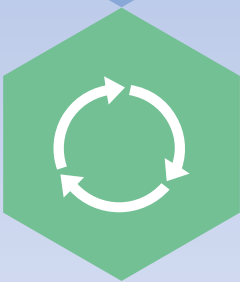


10 Steps

Reducing the carbon footprint of Tasmanian dairy

4

Enduring Cows



Supported by:





Enduring Cows – Increasing lifetime animal profit through creating longer lasting, efficient producing cows.

Increasing the average number of lactations from 4 to 5 for the herd can reduce methane emissions per kg of milksolid by 4.2%. This is equivalent to dropping replacement rate from 25% to 20%.

The production and environmental benefits are generated by:

1. A lower replacement rate, reducing costs and allocating a greater proportion of farm feed available to lactating cows.
2. Having a greater proportion of the herd in the 4-8 year old group which are producing at their peak level and driving greater profit from your herd.
3. Faster herd genetic gain, with less replacements required. It means higher level of genetic gain can be achieved through only keeping replacements from the best cows and AI sires.

To ensure the cows are productive, profitable and enduring while sustaining a lower replacement rate, it is important to:

1. Maintain a high six week in-calf rate and low not in-calf rate through,
 - a. high fertility genetics
 - b. good nutrition
 - c. actively managing body condition score
 - d. accurate heat detection practices
2. Grow replacement heifers to target liveweight through their first two years
3. Active health preventative measures through vaccinations, drenches, herd testing etc.
4. Early and accurate health treatments
5. Good animal husbandry

Young stock management

NZ research shows that heifers which reach target liveweight have better stayability in a herd than heifers which are undergrown.

Key Points

1. In general, the crossbred cows (FX, FJ and JX) had better stayability than the full breeds (F and J).
2. Heifers that were heavier were more likely to remain in the herd for successive calvings compared with heifers that were lighter.

Fig.1 Relationship between weight at 15 months of age and stayability of Holstein-Friesian-Jersey crossbred (FJ) heifers

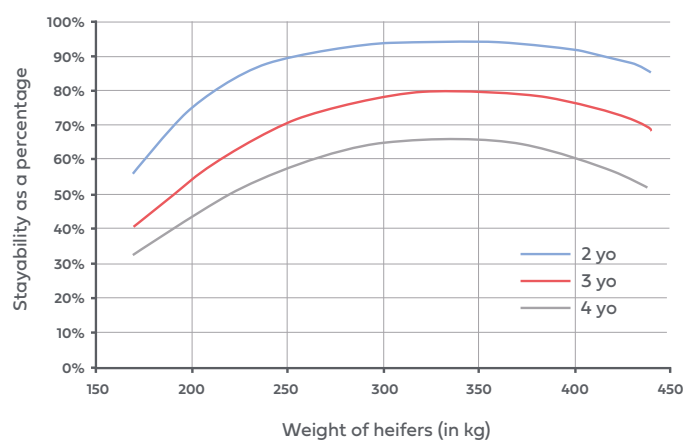


Figure 1

From R.C. Handcock, N. Lopez-Villalobos, L.R. McNaughton, P.J. Back, G.R. Edwards and R.E. Hickson *Journal of Dairy Science*, 103:5, 2020, Body weight of dairy heifers is positively associated with reproduction and stayability <https://www.doi.org/10.3168/jd>

3. For the majority of heifers in NZ, being 'too heavy' is unlikely to be an issue, whereas, being 'too light' is of much greater concern.

Further work showed that the 3 year accumulated production when sorted by breed shows the benefit of Friesian-Jersey crossbred. Crossbred cows had higher yield than straight breed animals. The driver of these results is a combination of average yield per lactation and survival. 15% of animals only milked for one lactation, 19% of animals had two lactations, meaning only 66% of animals completed three lactations.

