

Performance Recording Sheep



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Hybu Cig Cymru / Meat Promotion Wales
Tŷ Rheidol, Parc Merlin, Glanyrafon Industrial Estate
Llanbadarn Fawr, SY23 3FF
Tel: 01970 625050 Fax: 01970 615148
Email: info@hccmpw.org.uk

www.hccmpw.org.uk

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What are the benefits of recording my flock?

Pedigree breeders and ram buyers can benefit from an objective way of assessing the genetic potential of rams. The best way to do this is by performance recording.

Performance recording enables breeders:

1. **To market breeding stock** more effectively, because:

- Buyers can purchase rams on performance
- Rams can be sold on the merit of their EBVs
- Rams can be compared to those bred in other flocks of the same breed
- Better performing rams are produced for sale

2. To make **breeding decisions**, using Estimated Breeding Values (EBVs) to assist with the:

- Identification of the best performing ram lambs to be retained as stock sires
- Mating decisions within the breeding flock
- Selection of female replacements

To make more money from pedigree sheep production.



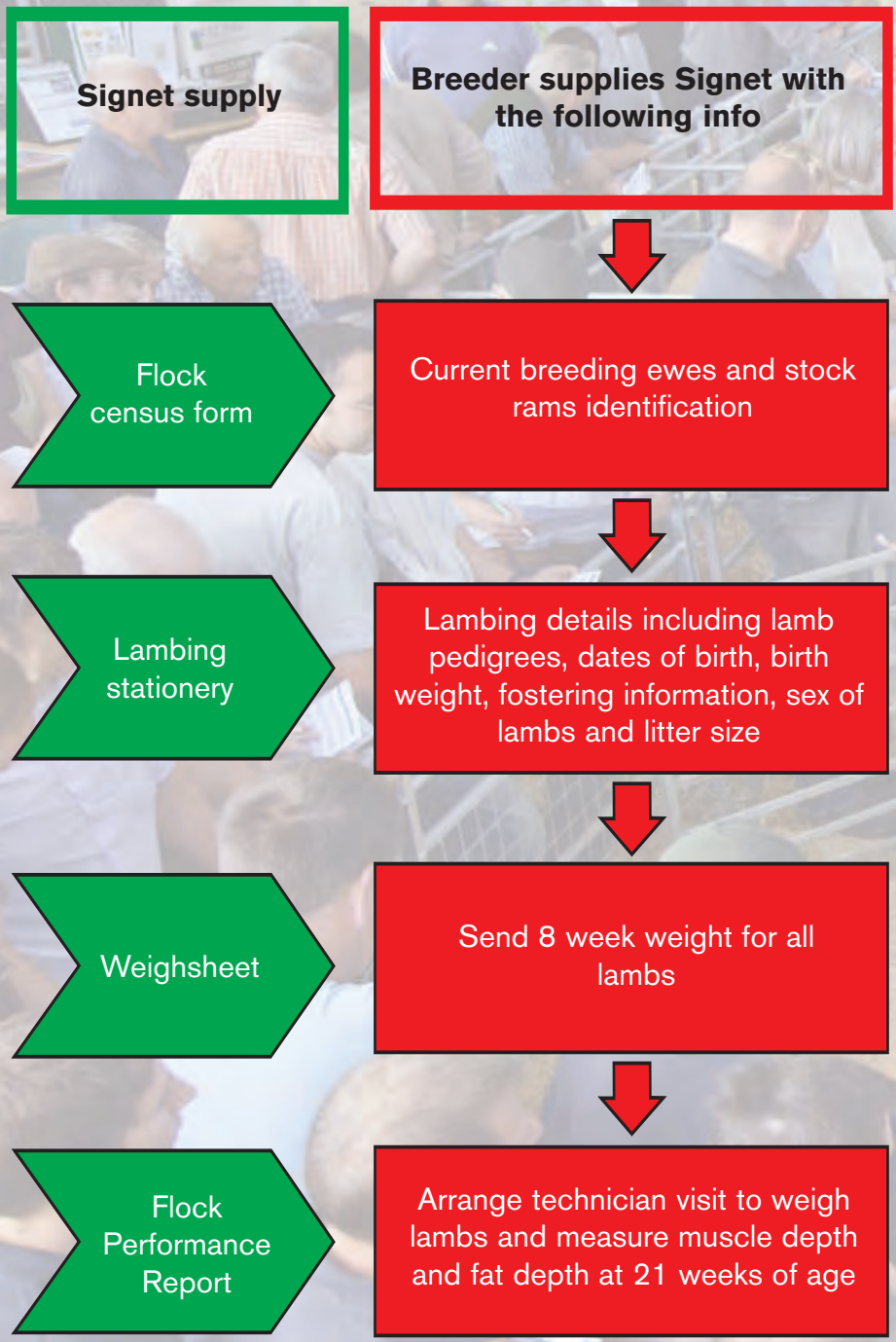
How do I record my flock?

