

HOW TO PERFORMANCE RECORD YOUR FLOCK WITH SIGNET



WHY RECORD WITH SIGNET

Performance records provide ram breeders and commercial ram buyers with the best way to assess the genetic potential of breeding rams.

Performance recording adds value to the sheep enterprise in two ways.

1. RAM SALES

There are two direct ways that performance records can add value to ram sales:

- ▶ Achieving higher sale values
- ▶ Selling more rams, with better clearance rates

As a marketing tool, Signet recording helps to raise your flock profile and our online services provide access to charts and catalogues to promote your stock.

2. ENHANCING FLOCK PRODUCTIVITY

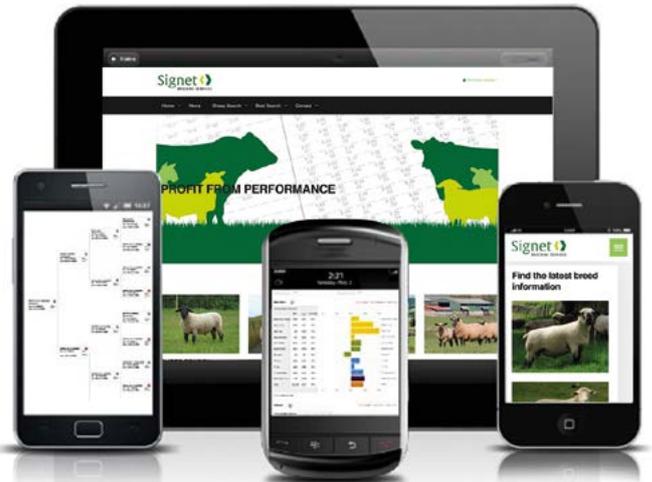
As a Signet client, you will have access to detailed breeding records and inbreeding software to support you to breed better sheep for a wide variety of traits.

By retaining the best ram lambs for breeding and using Estimated Breeding values (EBVs) as an aid in the selection of ewe lamb replacements, you can lift both flock productivity and profitability.

In an era where livestock producers use genetic information to make informed decisions, it is important not to be left behind.

Signet data gives ram buyers the confidence to invest in the best. Whether you sell from home, auction or online, clearly it pays to record.

Why wait? Join Signet today and start unlocking the potential of your flock.



NEW SERVICES FOR SIGNET

Signet has developed a number of online data-entry and reporting services over the last 12 months, alongside breeding tools to assess inbreeding and support ram marketing, but it is within our genetic evaluations that the biggest changes arise.

Through ongoing investment in research and advances in computing power, Signet is now able to deliver EBVs to the industry as part of a series of three multi-breed evaluations.

BENEFITS OF THE NEW APPROACH

A number of enhancements have been delivered through the new evaluations; including:

- ▶ The ability to produce more regular, monthly BLUP runs
- ▶ A more commercially focused set of (EBVs), including:
 - New EBVs for maternal traits, such as ewe longevity and lamb survival
 - Updating EBVs for parasite resistance
 - New EBVs derived from CT scanning images
- ▶ The rebasing of EBVs to aid their interpretation by commercial farmers
- ▶ A more accurate assessment of crossbred animals, providing a greater ability to compare rams regardless of breed
- ▶ A fairer and more accurate assessment of new, unknown breeding lines
- ▶ Over time, the development of new breeding values derived from abattoir data and on-farm assessments of ewe weight and body condition score

In these analyses, pure breeds and their crossbred progeny can be evaluated together in a single evaluation, with results for each breed reported back individually. This approach mirrors that used in sheep evaluations in New Zealand and Australia, where multi-breed analyses are routinely undertaken.

How do I sign up?

It's easy to get started...

1. Contact the Signet bureau for a starter pack and contract:
T: 0247 647 8829 E: signet@ahdb.org.uk
2. Return a signed contract to Signet.
3. Provide details of the breeding ewes and rams in your flock, either on paper or electronically. For some breeds, animal records can be accessed directly from the breed society.
4. Once we set up your account, head to **signetdata.com** and you are good to go.

