

Herringbone dairies

In 1952 Ron Sharp, a Waikato dairy farmer, developed the herringbone shed design. Cows walk through from the yard onto the milking platform, lining up on both sides of a central pit (Figure 1). A single set of milking clusters means that cows on one side of the herringbone are being milked as cows on the other side leave, and a new group of cows enters.

Herringbones are still the preferred option for herds up to around 500-600 cows. Larger herds have resulted in some refinements aimed at improving cow flow through modest changes in design and innovations such as twin-pit designs and rapid exit.

'Doubling up', or having two lines of clusters (one for each side of the herringbone), can increase milking speed by about 50%, but there are additional costs in maintenance and materials.

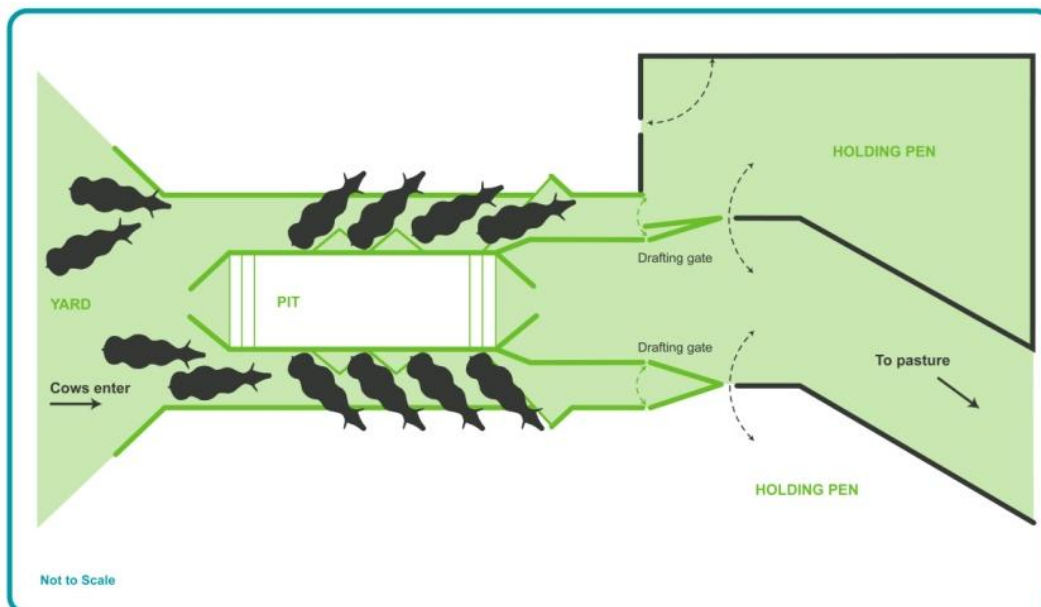


Figure 1. A simple diagram of a herringbone dairy.

To date, the herringbone dairy has been the most popular choice for New Zealand dairy farmers. **Error! Reference source not found.** summarises the benefits and challenges associated with this type of dairy design.

Table 1. Herringbone dairies – advantages and disadvantages.

| Advantages | Disadvantages |
|---|--|
| <p>Usually the cheapest to build and maintain.</p> <p>Highest cows per cluster per hour rate - cows exit and enter while other side is milking.</p> <p>Cows are in full view of the milker while in the dairy.</p> <p>Easy drenching.</p> <p>A lower number of clusters means that it is cheaper to automate than a rotary with ACR (Automatic cup removers), milk meters, etc .</p> <p>Can increase capacity easily by lengthening the pit and platform.</p> | <p>Requires a lot of walking and swivelling for milkers.</p> <p>It is very important to have a good milking routine to achieve maximum throughput.</p> <p>Installation of ACR is complicated – best achieved with the rams located on swinging arms or sliding tracks.</p> <p>ACR can complicate the milking routine.</p> <p>Loading and unloading can be slow in large herringbones.</p> <p>Slow milking cows slow down the whole row of cows.</p> <p>Feed system tricky.</p> |

Rapid exit herringbone

One variation on the herringbone style dairy is the rapid exit dairy. In this system the entire side of cows can exit by stepping forward and off the milking platform (see Figure 2).

This type of dairy is uncommon in New Zealand. Careful consideration needs to be given to whether the dairy is long enough (>40-50 bails) to make any time saved in exit times worth the increased capital cost. **Error! Reference source not found.** summarises the benefits and challenges associated with this type of dairy design.

Table 2. Rapid exit dairies – advantages and disadvantages.

| Advantages | Disadvantages |
|--|---|
| <p>Faster cow exit times than traditional herringbone dairies.</p> <p>Generally good cow entry times and cow-flow.</p> <p>Generally bright and airy working environments.</p> <p>Cows are in full view of the milker while in the dairy.</p> | <p>Cows cannot enter until the previous cows have exited. This can bring the time associated with exiting close to that of the standard herringbone.</p> <p>Cow flow in is often poor as cows have no other cow to follow up the platform.</p> <p>A much wider and higher building is required.</p> <p>More expensive to build and maintain than a standard herringbone.</p> <p>Greater yard area and hence more washing is required.</p> <p>More moving parts - potential OSH hazards.</p> <p>If two exit races are used, automation of drafting requires two of everything.</p> <p>Drafting is problematic because of the way the bail is emptied.</p> <p>Electronic identification systems are difficult to install.</p> |



Figure 2. Cows leaving in a batch from a rapid exit dairy in Queensland.

Source: National Milk Harvesting Centre, Australia.