Sheepbreeder is a service operating from Signet Headquarters at Stoneleigh, Warwickshire. The service relies on accurate and timely on-farm performance recording. To help you with this task Signet will send out forms in a logical sequence throughout the year.

If you opt to scan your flock you will receive a pre-arranged visit from a **Signet-approved technician** when lambs are around 21 weeks old. Lambs will be weighed and measured for muscle and fat depths using an ultrasound scanner.

New members can start recording immediately by following these simple steps:

1. Contact Signet to receive a registration form (Tel: 0247 647 8829)
2. Fill in a contract based on their flock size
3. Work with Signet to get the pedigrees of their breeding ewes established on the Sheepbreeder database. (A Breed Society can sometimes supply this information)
4. Forward details relating to lamb crop to Signet or request lambing stationery to be sent out
5. If required, register an intention to use the scanning service



Estimated Breeding Values (EBVs)

The **pedigree and performance data** collected is analysed to calculate how much of each animal's performance is due to its breeding merit and how much is due to the environment in which it has been raised. This assessment of breeding potential is expressed in units known as Estimated Breeding Values, or EBVs.

EBVs provide a measure of the breeding potential of an animal for a specific trait, they are expressed in the same units as the recorded trait (e.g. kg for eight week weight).

A recorded ram will only pass on half of its genes to its lambs so its EBVs must be halved in order to estimate the average genetic worth of its progeny.

EBVs are easy to interpret, for example:

A ram with an EBV of +6 for scan weight is estimated to produce progeny who, on average, will be 3kg heavier at 20/21 weeks than animals produced by a ram with an EBV of 0.



Table 1. Standard Performance Traits

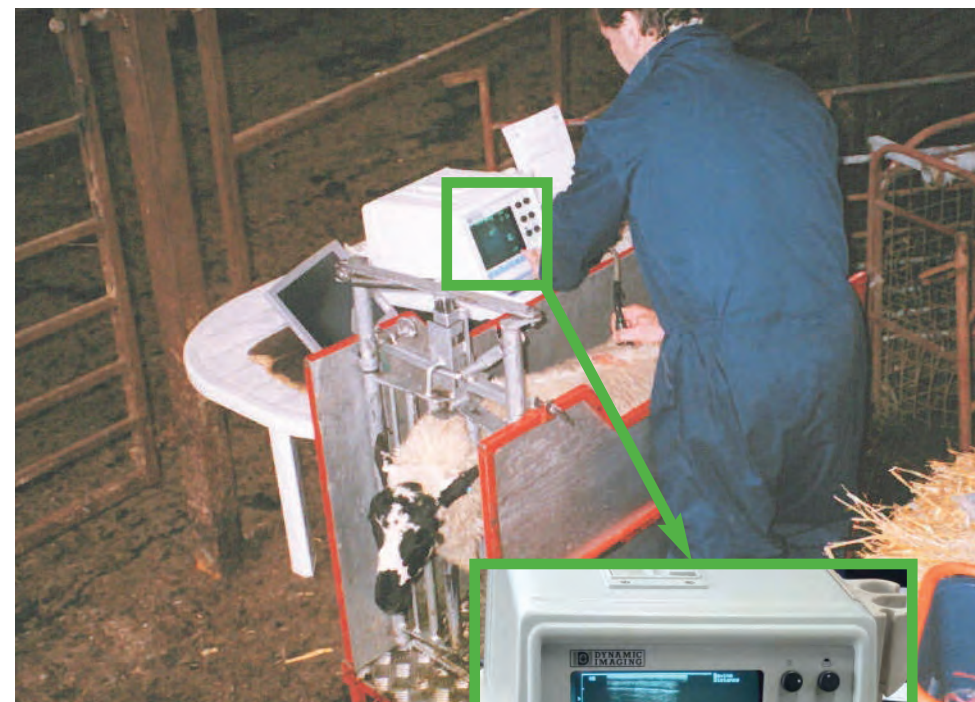
EBV	Trait	Raw Data
Litter Size	Prolificacy	This trait is defined as the total number of lambs born alive and dead when pregnancy reaches full term.
Maternal Ability (kg)	Maternal ability of ewe, relates to milk production	The component of a lamb's growth to eight weeks of age that is influenced by the ewes breeding potential for milk production.
Eight Week Weight (kg)	Growth rate to 8 weeks of age	Weight at 8 weeks of age. To achieve an adjusted 8-week weight lambs must be weighed between 6 and 12 weeks of age.
Scan Weight (kg)	Growth rate to 21 weeks of age	Weight at scanning time, when lambs are 21 weeks of age.
Muscle Depth (mm)	Carcase muscling	Measured at 21 weeks of age by a Signet-approved technician. Ultrasound measurements at the loin muscle.
Fat Depth (mm)	Leanness	Measured at 21 weeks of age by a Signet-approved technician. Three ultrasound measurements taken on the back.
Mature size (kg)	Ewe efficiency	Ewe liveweight at first mating.

