd size. Hence, having a parlour with a large output in terms of kg's of milk produced per person per hour will be necessary. The number of milking units an operator can safely handle is now a major issue, and all forms of automation are being considered by farmers as labour demand in milking parlours is now a priority. Herd sizes will continue to grow in Ireland, driven by the abolition of the quota regime in 2015. Against this background, many farmers are milking in unsuitable parlours and need to invest in a new parlour to suit their needs. With high labour costs and problems accessing skilled labour, the recent trend has been to install milking parlours with a greater number of units to be handled by one operator. Installing a new parlour is an expensive, once in a generation investment and should be planned carefully.

## Output of milking parlours

- The choice of milking systems should be related to the number of cows currently being milked and the herd size envisaged for the future. *Plan to allow for milking an expanded herd in no more than 1 hour 30 minutes.*
- Larger herd sizes will lead to a greater focus on time, working conditions and ergonomics associated with milking. It is important that maximum potential milking performance be achieved, either from new milking installations or from changes to the existing milking parlour size and design.
- Generally it is better to focus on having adequate milking units at the expense of high levels of automation.

## Automatic cluster removers (ACRs)

- While cluster removers are often considered unnecessary in smaller parlours (less than 14 units), they offer great flexibility in larger parlours. The installation of ACRs can improve cow's health by eliminating the risk of over-milking.
- Cluster removers ensure consistency around the end-point of milking, which is beneficial if the milking task is carried out by a number of different people.

- Swing arms are usually required for correct operation, i.e. to prevent clusters getting dirty and swinging free across the pit when detached, and to support the rams for cluster removers and also to support the long milk tube.
- If planning to install cluster removers at a later date, swing arms should be installed first day, making fitting of cluster removers easier in the future.

### Bailing systems

The installation of bailing systems allows cows to be located conveniently for proper operation of ACRs. The main advantage with bailing systems is that cows are controlled and positioned better for easy and safer cluster attachment and removal, compared to having a straight-breast rail or angled mangers. When there is a large variety of cow sizes in the herd (e.g. if there is a large number of first lactation animals), extra cows can fit into the row unless there is a suitable cow positioning system. This causes poor cow position and may double the row time.

### Advantages of well-designed drafting facilities at exit from the parlour:

- Save time, provide gentle cow treatment, and maximum cow traffic speed through the parlour.
- Cows can be accurately drafted and normal cow flows are not disrupted.
- A system that funnels cows into a single file on exit from the parlour and into a chute is required. This can then widen after drafting to allow for rapid cow exiting.
- A short self-closing drafting gate can be opened across the race from the pit via a rope and pulley system. It is important that cows have adequate space in front of them when they are being drafted so that they do not hesitate at the drafting gate passage.
- A secure holding pen should be of adequate size (e.g., hold 10% of the herd), should have a gate to guide animals towards a crush, and provide shelter where cows are held for long periods.

### Conclusions

Efficient milking involves successful interactions between the cow, milker and the milking facilities. Investment in key technologies such as those described in this paper can contribute to achieving the goal of efficient milking. Choice of technologies will be farm specific but should be prioritised in order of time saved during the milking process.

