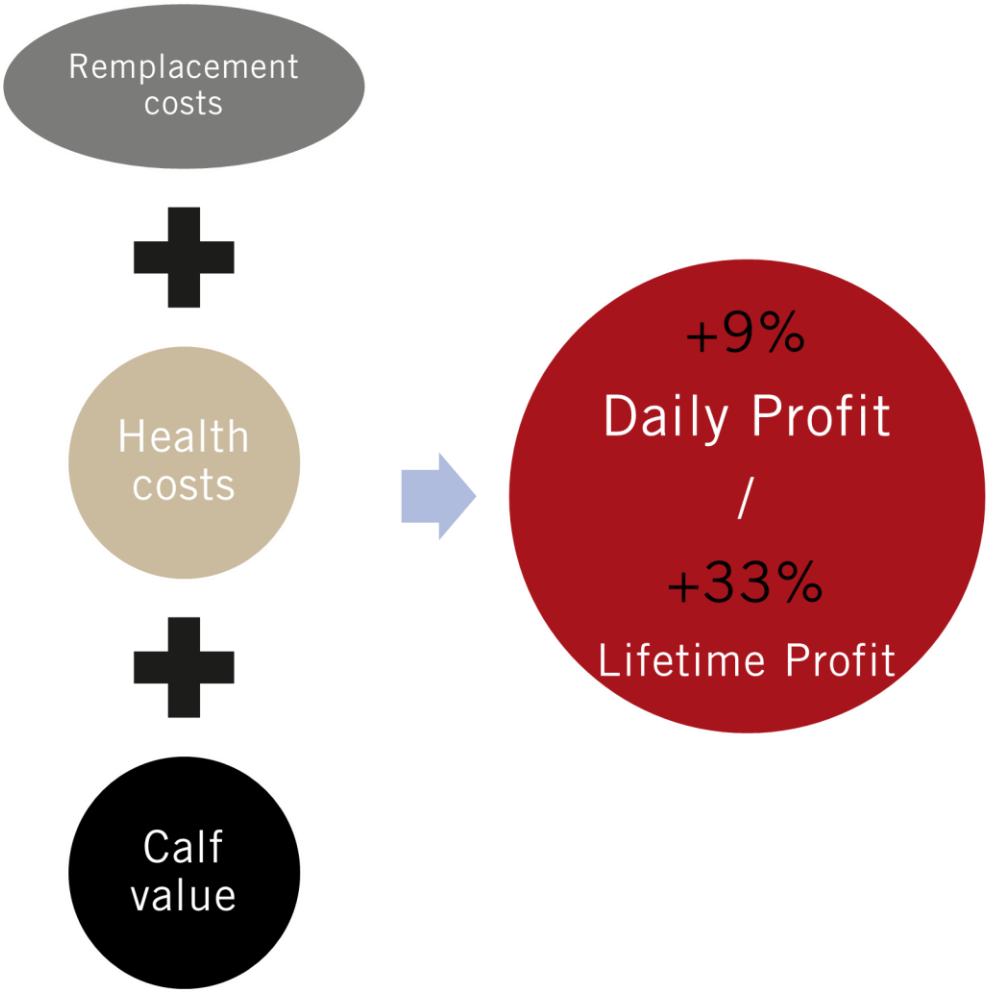
Press release



Context:

This trial which revealed this performance was carried out by the University of Minnesota over a period of 10 years. Against the purebred Holstein (HO), it compared the performance of a two- and three-breed cross, based on the Holstein, Montbéliarde (MO) and Viking Red (VR) breeds. These three breeds were found to be highly complementary, and so they have since been used in the development of a structured, three-way crossbreeding programme and marketed under the ProCROSS brand.

The report's lead author, Dr Amy Hazel, worked with Professor Brad Heins and Professor Les Hansen throughout the trial, enrolling 3,550 Holsteins in 2008, which would be kept in their commercial herds and either be crossed or bred pure. This made it the largest ever trial to assess the benefits of crossbreeding in a commercial situation and through such a highly structured breeding programme.

Crossbreds earn +$0.34 more per day of life

- **Final report is published of a major, 10-year study comparing crossbred and Holstein cattle**
- **Daily profit is 34 cents (25p/0.28€) higher for Holstein x Montbéliarde x Viking Red (now ProCROSS) cattle**
- **The extra profit reflects the crossbreds' -4% reduced costs with only -1% reduced revenue**
- **The higher profit was most influenced by lower health and replacement costs, plus higher calf value**
- **Lifetime daily yield was just -1% less for the ProCROSS, compared with the purebred Holstein**
- **The herd life of the ProCROSS was 147 days (4.8 months) longer than her Holstein herdmates**
- **Lifetime fat plus protein was 346kg more and lifetime profitability was 33% more for the ProCROSS**

The final report of a major study into crossbreeding has now been published in the Journal of Dairy Science. The report concludes that crossbred dairy cattle which combine the Holstein, Montbéliarde and VikingRed breeds, are US$0.34 (25p, 0.28€) more profitable per day of life than the pure Holstein.

