

Beef carcass traits



Carcass traits

Estimated Breeding Values (EBVs) are now available to beef producers for carcass traits derived from abattoir data.

Beef carcass traits project

The project brought together data derived from the British Cattle Movement Service (BCMS), abattoirs and third parties, including breed societies, to produce EBVs for economically important traits.

This combined dataset contains over seven million carcass records representing around 30 per cent of the national slaughter population.

Assessing genetic merit

The founding principle of all genetic analyses is that animals that have been reared together in the same environment are given the same opportunity to express their genetic potential and can, therefore, be compared.

Once this comparison of animals reared in the same 'contemporary group' has been undertaken, the analysis uses genetic linkage between these groups to create a more accurate assessment of performance across the population.

The analysis of the carcass traits dataset is undertaken on a multi-breed basis, taking into account breed type and hybrid vigour (heterosis) as well as sex, age, farm (birth and rearing), year and season.

While millions of records are available to the evaluation, data has to be extensively cleaned prior to analysis to remove any records that could create bias within the dataset.

Recording sire details

The main limiting factor within the analysis is the lack of recording of sire identities on BCMS passports. While the proportion of records with sire recorded has increased in recent years, only around 40 per cent of passports currently have sire details recorded.



Available EBVs

- **Carcase weight** – predicts carcass weight at a given slaughter age
- **Carcass conformation** – predicts carcass conformation at a given slaughter age
- **Carcass fat class** – indicates carcass fat class at a given slaughter age
- **Days to slaughter** – predicts days to slaughter at a given weight and fat class
- **Average daily carcass gain (ADCG)** – an indicator of the daily gain in the carcass

Genetic influences

EBVs are produced by taking into account the degree to which traits are passed between generations (heritability) and also how traits relate to each other at a genetic level (genetic correlations).

The carcass traits project has shown that estimates for carcass traits are highly heritable and, therefore, extremely suitable for inclusion in genetic evaluation programmes.

Once traits have been suitably adjusted, various genetic relationships can be observed.

Cattle that are genetically heavier at a set age tend to have better conformation and are leaner. The EBV for days to slaughter tends not to be significantly related to carcass weight, largely because the EBV is already adjusted for carcass weight.

Table 1. Heritability of different traits

	Heritability
Carcass weight	0.40
Carcass conformation	0.41
Carcass fat class	0.45
Days to slaughter	0.63

Summary

Since the project was completed, EBVs for carcass traits have been produced for over three million cattle.

Comparing the EBVs across different breeds shows that, while there are differences between breeds, in general there is much more variation within a breed and considerable scope for within-breed improvement.

Now that EBVs are available for traits of direct interest to the commercial sector, clear market signals should stimulate commercial producers to source bulls with favourable EBVs for carcass traits.

Further information

For information on interpreting the new carcass trait EBVs, see the Interpreting beef carcass traits factsheet available at beefandlamb.ahdb.org.uk/returns

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