

## Understanding Flight Time EBVs

Temperament can be described as the way that cattle behave when being handled by humans or put in an unusual situation such as being separated from the herd. What we define as poor temperament is a survival trait in the wild – fear of anything unusual and the desire to escape. In domesticated cattle it is exhibited as flightiness. Importantly, temperament is a moderately heritable trait and can be improved by selection.

Flight time is a simple, cost effective and easy to record objective measurement of temperament. Research has shown that in addition to the obvious benefits for ease of handling and management, animals with longer flight time (i.e. superior temperament) also have superior meat tenderness.

### Interpreting Flight Time EBVs

Flight Time EBVs are estimates of genetic differences between animals in temperament. Flight Time EBVs are expressed as differences in the number of seconds taken for an animal to travel approximately 2.0 metres after leaving the crush.

**Higher (i.e. Longer) Flight Time EBVs are more favourable.** That is, higher EBVs indicate a longer time taken to exit the crush and hence better temperament. For example, a bull with an EBV of +0.80 would be expected to on average produce progeny that took 0.7 of a second longer to exit the crush than a bull with an EBV of -0.60.

### Information used to calculate Flight Time EBVs

Flight Time EBVs are calculated from flight time measurements that have been recorded on animals using specialised flight time equipment. Animals are held individually in the crush for a short period and then the head bail opened. Two light beams are then used to objectively measure the time taken for the animal to travel approximately 2.0 metres at the exit of the crush (see picture below). Flight time measurements are normally recorded early in an animal's life, usually at or around weaning.



Exit to  
crush

Two light beams  
measure animal's  
flight time

## Selecting Animals with Flight Time EBVs

Through selection of breeding animals using Flight Time EBVs, beef producers have the ability to produce progeny with longer flight time and hence improved temperament. These animals are also likely to exhibit superior meat tenderness.

While most producers will already be selecting for temperament by culling animals from their breeding herd that exhibit poor temperament, Flight Time EBVs provide several additional advantages. These advantages include:

- ❑ Bloodlines that are producing progeny with very good temperament versus those producing progeny with less acceptable temperament will be identified.
- ❑ Sires and dams which may well be quiet themselves but are producing an unacceptable proportion of flighty calves will be identified more easily and can be culled from the breeding herd.
- ❑ Flight Time EBVs can be used to improve other “related” traits that may be hard to measure directly. For example, research trials have shown that animals with longer flight time (i.e. superior temperament) also have superior meat tenderness.

When selecting animals using Flight Time EBVs, remember:

- ❑ Animals with **higher** Flight Time EBVs are more favourable.
- ❑ Selection for improved temperament (i.e. longer flight time) should be balanced with selection for other economically important traits.
- ❑ Always consider the accuracy of the Flight Time EBVs. It is important to remember that EBVs with low accuracy may change considerably with the addition of more information. Further information on accuracy is contained in the BREEDPLAN tip sheet “Interpreting EBV Accuracy”.
- ❑ If both Flight Time EBVs and Shear Force EBVs are available and the objective of producers is to select animals that will improve meat tenderness, then Shear Force EBVs should be used as the primary selection tool. While flight time measurements will be included in the calculation of both the Flight Time EBVs and Shear Force EBVs, the calculation of the Shear Force EBVs will also include any shear force measurements and gene marker information that is available and consequently the Shear Force EBVs will be a better indication of an animal’s genetics for tenderness than the Flight Time EBVs.

*For more information regarding Flight Time EBVs or the recording of flight time information, please contact staff at BREEDPLAN.*