National Terminal Sire Evaluation

For breeds like Beltex, Charollais, Dorset, Hampshire Down, Meatline and Suffolk



National Hill Sheep Evaluation

For breeds like Beulah, Cheviot, Scottish Blackface, Swaledale and Welsh Mountain



National Lowland Ewe Evaluation (due 2022)

For breeds like Lley, Romney, Roussin, Easycare, Exlana and Bluefaced Leicester



HOW DO I SUBMIT DATA?

There are two main ways to record your flock with Signet:

- ▶ Online data entry into the Signet database – www.signetdata.com
- ▶ Farm software outputs, submitting electronic files generated by farm software

Signet also provides a data-entry service to breeders wishing to provide paper records. The cost to the client is slightly higher, but if this service is of interest, please contact us directly.

ONLINE DATA ENTRY

For small flocks, the easiest way to record with Signet is to log in to the database and enter your data directly.

Breeders can enter:

- ▶ Full lambing records – including fostering and embryo recipient details
- ▶ Weight records for lambs and ewes
- ▶ Census data
- ▶ Animal names

Signet's user-friendly screens make data entry simple. For clients requiring assistance, a series of step-by-step tutorials are available at signetdata.com/technical/webinar-and-video

FARM SOFTWARE OUTPUTS

Many farm software companies, such as Border Software and Shearwell, have written output files specifically designed for Signet clients. Files can easily be created and sent to us via email.

The most important things to remember when providing electronic data are to:

- ▶ Check that the order and format of the columns is that required for uploading into the database. If you are in doubt, please contact Signet for the latest file specification
- ▶ Check your data before sending it. Ensure your files contain the right number of sheep records and do a sense check, by looking at the highest and lowest values in the file

When do I supply data?

The good news for Signet clients is that data is now analysed every month – so clients rarely wait more than a few weeks to get their records updated. A schedule of publication dates is published online.

Please note that clients wishing to ultrasound-scan their lambs need to have submitted lambing records before the technician arrives on farm.



WHAT DATA DO I RECORD?

Accurate and timely data collection is at the heart of any recording system. Signet requires data at several points during the year. Contact us if you have a query about our recording protocol.

AT MATING

Before mating, clients have the opportunity to collect weights for their shearling and older ewes. This data is important in a maternal breeding programme. Signet does not require any additional information at mating time, but it is important that ewes are single-sire mated. Note down if any rams are changed over during the mating period.

AT LAMBING

We record the identity (flock book number and UK ministry tag), sire, dam, date of birth, birth type and sex of every lamb. Dead lambs should be recorded too.

Clients are encouraged to record birth weight, though this will not be practical on extensive systems. Likewise, breeders can provide lambing ease scores using a 1–5 scale (1 = unassisted, 2 = slight assistance, 3 = severe assistance, 4 = non-surgical vet assistance, 5 = caesarean).

Fostering details are important, whether lambs are artificially reared or fostered to a known or unknown ewe. Flocks using AI should record insemination date and flocks using embryo transfer must record recipient details.

EIGHT WEEKS POST-LAMBING

Every lamb should be weighed between 42–84 days to get an adjusted eight-week weight. If lambs are managed in different groups, this should be recorded. If the lambing period is spread out, the flock can be weighed over different dates.



AT ULTRASOUND SCANNING

Ultrasound scanning helps to predict carcass quality. Recorded flocks previously scanned lambs at around 21 weeks of age, but in recent years our focus has shifted to ensuring lambs are the right weight at scanning – ideally around 40 kg.

Unlike growth rate, it isn't easy to identify sheep with superior muscling. Ultrasound scanning enables breeders to select animals with superior loins and avoid those with high levels of carcass fat. Research shows that selective breeding for muscle depth will enhance meat yield.

The scanning technique involves parting the wool and applying liquid paraffin at the third lumbar vertebra. The transducer is adjusted until a clear image is seen. A single measurement is taken of muscle depth at the deepest point and three measures of fat depth are taken. Scanning should take place under cover, with access to mains electricity. Differences in management group should be recorded.

