**LIMOUSIN**

taurus data **LIMOUSIN PERFORMANCE RECORDING**

How Are EBVs Calculated?

EBVs are calculated using information from several sources:

- Measurements from the animal itself
- Measurements from the animal's herd mates (known as 'contemporaries' *)
- Measurements from the animal's relatives and their contemporaries
- The degree to which one trait influences another (known as a 'correlation' *)
- The degree to which each trait is passed on to the next generation (known as 'heritability' *)

* Terms explained below

Performance Records

Pedigree Info.

Trait Heritabilities

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EBVs

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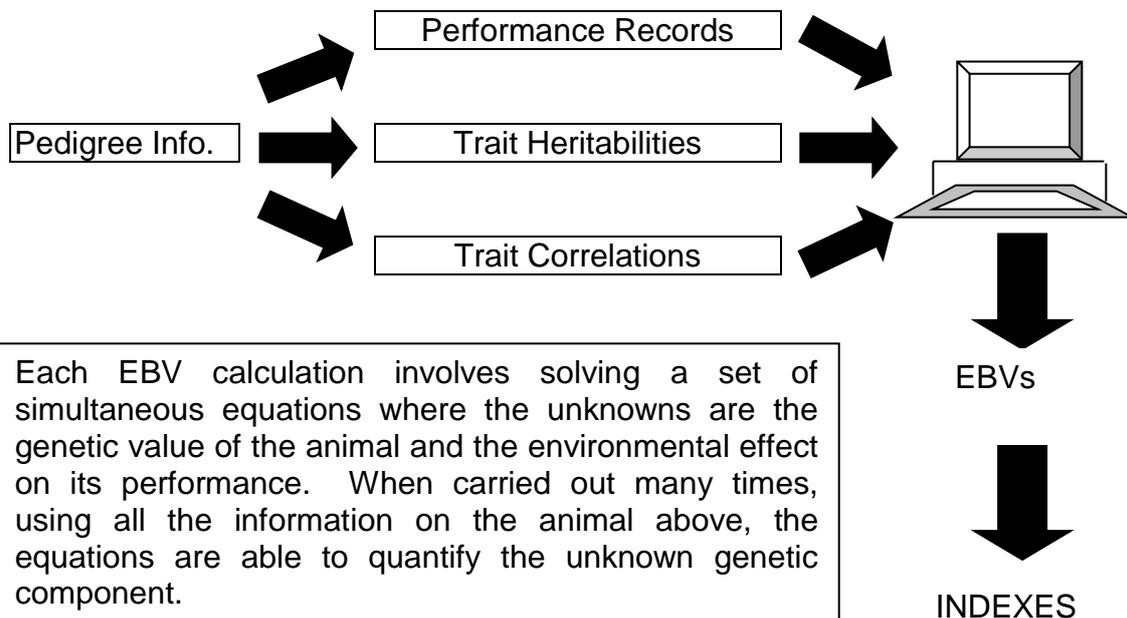
Each EBV calculation involves solving a set of simultaneous equations where the unknowns are the genetic value of the animal and the environmental effect on its performance. When carried out many times, using all the information on the animal above, the equations are able to quantify the unknown genetic component.

The end result is the EBV and over time, as more pedigree and performance data is added, the solution to the equations becomes more accurate as the *true* breeding value of the animal is approached.

When using EBVs it is important to remember that although they can be compared between herds, they can not be compared between breeds.

Performance Records collected from herds include the following:

Calving Performance	• Gestation Length (from AI information) • Birth Weight • Calving Ease Score

Growth & Carcase	• Calf Weights recorded quarterly until 17 months of age • Muscle & Backfat Scanning measurements

Additional measurements	• Scrotal Circumference measurements (at one year old) • Docility score (at around one year old)

Heritabilities and Correlations

Heritability

This is a term used to describe the strength with which traits are inherited and it varies depending on the trait in question. Generally:

- Traits associated with reproduction and survival have low heritabilities
- Milk production and early body size have medium heritabilities
- Later growth and carcase traits (i.e. fat and muscle) have relatively high heritabilities

When something is known of the performance of one or both parents, then the trait's heritability can be used to help predict how the offspring will perform and BLUP uses this 'knowledge' to enhance the accuracy of its EBV calculations.

Correlations

This term describes the direction and strength of the association between two traits. For example, some traits are highly positively correlated, such as 200-Day Growth and 400-Day Growth, whilst others are highly negatively correlated, such as 400-Day Growth and Calving Ease.

When something is known of one trait but perhaps not another, a prediction can be made based on what is known about the correlation between them. This again enhances the accuracy of the EBV in question and helps deal with situations where records for a trait are limited or unavailable.