

CIEL at Work

The EWEBenefit Project

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In (no more than) 15 minutes



New approaches to genetic evaluations

Signet have relaunched all of our evaluations over the last 6-8 years

AHDB have invested in new, mixed breed approaches which

- Enable the production of monthly genetic evaluations
- Produce EBVs for crossbreeds and the use of commercial data (e.g. RamCompare)
- Enable some breed comparison
- Makes it easier to move research into the industry



Terminal Sire Evaluation
Launched in 2018

Hill Sheep Evaluation
Launched in 2020

Maternal Sheep Evaluation
Launched in 2022

Opportunities for
Abattoir data

Saturday: 16.40
Abbygail Wells and
Andrew Walton

Genomic breeding
values for hill sheep

Saturday: 15.50
Janet Roden

The New Maternal
Evaluation

Friday: Now
Samuel Boon

Where next for
the Terminal
Sire Evaluation



Where next for
the Hill Sheep
Evaluation

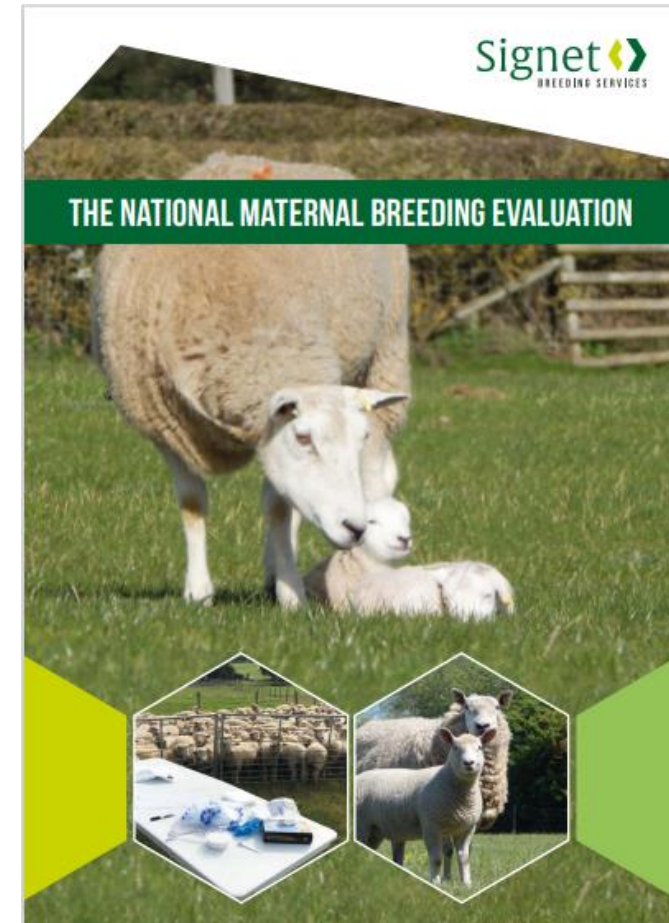


THE NATIONAL MATERNAL
BREEDING EVALUATION



A New Approach for Maternal Breeds

1. A multi-breed evaluation
 - Can handle crossbred and commercial data
2. Monthly analyses
3. Old EBVs updated
 - Move carcass traits to a weight adjusted basis
4. New EBVs introduced
 - Ewe Mature Size, Body Condition Score
 - Ewe Longevity and Lamb Survival
 - Abattoir traits
5. New Breeding Indexes



Updating the Maternal Evaluation



Breeding values

- Birth Weight
- Lambing Ease
- Lamb Survival
- Litter Size Born
- Litter Size Reared
- Maternal Ability

- Eight Week Weight
- Scan Weight
- Muscle Depth & Fat Depth
- Abattoir traits

- FEC - Strongyles
- FEC - Nematodirus
- IgA - Blood Serum

- Shearling Ewe Weight
- Ewe Mature Weight (Mating)
- Body Condition Score (Mating)
- Age at First Lambing
- Ewe Longevity

Impact



Influencing the number of lambs successfully reared by the ewe



Weight and quality of lambs sold



Parasite resistance



Lifetime productivity and efficiency of the ewe

Ewe weights and body condition score

Why is mature size important?

