# Performance recording overview, why and how to performance record your Charollais flock:

How can performance recording help your Charollais flock?

Pedigree breeding sheep is all about producing sheep that go on to sire high performing progeny in both commercial and other breeding flocks. Breeding sheep pass on their performance to their progeny via their genetics.

An animal's performance is made up of two factors; the environment (management, feed, health) and the genetics. To improve a breed or flock you need to identify the rams with the best genetics. Estimated Breeding Values (EBVs) show the genetic merit of a sheep in specific traits and allow comparison, ranking and selection within a flock and across the breed.

EBVs are used to identify the rams with the best genetics and should be combined with a physical assessment of the rams to assess health and soundness. Using performance recording allows continuous progress as shown in the Charollais breed, which has increased the genetic potential for scan weight by 5kg over the last 20 years, with similar gains seen in muscling.
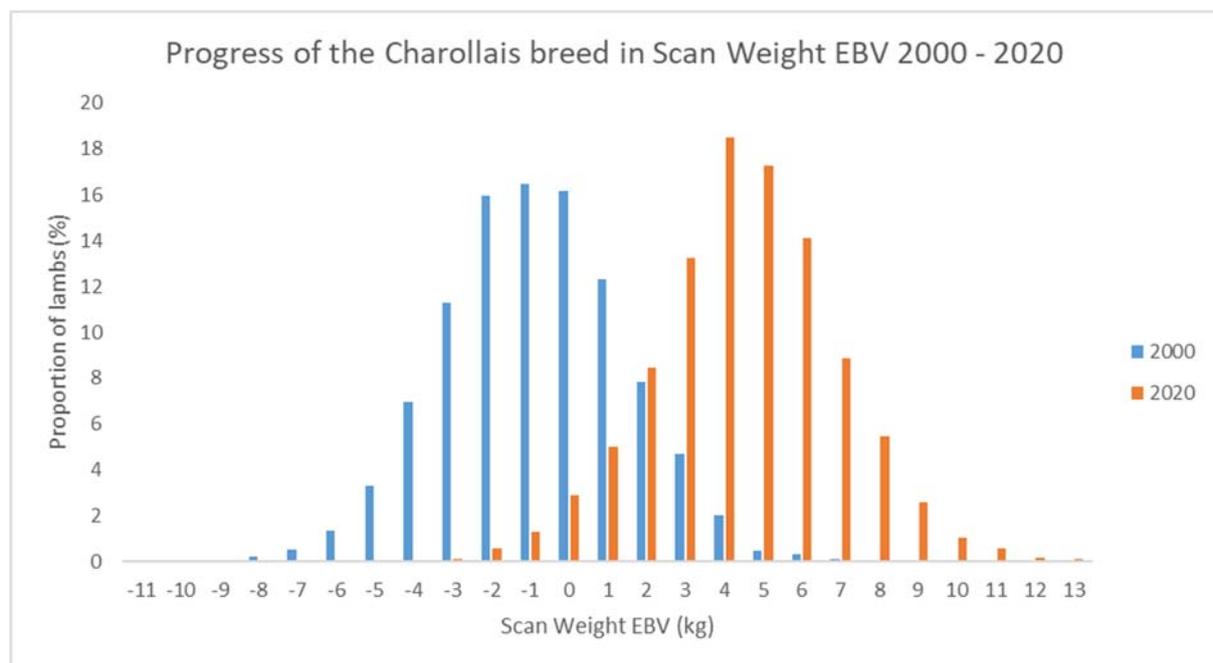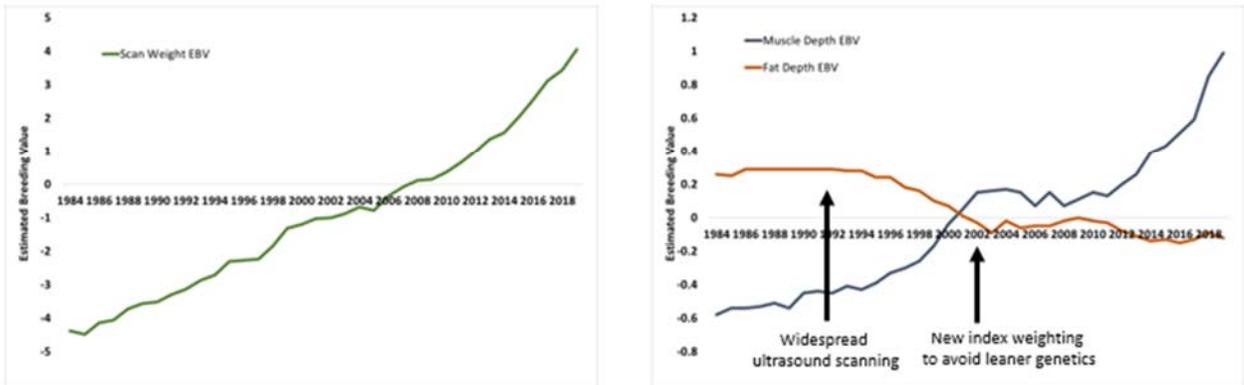
Understanding the value of ultrasound scanning