As with any raw data, muscle and fat depth measurements are affected by non-genetic factors, such as age and feeding. Breeders should always wait to use the EBVs produced from this data to select breeding stock, rather than relying on the raw data alone.

END OF THE YEAR

Send Signet details of any new rams and ewes that have been purchased. If they are non-recorded individuals, then please provide details of their sire, dam and date of birth.

Breeders are asked to complete a census each year, informing Signet which animals have been sold or died. Clients can enter this information online, recording fating codes if they wish. If any sheep have been re-tagged during the year they need to supply this information to Signet directly.

Breeders wishing to name their breeding stock can also do this online.



OPTIONAL DATA-RECORDING SERVICES

TERMINAL SIRE BREEDS – CT SCANNING

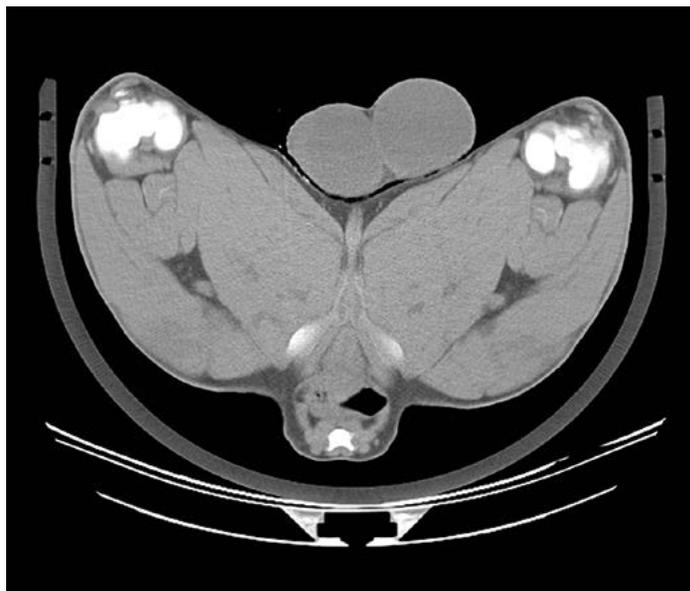
CT scanning is an optional service used by some terminal sire breeders to identify outstanding animals within the breed.

Computed tomography (CT) produces images of body cross-sections, using low-dose X-rays. Images allow detailed body measurements to be taken in a welfare-friendly way.

For sheep, three cross-sectional X-ray pictures are taken of the gigot, loin and chest/shoulder. Computer-image analysis identifies areas of fat, muscle and bone. From these measurements, carcass composition can be predicted with 97–98% accuracy.

In recent years, SRUC's CT services have expanded to generate breeding values for spine length, vertebrae number and intramuscular fat percentage.

CT scanning is normally only undertaken on ram lambs, with at least five lambs being assessed per flock. For more information, contact the SRUC CT unit directly at CTUnit@sruc.ac.uk



MATERNAL BREEDS – FEC AND IGA

Internal parasite infections can reduce growth in young lambs by as much as 25% without clinical signs of infection. Lambs raise an immune response to fight worm infections and some are genetically better at this than others.

Breeders of Lleyn, Exlana and Romney sheep use independent laboratories to routinely collect measurements associated with parasite resistance, including faecal egg count (FEC) and IgA (an immunological response). Measurements are analysed by Signet to create breeding values.



ABATTOIR DATA, EWE WEIGHTS AND EWE BODY CONDITION SCORE

Through the utilisation of EID and on-farm software, an increasing number of breeders have expressed interest in recording abattoir data relating to their lambs, as well as the weight and body condition score of adult ewes.

This data is used for research and the creation of new breeding values. Clients are welcome to supply this information in electronic files to an agreed format.



INTERPRETING BREEDING VALUES

EBVs are expressed in the same units as the recorded trait (e.g. kg for eight-week weight) and they relate to a common baseline, which is the average breeding value of lambs born in a specific year.

