

GETTING IT ‘JUST RIGHT’



GENE TALK

Mark Young

Last column I talked about good ideas cropping up in strange places. One good resource is folk tales or children’s stories which usually have a moral to them. One that has entered our language is the idea of a “Goldilocks scale” where you can have too much or too little, the trick being to get it “just right”.

In animal breeding we often select for improvement by applying selection pressure to change a trait from an undesirable level of performance. Our modern selection tools are very powerful and can deliver change easily. However, we shouldn’t confuse change with improvement.

In some ram breeding flocks and bull breeding herds we are beginning to see some traits approach an intermediate optimum, the so-called Goldilocks zone. Examples may include fatness, litter size – in sheep, adult size, or muscularity. It can be argued that for each of these traits in a given farming situation and carcass meat market, you can have too much or too little, there being a zone in the middle that is just right.

Some traits are always good to have more of, such as lamb survival and healthiness or growth rate in the young animal. So you may have some traits in the Goldilocks zone or approaching it, but want to change other traits to get improvement. Think about what you are wanting as genetic improvement and talk to your breeder to target this.

Of course genetics is not the only solution and neither can it solve non-genetic problems. Management, often in the form of feeding, can be used to great effect to modify performance and will often have a greater impact. However, inherent genetic merit is hard to beat as a starting point. About 20-30 years ago everyone was flushing ewes to lift lambing percentages – today some farmers have much improved genotypes that don’t need flushing because of their inherent genetic merit for litter size. This is a good example of “new genetics, new

management” which we have looked at before in this column.

Goldilocks traits present a challenge to applied geneticists. If a trait does not need improving, it is more complicated to define the breeding objective to hold the trait(s) concerned while continuing to improve, through change, other traits. What we have got now is indices for breeding objectives focused on change. As we approach optimums we want to take our foot off the gas pedal for such traits. We need new index systems of combined genetic merit that include traits we want to change and traits we want to hold. Beef + Lamb New Zealand Genetics see this as a key need for our ram and bull breeding industry.

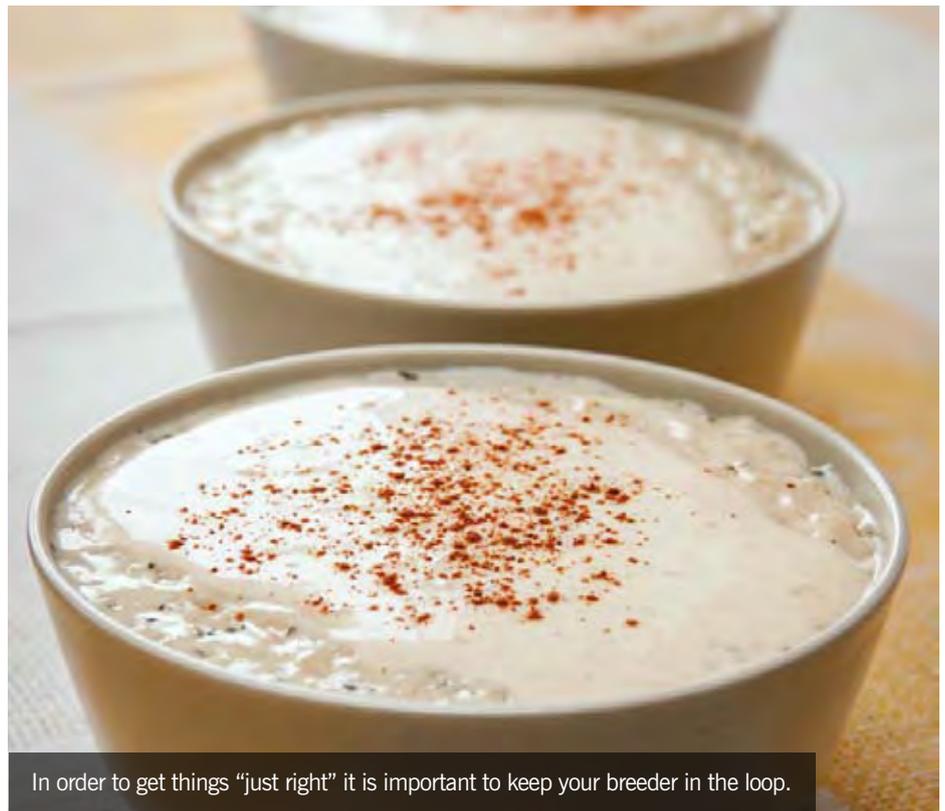
A final point to consider is that different farms will have different breeding objectives, depending on the current level of genetic merit of the flock or herd, the performance this is delivering, and goals for future performance. So a trait may be at the optimum level of genetic merit for one farm, flock or herd, but not for another.

For example, one flock may not want to lift further the genetic merit for the

number of lambs born (NLB) based on the lambing percentages they are getting. But a ram with what looks like a high breeding value (BV) for NLB may be just what is needed by a different ram buyer with lower genetic merit for NLB in their ewe flock. The high NLB BV ram can “jump start” things for the second buyer, since the half of his genetic merit that is passed on will be of great benefit for a flock with lower merit for NLB and the goal of significantly lifting performance for this trait.

Ram and bull breeders in NZ value feedback from their clients on these issues. If you think that a trait is where you want it and no further change is needed, tell your breeder so they can help choose the animals you next buy to do this while continuing to improve other traits. Also, make it clear to your breeder which traits you want further improvement in, through genetic change.

- You can give B+LNZ Genetics or SIL your thoughts on this topic by email to silhelp@sil.co.nz or by leaving a phone message on 0800-silhelp (0800 745 435).



In order to get things “just right” it is important to keep your breeder in the loop.