Better off dead?

GENE TALK

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A lamb's ability to survive is due less to genetics than to other things.

A breeder recently rang me to ask for an explanation of why lamb survival eBVs were better for some dead lambs than for some live lambs.

At first glance this doesn't make sense, although the answer is quite simple. Still, it is a damn good question to ask.

So how can a dead lamb have a higher rating for genetic merit in lamb survival than a live lamb?

The answer relates to families and the importance of family information for traits that are lowly heritable – that is, where most variation is due to non-genetic reasons. This is the case for lamb survival, so a lamb's ability to survive is due less to genetics than to other things. Similarly, the fact that a lamb dies is more likely to be non-genetic than genetic.

Looking at SIL figures for a whole lamb crop in a ram breeding flock is the best way to get our head around this. Let's start by just looking at the average survival of sire families (lambs with the same sire in that birth year). Some sires will have higher average survival of their progeny than others. On average, this will mean their progeny have a higher lamb survival eBV (our measure of genetic merit) compared with the averages for lambs born to other sires.

When we look at just live lambs, those that have a sire with higher than average lamb losses will have lower survival eBVs. And if we restrict our search to just dead lambs, those that have a sire with higher than average lamb losses also have lower survival eBVs.

As a consequence, a dead lamb from sire family with higher than "average" lamb survival is likely to have a higher lamb survival eBV than one of the live lambs from a sire family with lower than "average" lamb survival.

Put simply, when we estimate genetic merit, family information "trumps" the animal's own performance for a trait with low heritability like lamb survival.

Lamb survival is one of the hardest traits to get good data on.

This will not affect selection decisions on farm for young stock, or when you buy rams, because you only ever select from among the pool of live animals. We can be reassured that live animals from families with poorer than average lamb survival will be more lowly rated for genetic merit of lamb survival than live animals from families with higher than average lamb survival.

So SIL's lamb survival eBVs are our best measure of genetic merit for lamb survival.

Lamb survival is one of the hardest traits to get good data on. Many SIL breeders have accepted the challenge and are following best practice to do this as well as can be expected under typical farming conditions. Some are even altering their management to ensure they are not masking poor genetic merit for lamb survival by "helping" lambs that would otherwise succumb to adverse conditions. They want to breed robust sheep that will do well when conditions are challenging.

For the regular SIL-ACE genetic evaluation that SIL performs, we assess whether flocks have high lamb survival and do not use data from years where that is the case (more than 93% survival). The reason is that we get poor discrimination for genetic merit of lamb survival when losses are so low. Having low lamb losses means it is hard for a ram buyer to find superior rams for lamb survival, and it is hard for a ram breeder to genetically improve lamb survival.

To find out which flocks have acceptable data on which to base useful measures of genetic merit for lamb survival, go to www.sil.co.nz and use the FlockFinder web tool. Simply select the sheep type you want to buy rams for and include lamb survival in the traits you are interested in.

Remember, family information is key for low heritability traits, and it is the ONLY useful data for lamb survival since you will only ever be selecting among live animals. A SIL lamb survival eBV tells us about average lamb survival of their relatives and is our best estimate of the genetic merit they will pass on.

B+LNZ and SIL are interested in your views. Feel free to tell us your thoughts by sending an email to silhelp@sil.co.nz or leaving a phone message on 0800-silhelp (0800-745-435).

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