



## TIPS TO GETTING THE BEST FROM YOUR CROSSBREEDING OR BLENDING PROGRAMS

By Steve Snowdon  
Breeding Advisor / Crossbreeding Consultant

With the rapidly growing interest in crossbreeding I am often asked about topics such as breeding for more consistency, crossbred or blended bulls and genetic gain.

### **Crossbreeding and Blending, what are the differences.**

**Crossbreeding's** goal is to **maximise heterosis** (hybrid vigour) by crossing genetically different breeds.

**Blending** is where the breeding goal is to **infuse desirable genes into** a breed or herd through the use of composite bulls (crossbred bulls) or bulls from either genetically different or similar breeds, where the assumption is made that we will not get a heterosis effect (hybrid vigour) from a mating.

Why assume 0% heterosis effect?

If we take for example the popular Red bull R Ascona, 62% Holstein as our F1 (crossbred) bull, he would obtain 50% of his genes from his sire and 50% from his dam.

However, because he is an F1 bull, he might transmit anywhere between 100% Holstein and 100% Red Breed genes in an individual sperm. This is called gene segregation.

The huge difficulty with the use of crossbred bulls is one never knows what percentage of genes are actually transmitted to any individual animal and, therefore, the level of heterosis.

The goal in any crossbreeding program should be to maximise (make use of large doses of) heterosis (hybrid vigour).

The use of purebred sires in a rotational mating systems results in predictable amounts of breed compositions of crossbred animals and, therefore, levels of heterosis.

For those that decide to **blend**, assuming 0% heterosis is risk management. It gives you the opportunity to ask yourself **why** you are choosing to blend or use a crossbred bull when there is the possibility of not getting any hybrid vigour.

Heterosis has a positive effect on the genetic traits that have a low genetic heritability, giving them a big boost.

If we choose to blend and assume that we will not get that big boost from heterosis, then we need to select bulls that have high genetic ratings for the traits we seek. If we are lucky enough to get some heterosis on top, then that is a bonus..

The decision to either Blend, using crossbred bulls or Crossbreed is a personal choice, if it is to improve the health and fertility of your herd, then you can use either as good genetic gains can be achieved with both, crossbreeding has the advantage of genetically moving forward faster with and will give you more consistency.

### **Tips for Blending**

- Use the highest genetic merit bulls
- Ask about the Holstein and / or Brown Swiss content
- Only use bulls that have high ratings for Fertility and Cell Count, those genetic traits with low heritability.
- Select for calving ease, remember that the calving ability of the Holstein cow is lower than a crossbred, Jersey or Red cow.

- Avoid unproven crossbred or composite bulls, they = high risk
- Seek advice

### **Tips for Crossbreeding**

- Select a minimum of three genetically different breeds that suit your production system
- Ask about the Holstein and / or Brown Swiss content
- Ensure that the bulls have no Holstein content and that they **are** genetically different
- Use the highest genetic merit bulls of each breed
- Select the bulls within the individual breeds that best suit the breed you are crossing over
- Remember that heterosis gives a boost to most traits including size
- Seek expert advice if in doubt