DairyNZ Milksmart

Rotary dairies

External rotary dairy

Merv Hicks, a dairy farmer from Taranaki, developed the rotary milking platform in 1969. External rotary dairies consist of a circular rotating platform, with the milker positioned on the outside of the platform. Cows walk on to the platform and cups are attached at the beginning of the rotation and removed at the end. Cows back off the platform when milking is complete.

Large herds are almost always milked in rotary dairies. The higher capital outlay compared to the equivalent herringbone is justified by greatly increased labour efficiency, the opportunity for more automation and a better milking environment. Table 1 summarises the benefits and challenges associated with this type of dairy design.

Table 1. Rotary dairies – advantages and disadvantages.

Advantages	Disadvantages
Quick entry and exit times if the system is working well.	Expensive to build and automate due to the number of bails and clusters.
Cow flow is less affected by cow/people interactions.	Difficult to expand.
Usually a low line milk line.	Without automation it requires at least two milkers.
Little walking required of the milker.	A one-milker operation may be possible using automation. However in this case cows are not seen or checked after milk out – this can lead to herd health issues, and Electronic ID is needed for drafting.
Slow milking cows do not hold up more than one set of cups.	
Platform speed sets the milking rate (a positive and a negative!).	Awkward for drenching.
Platform speed can be varied with the stage of lactation of the herd.	Difficult for the milkers to see the cows for at least some of the milking.
Automation (ACR, Electronic ID, feeding systems) are much easier to install and perform better.	Cows frequently milked out before they get to the cluster removal station.
Automatic feeding systems are economical to install.	More moving parts than a herringbone, requiring more maintenance.
Generally bright and airy working environment with protection from the weather.	
Easy to delay 'cupping-on' until after milk 'let-down'.	

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Figure 1. External rotary dairies.

Internal rotary dairy

In internal rotary dairies the milker is positioned on the inside of the rotating platform for cupping on and off. The cows turn to get onto the platform, face outwards, and at the end of milking walk forwards off the platform.

In general, this type of dairy provides a good working environment for people and can be efficient to milk in. However, cows need training to flow well. Table 2 summarises the benefits and challenges associated with this type of dairy design.

Table 2. Internal rotary dairies – advantages and disadvantages.

Advantages	Disadvantages
All cups and udders are visible to the milker and it is quicker to replace fallen clusters than in an external rotary.	Difficult to achieve good cow flow as it is against the natural instincts of a cow to walk towards the milker.
On a small platform it is possible for one person to operate on their own, applying and removing clusters, and teat spraying.	Cows need training to learn how to turn onto the platform.
Good for training and supervison of milkers.	Cows can have difficulty knowing when to exit the platform.
Usually a low line milk line.	Expensive to build and automate due to the number of bails and clusters.
Little walking required of the milker.	Without automation it requires at least two milkers.
Slow milking cows do not hold up more than one cluster.	Cows frequently milked out before they get to the cluster removal station.
Platform speed sets the milking rate (a positive and a negative!).	More moving parts than a herringbone, requiring more maintenance.
Platform speed can be varied with the stage of lactation of the herd.	Entering and leaving the milking area is difficult unless an expensive underpass is installed.
ACR and electronic ID systems are easy to install.	
Automatic feeding systems are economical to install.	
Generally bright and airy working environment.	

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Figure 2. Internal rotary dairy.

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