Genetic improvement of the sheep industry is worth £10.7 million per annum.

Creating cumulative and permanent change to enhance productivity and efficiency

Charollais Genetic Trends
Weight adjusted muscle and fat depth EBVs

Why record?

Recording your flock means that you can make continuous genetic progress. Important terminal commercial traits such as days to slaughter, carcase weight, carcase conformation and fat class can only be measured in dead lambs. EBVs are measurements taken from live animals so they can be used for breeding. The RamCompare project has proven the relationship between the commercial traits and the EBVs measured in breeding flocks.

Recording your flock also helps to add value to your flock at sales, as both pedigree and commercial flocks are looking for high genetic merit sheep to boost their performance. Performance recorded sheep often reach higher prices and achieve higher clearance rates.

Indexes, selection and breed benchmarks:

EBVs are combined to represent the overall economic genetic merit of sheep, for Charollais; this is known as the Terminal Sire Index. The Terminal Sire Indexes objective is to select fast growing lambs with good carcase conformation and weight.

When selecting sheep, you can compare them to the rest of the flock or the rest of the breed. To compare to the rest of the breed there is a breed benchmark, this splits the breed up into the proportions, with the top performing sheep in the top 50%, 25%, 10% and 5% of the breed.

To progress the breed and your flock, always try to select animals in the top 50% of the breed. To make the fastest progress select sheep that are in the top 10% and 5% of the breed. It is rare to find a sheep that will excel in every trait, so the Index means you can balance the overall genetic progress of your flock.

Each year the benchmark is updated to include the previous year's lambs and updated before lambing to account for the progress made in the breed the previous year. Always make sure you are comparing sheep to the most recent breed benchmark.

How to record a flock

Recording your flock takes into account the pedigree data from your flock and links it to measured performance. This helps to add value to data you are already recording, and in many cases non-recording breeders are already collecting most of the information. Performance recording is common in pedigree flocks, as they are supplying high genetic merit sheep and progress to the rest of the industry.

There are 3 key timings to collect information about your flock:
1. Lambing:
   - Collect pedigree lambing records
2. Eight week weight
   - One weight when all lambs are between 6-12 weeks
3. Scan weight
   - Record all lambs when lambs average 40kg and above- traditionally 17 weeks
   - Option to ultrasound scan lambs too, recording muscle and fat depth

For more information about recording your flock head to sheep recording.

When and how to submit data

Evaluations are now monthly, so submitting your data is very flexible. Each year the schedule is updated, find the full schedule here.

There are several ways to submit your data:
- Directly online via Signetdata.com
- Electronically, exporting spreadsheets from on farm software
- Paper records (this incurs an additional processing fee)

Ultrasound scanning why and when

The Muscle and Fat Depth EBVs strongly link carcase conformation and carcase fat class, so help you to improve the carcase quality of the lambs that your rams will go on to sire.

Ultrasound scanning lambs takes measurements from all available lambs in a flock and large numbers of lambs are measured across the whole breed. This large dataset is valuable in assessing how lambs compare to the whole breed to identify the sheep with the best genetics for carcase quality.

Ultrasound traits are weight adjusted, showing the genetic potential for how much extra muscle or fat a lamb will have at a fixed carcase weight. This means that scan timing is determined by the weight of lambs. Always aim to scan your lambs when they are above 40kg, for example; breeders often scan when lambs are 17 weeks.