The drivers behind the improved profitability were numerous but can be summed up in the -4% reduction in their costs of production, countered by a small reduction in daily income of just -1%. This increased the crossbreds' daily profitability by +9% (+$0.34/+25p/+0.28€).

The report is the third in a series to be published from the 10-year-long study of crossbreeding carried out by the University of Minnesota. A broad range of performance parameters were investigated across thousands of cows in the study, including milk, fat and protein production, lifespan, fertility and a range of health and management traits. The crossbreds' performance has been reported periodically over the past 18 months, but it is only this month that the overarching profitability figure has been published (JDS 104: No 3, 2021).

However, the benefits of the crossbred cattle were observed by participants long before the seven-herd trial reached its conclusions.

In fact, positive reports of the three-way-cross from numerous dairy producers were sufficient to trigger the launch of an international commercial breeding company in 2014 using the three breeds involved. These are now marketed as ProCROSS by VikingGenetics and Coopex Montbéliarde, both of whom supplied genetics for the study.

This ProCROSS breeding programme is gaining a foothold in the UK and around the world because of the complementary nature of the three breeds.

PROCROSS
MONTBELIARDE / HOLSTEIN / VIKINGRED
VIKINGRED / HOLSTEIN / MONTBELIARDE

Dr Amy Hazel, lead author of the JDS report, says: “The breeds used in the trial were very complementary, the Holstein offering production and udder traits; the Montbéliarde bringing fertility, body condition and strength; and the VikingRed featuring calving traits, udder health and fertility. Furthermore, the three breeds are complementary for stature, helping to bring size uniformity and ease of management.”

She added: “To ensure a fair comparison in the study, it was important that we used the best available genetics for each of the sire breeds, including the pure Holstein.”

Heterosis

A further factor in the success of the three-way cross is the phenomenon of heterosis, otherwise known as hybrid vigour. This confers better performance on the progeny of unrelated animals than expected from their parent-average breeding indexes.

“Hybrid vigour is maintained at around 86% in a three-way crossbreeding programme,” she says.

All of these factors were reflected in the performance of the cattle in the study, with improved health, fertility and lifespan all feeding into the reduced costs of production of the ProCROSS cattle.

She says: “The lower replacement cost, lower health treatment cost, and higher calf value were the three most influential income and expense items which led to the higher profitability of the ProCROSS cattle.

“Lifetime production of fat plus protein was higher for the ProCROSS cows than their Holstein herdmates, which was not surprising because of their longer herd life,” she says.

However, lifetime daily yield of fat plus protein (analysed separately from the JDS paper) was 2.537kg/day for the ProCROSS, just -1% lower than the Holstein’s 2.554kg/day.

When their longer herd life (an extra 147 days) and greater lifetime production (an extra 346kg fat plus protein) were considered, the lifetime profitability of the ProCROSS was a colossal +33% higher.

“This metric is an important consideration for herds under expansion,” says Dr Hazel.

“However, the +9% greater daily profit is a more appropriate metric than the +33% greater lifetime profit of the ProCROSS cows for most commercial dairy herds, which typically have a finite capacity of cows,” she says.

A further bonus from the crossbred cattle was something not measured in this particular study but documented in a separate trial.

“Both crossbreds and their Holstein herdmates in each commercial farm were comingled within pens and feed intakes could not be collected for each cow in our trial,” she explains. “However, a separate study at the university from 2019 monitored feed intakes and observed up to a +8% improvement in feed conversion efficiency in ProCROSS cattle, compared with their Holstein herdmates.

“If we apply those results to the feed cost during lactation of cows in our study, we find the increase of daily profit for the ProCROSS cows rises from $0.34 (25p) to $0.66 (48p) compared with their Holstein herdmates,” she says.

“In an era in which we must look carefully at the resources used, as well as the costs of producing any human food, these are important considerations,” she says. “Producing around the same amount of milk, fat and protein with a lower turnover of stock, fewer interventions to maintain health and fertility and potentially less feed is an important advantage in these crossbred cattle.”

ProCROSS - a subsidiary owned by :

For more information:

- ProCROSS Web site: http://procross.info/
- Stéphane Fitamant, **Director of ProCROSS**: s.fitamant@procross.info

Source

A.R. Hazel, B.J. Heins, L.B. Hansen,

"Herd life, lifetime production, and profitability of Viking Red-sired and Montbéliarde-sired crossbred cows compared with their Holstein herdmates,"

Journal of Dairy Science, 2021,

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