Programme for the day

13.00 Welcome – Steve Dunkley, AHDB Beef & Lamb

Introduction to the Swaledale Breeders project – Steve Dunkley

EBVs and how to use them and results so far from 2017 lamb crop – Steve West AHDB Beef & Lamb

Health considerations for sheep breeding and lamb finishing work – Kate Philips, Independent Sheep Consultant

View top 10% lambs and demonstration of ultrasound scanning – Steve West

15.00 Finish

The European Agricultural Fund for Rural Development: Europe investing in rural areas

North York Moors Swaledale Breeders - Operational Group

August 22nd

Steve Dunkley – Senior Knowledge Exchange Manager

NYM Swaledale Breeders EIP Operational Group

- Defra/EU funded project
  - European Innovation Partnership (EIP – Agri)
- Application made in March 2016
- Approved in Jan 2017
- Secured support towards
  - Hire of EID equipment
  - Consultant support / lab fees
  - Performance recording / scanning
  - Open days
  - Farmers match funding it with own cash

NYM Swaledale Breeders EIP Operational Group

- 4 hill farmers from the North York Moors
- Ewes in project
  - Yr 1 - 790
  - Yr 2 -1,220
  - Yr 3 – 1,530
- Tim Dunn – Group chairman and applicant
- AHDB and Kate Philips supporting

The Challenge

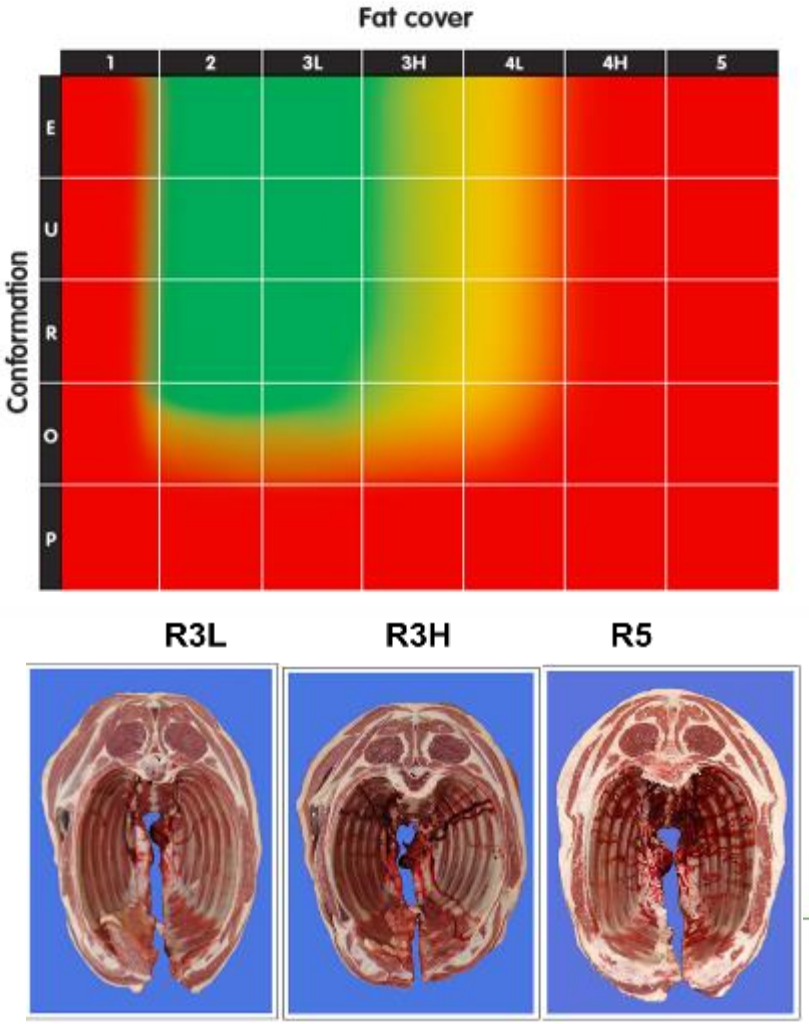
- The traditional use of genetic selection done purely on phenotype (physical appearance)
- Poor carcase traits
- The exclusion of techniques that increase the speed of genetic gain - AI
- Hill farming systems and environmental constraints provide obstacles to the current way of collecting genetic/physical data
  - e.g. gaining a new born lamb weight outside, gathering ewes/lambs from moorland
- The cost of technologies to assess meat yield (CT)