A ram will only pass on half its genes to its lambs, so EBVs must be halved to estimate the average genetic worth of a ram's progeny.

Signet produces over 30 different breeding values, but the most common ones are shown in the table.

EBVs are easy to interpret. For example:

A ram with an EBV of +6 for scan weight is estimated to have the genetic potential to be 6 kg heavier at 21 weeks of age compared with a ram with a scan weight EBV of 0.

FINDING BREEDING VALUES ONLINE

Signet produces breeding values from over 5 million sheep records.

All of our information can be found at signetdata.com, where you can search for individual breeders, sheep or groups of sheep to meet a specific breeding objective.

PRODUCING BREEDING REPORTS

All Signet reports can be generated online either as PDFs, in a format clients may wish to print, or as CSV files that they can sort and filter in Excel.

A number of specialist flock reports are available that show the lambing history of ewes, the breeding values for stock rams used over many years, flock genetic trends and family trees.

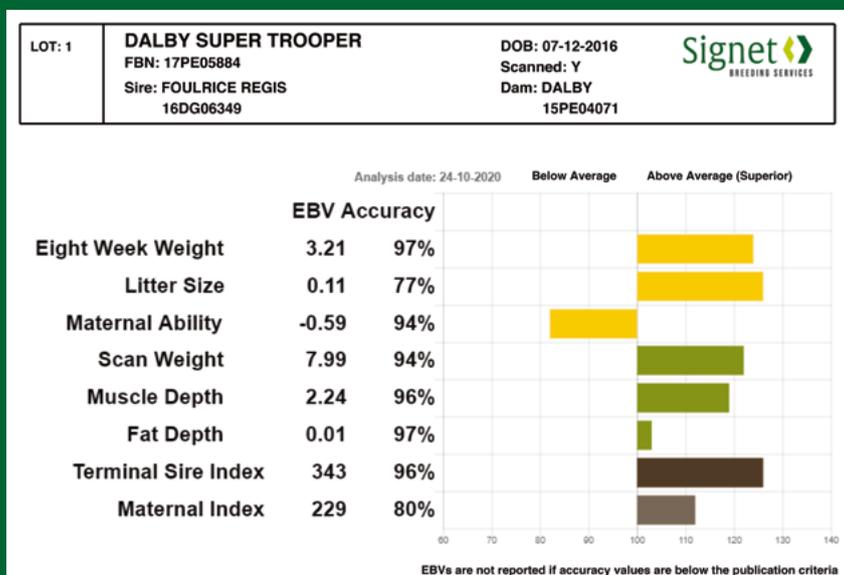
Reports showing the leading ram lambs and stock rams in the breed are widely available.

MAKE YOUR BREEDING STOCK STAND OUT

There are many ways to display breeding information. The two most important include sale charts and sale catalogues, both of which can be created and published from the Signet website.



Estimated breeding value	Impact of selection
Eight-week weight and scan weight	Faster-growing lambs, but also an indirect increase in ewe weight
Muscle depth	An increase in lamb muscularity and the yield of lean meat in the carcase
Fat depth	Reducing fat-depth EBVs will result in less fat in the carcase
Mature size	Choosing animals with lower breeding values will limit increases in ewe mature size
Litter size	An increase in the prolificacy of the ewes retained in the flock
Maternal ability	Ewes whose progeny have superior growth rates due to their milk production and maternal care



Lot: 1 17PE05884 - DALBY SUPER TROOPER - UK 0 201156 05884									
B:R 2:1	DoB: 07-12-2016	ET: Y	Sex: M						
8 Week Weight: Y	Ultrasound Scan: Y	CT Scan: Y							
Sire: FOULRICE REGIS - 16DG06349 G.Sire: 14DG04650		G.Dam: 14DG04613							
Dam: DALBY - 15PE04071 G.Sire: 13PE02353		G.Dam: 13PE02365							
Analysis Date: 24-10-2020									
	8 Week Weight EBV	Litter Size EBV	Maternal Ability EBV	Scan Weight EBV	Muscle Depth EBV	Fat Depth EBV	Gigot EBV	Terminal Sire Index	Maternal Index
EBV	3.21	0.11	-0.59	7.99	2.24	0.01	1.79	343	229
ACC	97%	77%	95%	95%	96%	97%	71%	96%	80%
Vendor: Mr Smith, Tel: 01234 434343, Email: John.smith@btopenworld.com									