- Ewe mature size will increase when selecting for lamb growth rates
- Ewe mature size influences flock efficiency both in economic and environmental terms

Initial work

- AHDB, HCC & QMS funded Abacus report
“Optimising Mature Weight for Farm Efficiency and Profitability”
- AHDB funded PhD looking at growth curves in livestock with Emma Mutch at SRUC

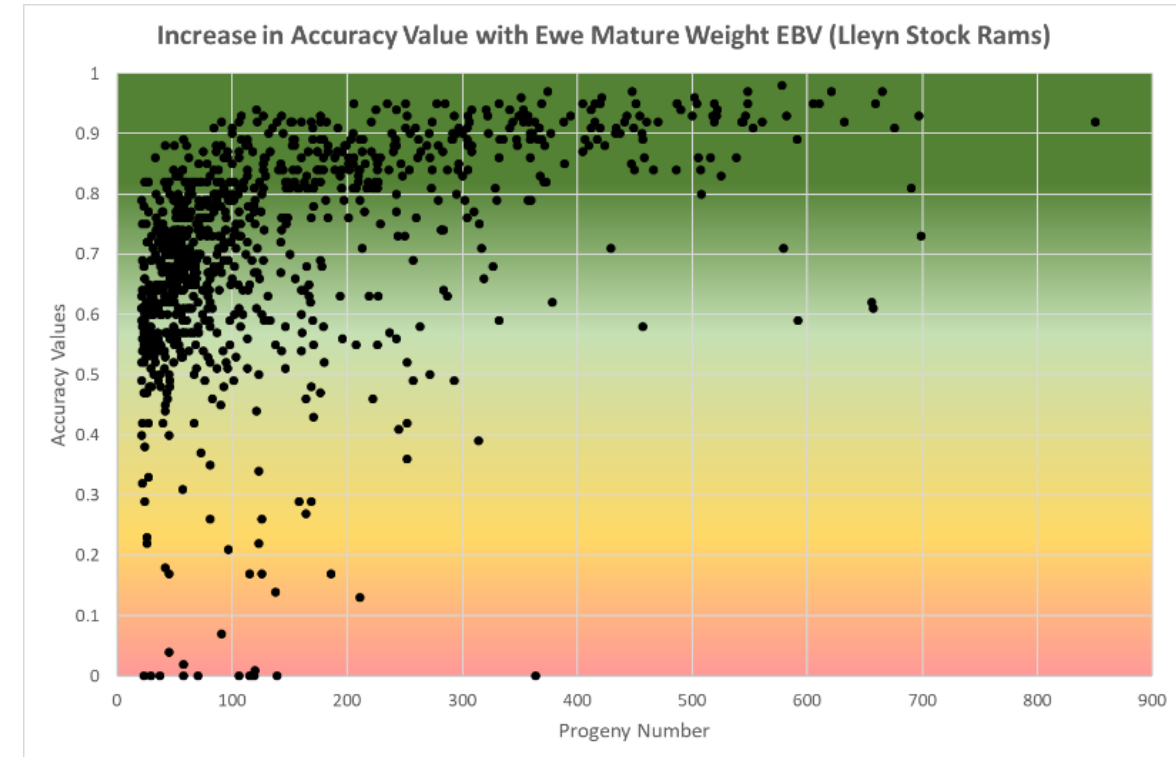


Ewe weights and body condition score

We found three windows of weighing.....

- Pre-mating
 - 140-175 days pre-lambing
- At 8 week weighing time
 - 49-84 days post lambing
- Weaning time
 - 85-133 days post lambing

Ewe body condition scores can be collected at the same time



Two published EBVs

- Pre-mating ewe mature weight
- Pre-mating body condition score

Lamb Survival and Ewe Longevity

- Traits derived from “data mining”
 - We know when an animal is born
 - We know if it was weighed again, thus “survived”
 - We know the last lambing event, thus “longevity” or “lifespan”
- Lots of edits, just some examples
 - Lamb Survival
 - >95% and <50% survival in contemporary group
 - Longevity
 - Unknown parents
 - Strange age at first lambing etc



Abattoir traits – adapted from RamCompare

Early stage breeding values for

- Carcase weight
- Carcase conformation
- Fat class
- Days to slaughter

Some large flocks are sending in large dataset of current and historic data



Breeding for Worm Resistance

What are our options?

Counts of stomach contents for Strongyles and Nematodirus

Pro's: Gold standard for true level of parasitism

Con's: Very expensive, not an accessible phenotype for breeding programmes



Dag Score

Pro's: Cheap and easy

Con's: Subjective, not a reliable indicator of infection. Damaging to animal health and not analysed in the UK

Faecal Egg Count (FEC) Strongyles Faecal Egg Count (FEC) Nematodirus

Pro's: FEC is still the gold standard for on-farm measures of parasite burden

Con's: Relatively expensive. Lambs must be under a high worm burden to get meaningful results

Serum IgA

Test developed by Glasgow University to detect lambs immune response. Specific to *Teladorsagia Circumcincta*

