

A walk through time

Where did the maximum milking time (MaxT) concept come from and what's the research behind it? DairyNZ's Paul Edwards looks back at the origins.



1940s

Frank Dodd runs a series of experiments in England aiming to increase peak milk flow rate, one of which includes milking first lactation animals for either four or eight minutes at all milkings, for their entire lactation. Milk yield is not significantly different between the groups.

1970s

The use of automatic cluster removers (ACRs) raises fresh questions about which criteria to use to end milking. A low-flow limit of 0.2kg/min or equivalent is established as the norm.

1990s

Danish researcher Morten Dam Rasmussen concludes that increasing the ACR removal limit from 0.2 to 0.4kg/min reduces machine-on time, improves teat condition and doesn't affect milk yield or composition, or the incidence of mastitis.

1999-2018

Rasmussen's work leads to at least a dozen studies in the USA, Australia and NZ, and considerably more if robotic milking systems are included. A range of low-flow limits are evaluated, including up to 1.2kg/min. All reach similar conclusions about the lack of impact on milk production and udder health.



2000s

Using flow rate to determine end of milking is fine if you have ACRs, but what about the 61% of New Zealand dairies that don't have them?

In Australia, Tim Clarke shows that a maximum milking time (MaxT) can be used successfully to shorten the milking duration of the slowest cows. MaxT can be applied without ACRs. In a subsequent study, he shortens the milking time of cows with infected quarters. He concludes that a milking regime that leaves ~0.5L of strip milk, on average, in the udder does not cause a detectable increase in cell count in either infected or uninfected quarters.

2007-2009

MaxT is tested by DairyNZ for the first time. Once again, no differences in milk production or udder health are observed. A milking time of seven minutes and 30 seconds at the AM milking and five minutes and 24 seconds in the PM is used from the start of lactation, with a herd peaking at 23L/cow/day.

2010s

How effective are the different strategies when it comes to saving time at herd level?

DairyNZ research concludes that applying MaxT is more effective at shortening herd milking time than increasing the ACR low-flow limit. This is because applying MaxT eliminates go-around cows in rotaries and simplifies the milking routine in herringbones, where slow-milking cows hold up an entire row.

Today

Farmers adopting MaxT are finding it's simpler to use the AM MaxT time at the PM milking as well. This gives confidence that most cows are milked out in the afternoon, ensures a consistent routine for staff, and avoids the need for different settings (e.g. ACRs) for each milking.