CT scanning when and why

CT scanning lambs gives an assessment of the carcase measurements of lambs, without needing to slaughter the lamb, which therefore helps to progress the genetics in carcase conformation and weight. When selecting ram lambs to CT scan, select ram lambs sired by different rams and those that are going to be used for breeding in your flock or sold to other pedigree breeders.

Traits that are assessed by the CT scanner are:
- CT Lean Weight EBV - muscle weight at a fixed live weight (kg)
- CT Gigot EBV - extra width of muscle at a fixed hind leg length (breeding for animals with fuller gigots)
- CT Fat Weight EBV - fat weight at a fixed live weight (kg)
- Spine Length EBV - total spine length
- Spine Number EBV - total number of vertebrae

        o   Eye Muscle Area EBV - area across the loin (mm^2)

CT scanning of lambs should be arranged soon after ultrasound scanning of lambs. Ultrasound scanning lambs helps to identify the best lambs to go on to be CT scanned.

How can performance recording help to progress your Charollais flock?

What have Charollais breeders achieved?

Charollais have been recording large numbers of lambs for over 30 years, in excess of the 4,500 lambs which have been recorded on average for the last 5 years.

The breed has made great progress and has increased the Scan Weight EBV by 7kg, on farm this has improved the lamb weight at 21 weeks by 5.1kgs with similar gains in muscling. Changes in management and environment over time will impact these measurements too, which is why there are so many benefits to using performance recording to identify the genetic merit and progress over time.

## How can you improve your flock with performance recording?

Performance recording with Signet is not only about producing EBVs showing the genetic merit of sheep, but is also to aid you to get the most out of your data ensuring the best breeding decisions and to assist with sales of breeding sheep. Signet produces several reports that are accessible on Signetdata.com to help you easily interpret your data.

Flock trends

Genetic trend reports can be produced at both a flock and a breed level for any trait including inbreeding, with the average values for lambs, sires and dams. These genetic trend reports can be used to assess flock progress, identifying successful breeding decisions and spotting any potential negative trends in your flock that you need to consider. Tracking inbreeding for your flock means that you can find any negative trends and use this information with the inbreeding calculator to reduce inbreeding.

These reports can be used to aid in the marketing of your sheep and your flock. Showing the trends and progress of your flock over time in traits and indexes demonstrates the genetic improvements that

you are providing to your customers and shows that you understand and are effectively using performance recording to influence your breeding decisions.

Terminal Index genetic trend of Charollais lambs 2010-2020
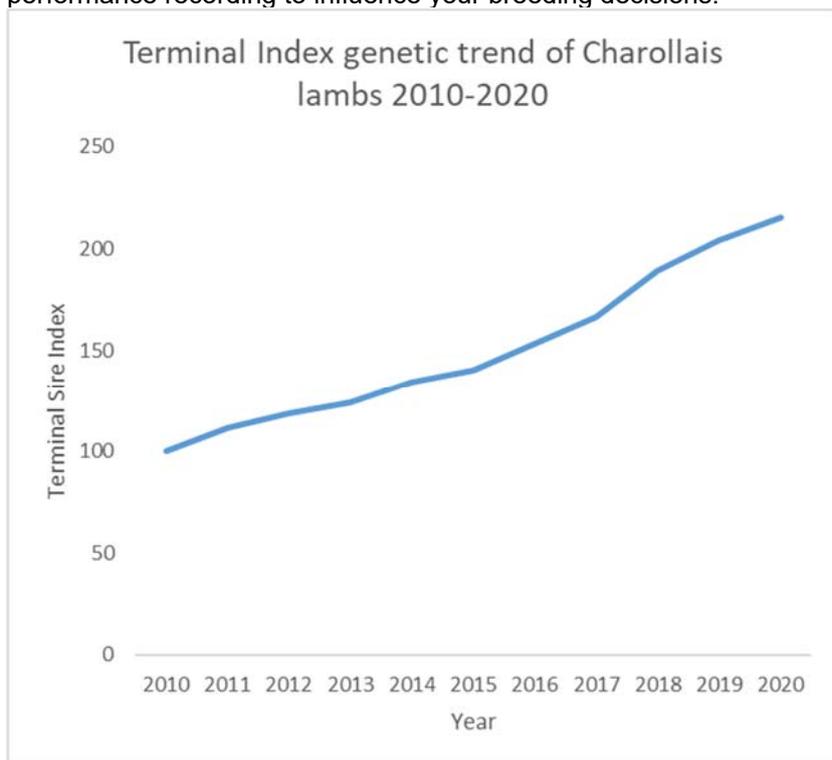
Flock reports

These reports give an overview of your flock and can be produced both as an electronic file or a printable document. These reports are used when making decisions about which sheep will be retained and used for breeding and which will be sold.