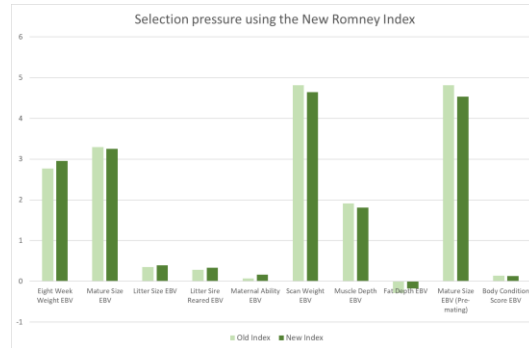
Pro's: Research shows tremendous promise. Does not require high worm burden. Heritability of ~30%

Con's: More challenging to get samples as it is a blood test. Not currently cheap, but valuable if informative

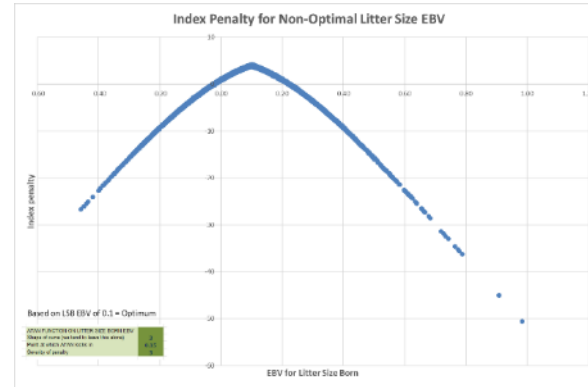
It is harder to have it all



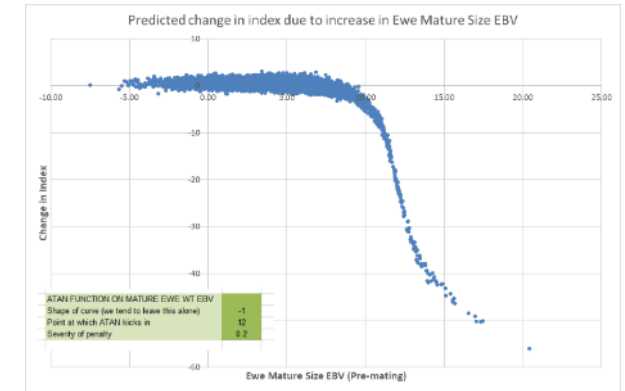
New breeding indexes



- Linear weightings
 - Early growth rates
 - Litter size born & reared
 - Maternal ability
 - Muscle depth
 - Fat depth (small positive weighting)



- Non-linear penalty
 - Penalty for non-optimum prolificacy
 - Penalising those producing a high proportion of singles / triplets



- Non-linear penalty
 - Penalty for high ewe mature size EBVs
 - Typically impact the ~ Top 10% of ewes

Where can I find more information?

Breeding Report

Flockbook Number: 1207/2106104
 Full Name: GOLDIES
 UK Ministry Number: UK 0 581589 06104
 Sex: M
 Date of Birth: 26/03/2021

Breed: LLEYN
 Status: Live
 Breeder: Hamish Goldie [View](#)
 Owner: Hamish Goldie [View](#)

Sire: UK 0 523606 06535 [View](#)
 Sire Name: LAGA
 Dam: 1312:1603367 [View](#)
 Dam Name: GOLDIES

[Print Sale Chart \(pdf\)](#)
[Print EBVs \(pdf\)](#)
[Print Pedigree \(pdf\)](#)

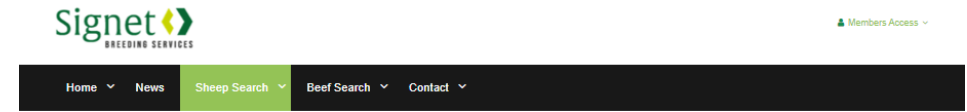
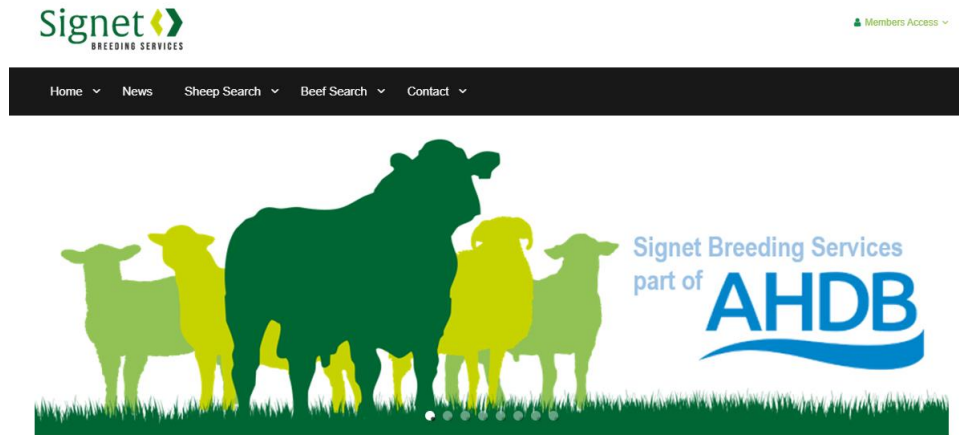
Latest EBVs: ← Lower values | Higher values →