<https://licnz.com/news/what-crossbreeding-contributes-to-your-herd/>

Fig. 2 Average 3 year accumulated milk solids yield

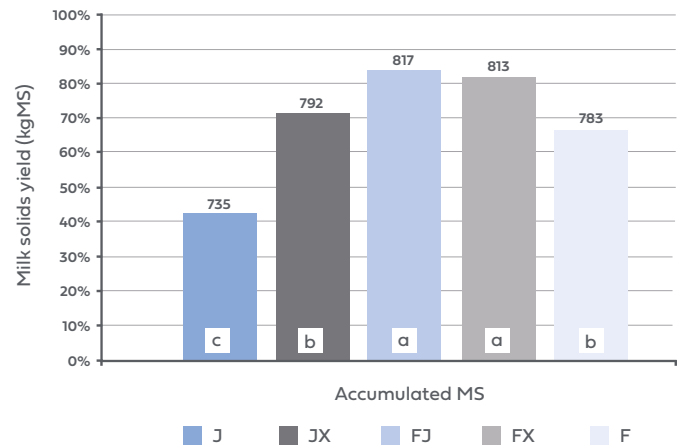


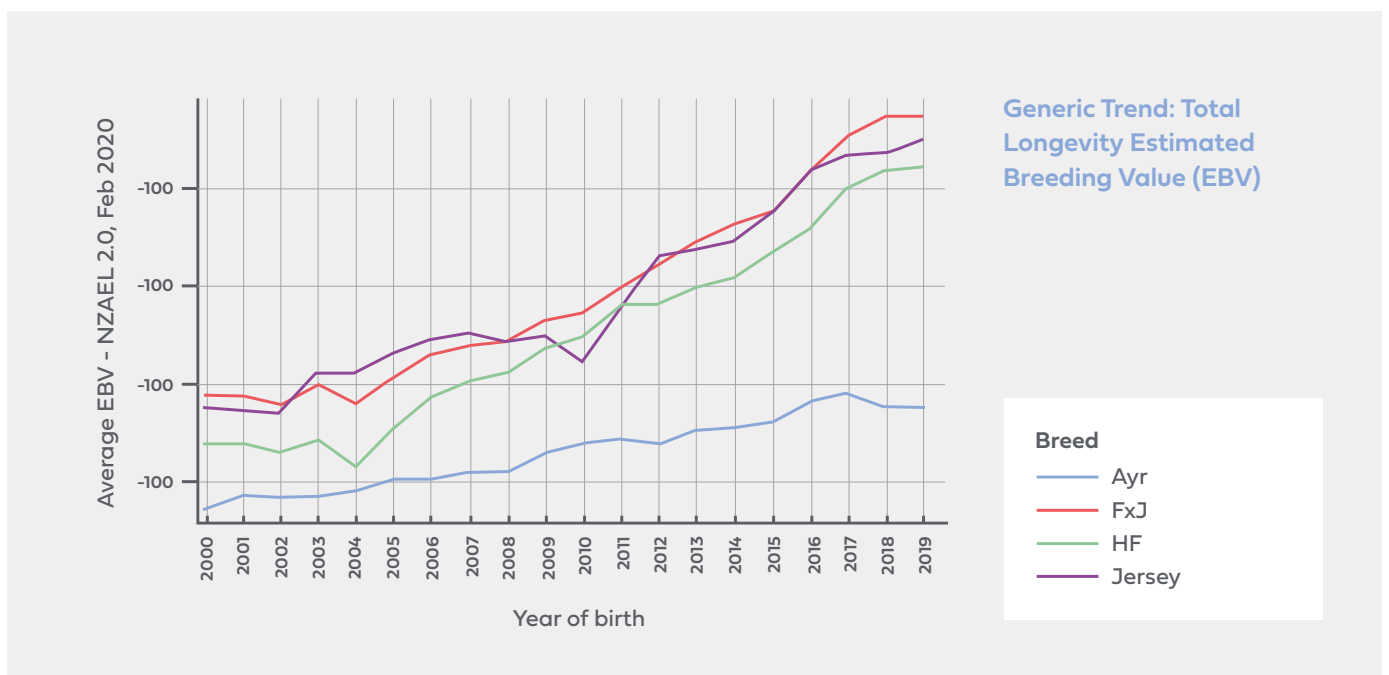
Figure 2 From Hancock RC, Lopez-Villalobos N, McNaughton LR, Back PJ, Edwards GR, Hickson RE. 2019. Positive relationships between body weight of dairy heifers and their first-lactation and accumulated three-parity lactation production. Journal of Dairy Science. 10

Functional survival traits

New Zealand genetic trends for total longevity are steadily increasing, meaning cows, genetically, should be increasingly enduring. See the graph below from NZAEL (February 2020).

Hybrid vigour, though not heritable, also brings significant benefits to functional survival through the boost to traits like reproduction, health and survival.

The advantage from hybrid vigour to NZ Friesian X Jersey first cross cows is estimated to be around 220 days longer herd-life compared to the average of the straight-bred parents.





Action Points

1. Consider using high fertility and longevity sires in your breeding program to help breed for stayability.
2. Give your young stock the best chance by meeting target liveweights, calving them before main herd, actively managing body condition scores, and supporting them in the early years of being in the herd to allow them to reach mature age.
3. The biggest loss of cows on farms is through cows being not in-calf. Have an action plan and targets in place to meet industry targets for reproduction. For targets and best practice, see Dairy Australia's InCalf resources. <https://www.dairyaustralia.com.au/animal-management-and-milk-quality/fertility#.YGUJV68zaUI>
4. Keep records of why cows are leaving your farm and if higher than industry standards then look to improve in those aspects of the farm.



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