RECORDING A NEW FLOCK

Establishing a new flock-recording programme takes time. Many of the breeding ewes are being assessed based on a couple of lamb records only and early culling decisions should be made with care.

In the first year of recording, focus on the differences that can be seen between your sires, as they will have the most accurate breeding values. Remember, a ram's genetic merit for maternal traits can only be assessed through female relatives. It may take a couple of years for this to be assessed through daughter records.

New breeders should also take care in making comparisons between the EBVs for sheep in their flock and those of other breeders, unless there is good genetic linkage between the flocks.

The success of any breeding programme depends on the quantity and quality of the data provided for analysis and the mating decisions that are made as a result.

Over time, it is simple for new breeders to make real change to the genetic potential of their flock. Here are some tips to help this happen.

PROVIDE HIGH-QUALITY DATA

- ▶ Submit clear, accurate and timely data. At lambing time, record fostering and embryo recipient details
- ▶ Make sure lambs are weighed between 42 and 84 days of age to get an 8-week weight
- ▶ Try to treat all your lambs the same, the larger the contemporary group the better. Record them in separate management groups if they are reared differently
- ▶ Ultrasound scan a large and representative group of your lambs, not only the best ones. Large flocks should provide additional weights of any lambs that aren't scanned
- ▶ Calibrate your weigh scales. Place something of a known weight onto them, such as a 25 kg bag of feed
- ▶ Maternal and hill flocks should consider providing ewe weights at mating time
- ▶ Provide a full pedigree for any new, unrecorded breeding stock

HOW TO MAKE THE BEST MATING DECISIONS

- ▶ Set breeding objectives and identify the EBVs of importance to your flock
- ▶ Mate the ewes with the highest EBVs to a range of unrelated sires with high EBVs to breed high genetic merit ram lambs that can be used in the flock
- ▶ Using homebred ram lambs/shearlings, which are then sold on for breeding, can provide fast rates of gain, while minimising ram costs
- ▶ Check accuracy values when buying a new ram
- ▶ Test rams of unknown genetic merit fairly. Ensure progeny are born at the same time as those by well-recorded sires
- ▶ Build genetic linkage to other flocks through AI or the careful sharing of rams, where flock health status allows
- ▶ Use EBVs when selecting female replacements and culling stock ewes (once they have several years of records behind them)

MONITOR INBREEDING

To make the fastest rates of genetic progress, breeders should breed from the sires and dams with the highest genetic merit. However, this approach must be balanced against the need to control inbreeding.

Inbreeding is the practice of mating genetically related animals and to a degree, it is inevitable in any long-term selection programme. High rates of inbreeding can lead to a decline in performance, particularly for traits influencing fitness and fertility.

Modern breeding programmes can be susceptible to increases in inbreeding due to the widespread use of AI & ET, fast generation turnover and selective use of specific family lines. Breeders need to strike a balance to optimise rates of genetic gain, while controlling increases in inbreeding.

At Signet, we publish the inbreeding co-efficient for every animal and enable breeders to see inbreeding trends over time.

Signet clients get free access to inbreeding software to assess the level of inbreeding between any two individuals. This means that mating's can be carefully planned to maximise gain and minimise inbreeding.



BREEDING FOR SUCCESS

David Rossiter, Huish flocks of Suffolk, Poll Dorset and Exlana sheep

“The information provided by Signet enables us to make better breeding decisions, both within our own flock and when breeding ewes and rams for our commercial and pedigree customers.