Analysis date: 11/10/2021

EBV	Accuracy
Birth Weight	0.49 60%
Lamb Survival	0.00 33%
Eight Week Weight	2.95 71%
Mature Size	5.94 75%
Litter Size	0.19 62%
Maternal Ability	1.90 71%
Scan Weight	8.95 79%
Muscle Depth	1.78 73%
Fat Depth	0.16 75%
FEC (Strongyles)	-0.02 43%
FEC (Nematodirus)	0.24 49%
FEC (Combined)	0.22 46%
Saliva Iga	-0.02 17%
Age At First Lambing	0.01 52%
Lambing Interval	0.24 41%
Longevity	-0.01 46%
Lleyn Index	315 70%

EBVs are not reported if accuracy values are below the publication criteria

Where can I find more information?



Flock Finder

Find Signet Recorded Flocks in your area by selecting your breed of interest and postcode.

You may be interested to know that permanent, breed specific web links also exist for every Signet recorded breed.

For example, the link for Beltex is as follows - to get another breed, simply change the breed name at the end of the URL to the one used by Signet.

- <https://signetdata.com/flock-finder/beltex>



Breed:

Postcode:

Flock Finder results for the EASYCARE breed based on their distance from CV23 9PB

P G Kane & Son
 Flock Code: UK 0 207139 -Latest EBVs
 Prefix: KANES
 Tel: 01608 663767
 M: 07919 410276
 pg_amas@hotmail.com

Maybirch House
 9 Stratford Road
 Shipston on Stour
 Warwickshire
 England
 CV36 4AU Distance: 24 miles

Andrew King
 Flock Code: UK 0 227087 -Latest EBVs
 Prefix: RUFFINS
 Tel: 01284 850319
 M: 07774 668393
 ruffinsfarm@hotmail.co.uk

Ruffin Farm
 Wheplead
 Bury St Edmunds
 Suffolk
 England
 IP29 4UD Distance: 84 miles

Liz Genever & Dave Cross
 Flock Code: UK 0 223896 -Latest EBVs
 Prefix: GLOVERS
 Tel: 07790 378349
 M: 07790 378349
 liz@lizgenever.com

Glovers Farm
 Sedgford
 Hunstanton
 Norfolk
 England
 PE36 5LT Distance: 86 miles



SHEEP SEARCH

Find EBVs, indexes and pedigree details for Signet recorded sheep



EBV SEARCH

Search for sheep with the right genetics to meet your flock requirements



FLOCK FINDER

Find contact details for Signet recorded flocks



A RAM BUYERS GUIDE

Breeding Information for commercial flocks



BEEF SEARCH

Find EBVs, indexes and pedigree details for Signet recorded cattle



EBV SEARCH

Search for cattle with the right genetics to meet your herd requirements



HERD FINDER

Find contact details for Signet Recorded herds



A BULL BUYERS GUIDE

How to use EBVs in commercial herds when buying recorded cattle

Adding value through flockbook services

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Flockbook Services

Flockbook Services

In recent years a number of breeds have approached Signet to ask if we are willing to host their flockbook.

This is a new area of work for Signet, but our online data collection platform does provide us with new opportunities to deliver this type of service at a price that is affordable to members - whether they are Signet clients or not.

Signet can provide all Society members with an online:-

- Birth notification service
- Census update
- Naming and simple registration service
- Directory of breeders - via "Flock Finder" to highlight your nearest flock

As well as access to breeding values and inbreeding values for every animal notified to Signet (subject to their breeding values exceeding a minimum level of accuracy to deem publication appropriate).

We haven't quite finished....

- Samir at SRUC has been reviewing a number of current procedures and recommended
 - We update the MIX software, which in test runs has been shown to enhance the way we assess Maternal Ability.
 - Update the way repeatability traits like litter size, mature size and body condition score are evaluated
 - Updating the way we calculate accuracy values for maternal traits; but this won't influence the EBVs
- We know constant changes aren't always helpful; but we felt these were important enough to merit an update in December ahead of the new season.



Summary



- We have come a long way in the last 20 years
 - Three monthly, multibreed evaluations launched and being used
 - Moved from 7 EBVs to over 50 EBVs
 - Thinking about environmental traits, abattoir traits and genomics

