



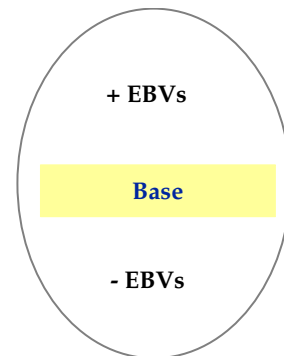
EBVs can only be compared from the same genetic evaluation

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EBVs are relative values

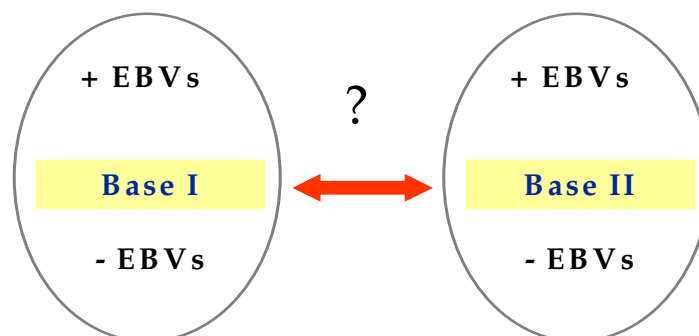
Genetic evaluation systems like PIGBLUP use information on the performance of pigs along with environmental and management factors to derive Estimated Breeding Values (EBVs) for each animal. In contrast to the observed performance of an animal, **EBVs are not expressed in absolute values but are expressed as a difference from a base value.** This base often consists of the oldest animals included in the genetic evaluation but any group of animals could be set to be the base.

Because EBVs are expressed relative to a base value they can be negative or positive. Whether a positive EBV or a negative EBV is preferable depends on the trait. For example, selection emphasis focuses on increasing growth rate and reducing backfat. Therefore, higher EBVs for growth rate and lower EBVs for backfat are better.



Only EBVs from the same genetic evaluation can be compared

The performance of pigs differs between herds, which may be due to different management practice and/or [different](#) genetics. However, within-herd genetic evaluations do not provide any information about whether differences between herds are due to differences in the genetic make up of animals or differences in the environment (management factors).

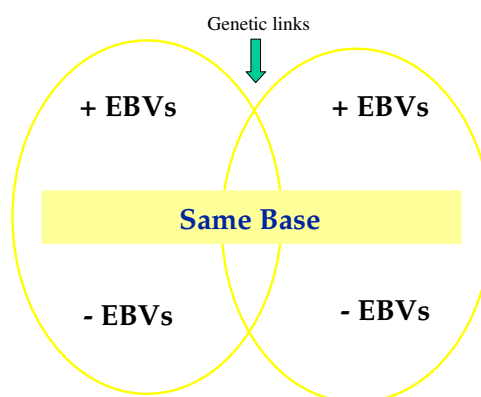


Within-herd genetic evaluations allow ranking of pigs within each herd. However, EBVs derived from separate genetic evaluations from different herds cannot be compared because they are expressed in relation to the base of each genetic evaluation. In contrast, an across-herd evaluation combines data from different herds and EBVs are expressed in relation to the same base. Genetic links between herds are required for separating management effects of different herds from genetic effects.

Please note, EBVs may also change when more data are added. Changes in EBVs may be larger for animals that have less information (lower accuracy) available.

Across-herd genetic evaluations

Breeders generate genetic links between herds by using AI boars from other herds and recording their progeny across herds. These genetic links between herds allow separation of the management effect of each herd from the genetic effects.



Performance records from each herd are analysed jointly in an across-herd genetic evaluation and EBVs of pigs included in the analysis are expressed relative to the same genetic base. Since EBVs are expressed in relation to the same genetic base, EBVs can be compared across all herds.

The National Pig Improvement Program provides EBVs across herds

The National Pig Improvement Program (NPIP) provides across-herd EBVs for growth rate, backfat and number of piglets born alive. The three breeds analysed are Large White, Landrace and Duroc. The NPIP EBVs were expressed relative to the base year of 1991. In 2005, the base year has been changed to 1995. Information about EBVs is shown on the web page of the NPIP at <http://npip.une.edu.au>.

EBVs – important points to remember:

- EBVs are relative values and are expressed as a difference from a base value
- EBVs can only be compared from the same genetic evaluation
- The National Pig Improvement Program provides EBVs across herds

