

Breeding for 'liveability' has a role to play in successful heifer rearing

# Genetic link to calf survival

Dutch producers are improving survival rates when selecting sires thanks to two calf-focused indices. Are similar tools set to be introduced in the UK to help reduce calf mortality? We spoke to two leading geneticists to find out more.

text **Rachael Porter**

**D**utch figures show that between 6% and 7% of heifer calves die before they reach 12 months of age – a shocking statistic for any country. And a figure made all the more shocking when you add still births to the percentage, which pushes the figure up to as high as 15%. UK calf mortality figures also make for tough reading. Research, carried

out by Volca's Jessica Cooke and Claire Wathes at the Royal Veterinary College, reveals that 8% of male and female calves were born dead or died within the first 24 hours of birth and 3% of live-born heifers died within the first month of life.

Their work, which reported the incidence of losses on 19 commercial dairy farms in the south of England and

monitored a total of 1,100 Holstein-Friesian calves born as part of a seven-year study, was jointly funded by DairyCo and Defra. It also revealed that 14% of live-born heifer calves fail to reach first calving.

## Calf survival

No wonder, then, that geneticists in the Netherlands have developed two calf survival indices. The Dutch calf survival index – a tool to measure the likelihood that a sire's calf will be live from three days to 12 months – was introduced in the Netherlands in the latest August proof run. This complements a calf 'liveability' index that was introduced there 12 years ago. This indicates the likelihood that a calf will be born alive and survive for at least 24 hours.

"This was possible for us due to





Marco Winters: "There's not enough available data to develop a UK index"



Mathijs van Pelt: "Mortality between 12 and 24 months of age is low"

our comprehensive identification and registration system," explains CRV senior researcher Mathijs van Pelt, who works in the organisation's animal evaluation unit.

"We know every movement that every animal makes and it's easy to gather data on calf survivability in relation to their sires." He adds that the data is then corrected for seasonal and husbandry variation.'

### Wide variation

"Heritability is only 1%, so if a producer has a problem with calf mortality then

it's vital that he looks at management first. Breeding is not a panacea, but it will help to increase the probability that a heifer will make it to first calving." Mr van Pelt says that both indices have highlighted quite a wide variation between sires. "The standard deviation for calf survivability up to 12 months old is 2.5%, or four points, and for liveability it's 3%, so a difference between two bulls of eight points is actually quite considerable."

This survivability index is yet to be incorporated into the NVI – the Dutch equivalent of PLI. The birth index that

was introduced in 2012 includes liveability, or still birth, and calving ease so that has been added to the NVI calculation.

"Still birth has the greater weighting. It's economically more damaging to a herd and business than a difficult calving, which will often still result in a live and healthy calf," adds Mr van Pelt. The good news is that if a heifer makes it to 12 months old then she's extremely likely to make it to two years and calve successfully. "Data from Dutch herds shows that mortality between 12 and 24 months is low – around 2%."

### Limited data

But indices similar to those introduced in the Netherlands would be difficult to develop in the UK at the moment, according to Marco Winters, DairyCo breeding+ geneticist. "We have looked at both heifer survival index, the likelihood that she'll reach calving age, and calf liveability or still birth in some detail in the UK, as part of the much wider 'Expanding Indices Project'," he says.

This aimed to widen the selection objectives to include calving ease, udder health and longevity.

"We looked at calf survivability based on the data already collected as part of the calving surveys picked up through milk recording, which just asked if calves were born alive or dead. And some data was added to this using BCMS. The good news was that the project found genetic variation, but unfortunately the amount of data available on individual sires was limited.

"We also looked at BCMS data to see if there was enough there to determine the likelihood of a heifer reaching calving age. Although this showed great promise there just wasn't enough information available. It's not compulsory to include the sire identity when registering a birth with BCMS and that makes things tricky."

Mr Winters says that's a shame: "Calf and heifer survivability are not a huge deal compared to some of the other traits that are included in PLI, but if a producer is going to invest in rearing a heifer they'd feel happier if they knew there was a strong chance she was going to make it to first calving."

For this reason, he urges producers to fill in the sire column when registering calf births.

"Producers could help to progress this index if they give BCMS this information and, ultimately, it's producers who will benefit." |



Breeding tool: Dutch producers can select sires whose daughters are more likely to make it to first calving.