Table 2. New Performance Traits

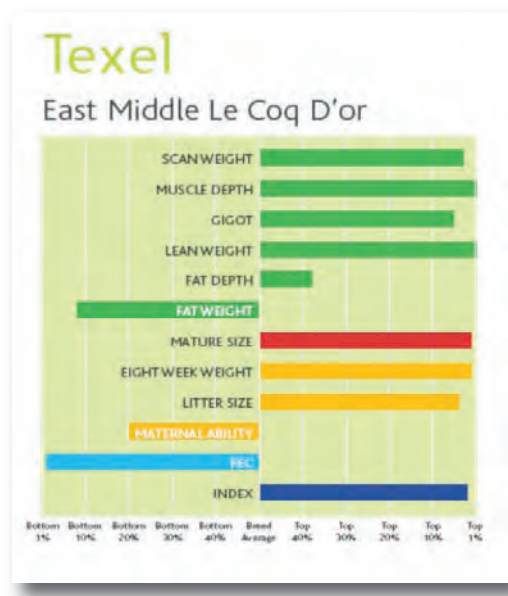
EBV	Trait	Raw Data
Carcase Lean Weight (kg)	Muscle yield	Quantity of muscle in the carcass assessed using Computed Tomography (CT) image analysis of breeding stock at 21 weeks of age.
Carcase Fat Weight (kg)	Leanness	Quantity of fat in the carcass assessed using Computed Tomography (CT) image analysis of breeding stock at 21 weeks of age.
Muscularity (mm)	Carcass shape	Thickness of the muscle in the gigot assessed using Computed Tomography (CT) standardised to a fixed femur length.
Faecal Egg Count (FEC)	Worm resistance	Faecal samples are taken from lambs at 21 weeks of age and submitted for laboratory analysis to measure the worm egg count in the sample.

Ultrasound scanning for fat and muscle depth is a valuable tool used in Sheepbreeder flocks to help predict carcass quality. It is carried out by Signet-approved technicians, when the lambs are around 21 weeks of age.

The scanning technique involves parting the wool over the loin and placing the ultrasound scanner head on the animals skin. A picture is taken and measurements of fat and muscle depths are downloaded into a computer.



Ultrasound scanning Machine showing frozen image of muscle and fat across the loin.



To assist in marketing animals and their EBVs, sale cards can be provided to breeders.

Right is an example of a sale card.

Interpreting Sheepbreeder Reports

Breeding reports are distributed to breeders at set times during the year. Each report updates and supersedes the last.

To accompany the flock report, a summary report is published after the main run to highlight the leading stock rams and ram lambs within the breed. You will note that where animals are not scanned, EBVs are predicted from the performance of their relatives and known correlations between traits.

Suggested action to be taken by breeders on receipt of their final report

1. Check that the information contained in the report is correct and inform the bureau of any amendments.
2. Review your genetic progress over time and work out if you are meeting your breeding objectives. Ensure that the genetic merit of lambs in your flock is increasing year on year and identify traits that need to be improved.
3. In conjunction with physical assessments, identify the ram lambs and ewe lambs with high genetic merit that are to be retained and those with low genetic merit that are to be sold. Use an up to date Breed Benchmark to assist with this task.
4. Select shearing ewes and stock ewes to be retained for breeding in the coming year based on their genetic merit and breed characteristics.
5. Identify potential stock sires from those that have performed well in previous years and homebred ram lambs with good figures. When planning to purchase a new stock ram always check its current EBVs.

Signet contact details:

Signet Breeding Services

Tel: 0247 647 8829

Fax: 0247 647 8902

e-mail: signet@eblex.org.uk

www.signetfbc.co.uk