Reports

For recording flocks there are several reports that breeders can use to aid selection, breeding and marketing decisions for their flocks. These reports can be produced as printable PDF files to take out into the field, or as excel files to allow more in depth data sorting. Reports available are:

- Quick reference list – A simple listing of sheep to print and take into the field
- Sire progeny summary – So you can see the genetic merit of sires past and present
- Ewe performance summary – Reporting the lambing records for each ewe over time
- Genetic trends – To track progress over time
- High five list- showing the top five sheep born in a selectable period from each flock for the breed

Inbreeding calculator

In any closed population (breed) inbreeding is inventible as no or few new sheep are being added into the population. As breeders are selecting the best breeding stock, a few animals can be found in the pedigrees of many animals in subsequent generations. This happens in both recorded and non-recorded populations.

A breeding strategy should balance the gains in genetic potential with potential gains in inbreeding. To help manage inbreeding in your flock, Signet provides an inbreeding calculator using the pedigrees that are stored on Signetdata.com. In order to provide an accurate value, sheep need eight great grandparents to be calculate an inbreeding value.

The inbreeding values for Signet recorded Charollais sheep are published on the database as part of the animal's record.
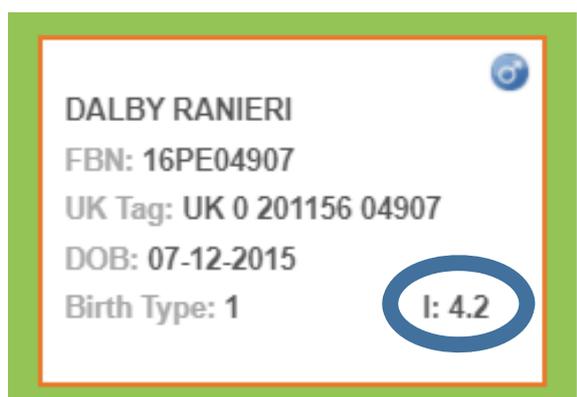
The calculator will automatically load the ewes in your flock, so you only need to select potential sires. The results can be viewed online or exported as a CSV file.

Sheep for sale

EBVs show genetic potential of sheep, this helps to add value and aid the sales of breeding sheep. Signet have produced a Sheep for Sale page, where breeders can list their breeding stock which they have for sale. This shows the breeder details and links to the animal's page. In 2020 there were over 500 rams listed at the peak of the ram selling season, with over 200 page visits per day.

Performance reports: Page 4

Signetdata.com holds all of the sheep pedigrees, Estimated Breeding Values (EBVs) and breeding information which anyone can access. Search features help you to find specific sheep, find breeders based on their names or details, find performance recorded Charollais that are for sale and there is even a filter enabling you to search for sheep that meet your specific criteria.

You can also find online reports for the breed benchmark and to show the top rams of the year in three categories; ram lamb, shearling ram, stock ram and breed. These reports update automatically when new data is added. These reports can be found by following the links:

Ram lambs- https://signetdata.com/breed-summary/charollais/ramlambs
Shearling rams- https://signetdata.com/breed-summary/charollais/shearlings
Stock sires- https://signetdata.com/breed-summary/charollais/stockrams
Breed Benchmark- https://signetdata.com/media/2891/charollais-benchmark-2020.pdf that will automatically update.

There are now quick links to help you find your nearest performance recording breeder, based on your postcode and to browse performance recorded sheep that are for sale.

Sheep for sale page: https://signetdata.com/sheep-search/search-sheep-for-sale/
Flock finder: https://signetdata.com/sheep-search/flock-finder/
Breeder search: https://signetdata.com/sheep-search/breeder-search/