“We have performance recorded our sheep for over four decades. During that time, I observed large increases in lamb growth rates, carcass conformation and maternal performance that can be directly attributed to our breeding programme.”



Matt Drummond, Cassington flocks of Bluefaced Leicester and Hampshire Down sheep

“Performance recording is essential for maternal breeds where traits like milking ability and prolificacy can't be assessed purely by looking at the ram.

“Providing our commercial buyers with access to EBVs gives them the confidence to invest in the best genetics.”



Charles and Stephen Marwood, Foulrice flock of Charollais sheep

“We sell over 150 rams per annum, including large numbers sold through sales like Buihth and Kelso.

“By making breeding records available to our customers, they can find the right sheep for their system – whether this means selecting rams to lift carcass conformation or increasing lamb growth rates to get them finished sooner.

“EBVs show our customers how our rams compare to the rest of the breed and which rams will be the most profitable on their farms.”



THE COMPLETE PACKAGE FOR PEDIGREE BREEDERS

Signet provides the industry with 30 different EBVs calculated from over 5 million sheep records, but our services go far beyond the simple production of breeding values.

Contact us today and see how we can help your pedigree flock.

MARKETING SUPPORT



SHEEP FOR SALE SECTION



GENETIC CONSULTANCY



INDEX CUSTOMISATION SOFTWARE



SALE CATALOGUING SOFTWARE



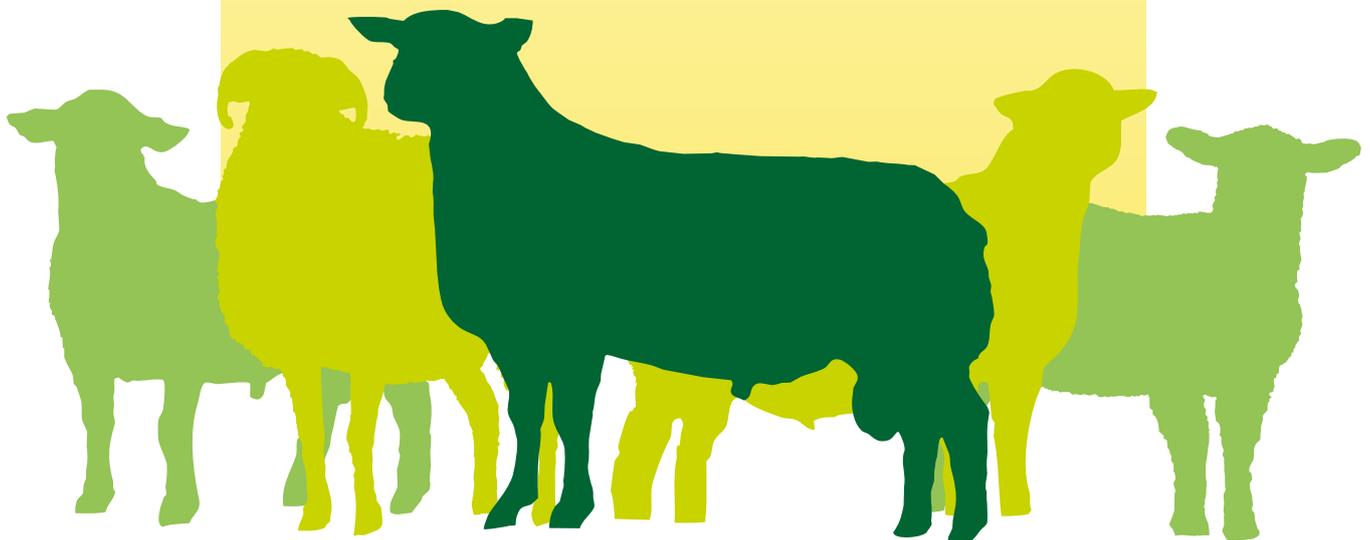
PRINTABLE FAMILY TREES
AND BREEDING CHARTS



INBREEDING SOFTWARE



FLOCK LINKAGE
CHECKER



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