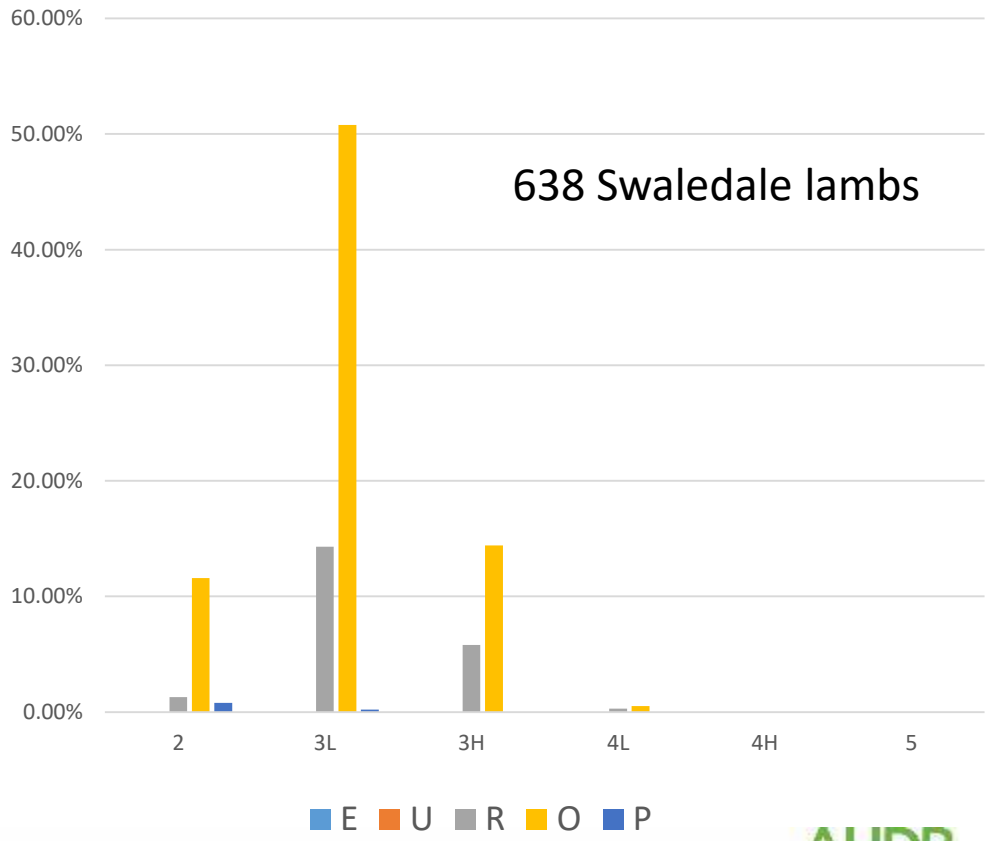
Objectives

- Identify Swaledale sheep with better carcase traits (loin, hind leg and shoulder) and use them within a breeding programme to improve carcase quality and consistency
- Develop new ways of data collection and new and novel data sets that can be used in genetic evaluations for hill sheep carcase traits
- Develop existing ultrasound scanning technologies to provide a measure of total muscle area
- Take lambs from the breeding programme and trial different finishing systems

Carcase traits – Hunt House Farm 2013/14

EUROP Grid - Lamb





AHDB BEEF & LAMB

Performance recording - Challenges of data collection

- Single sire mating
- Lack of AI / ET
- Data collection at lambing time
- Ability to weigh/gather
- Identification of sheep

Create a nucleus group

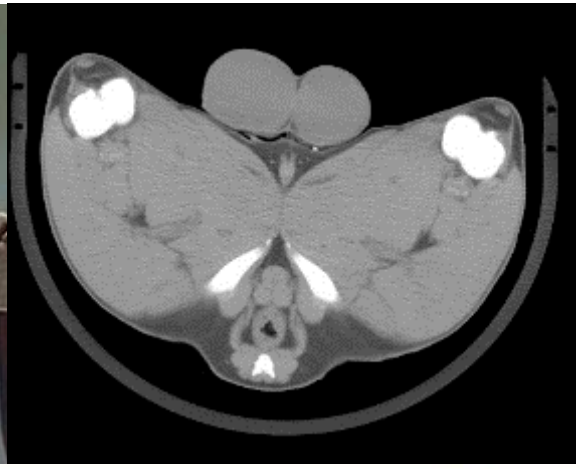
Collaboration / sharing genetics

Lamb close to farm / lamb a slightly earlier batch S/M/L

Tie in with clipping / Digital weighing systems

Farm software/EID

Scanning Technologies



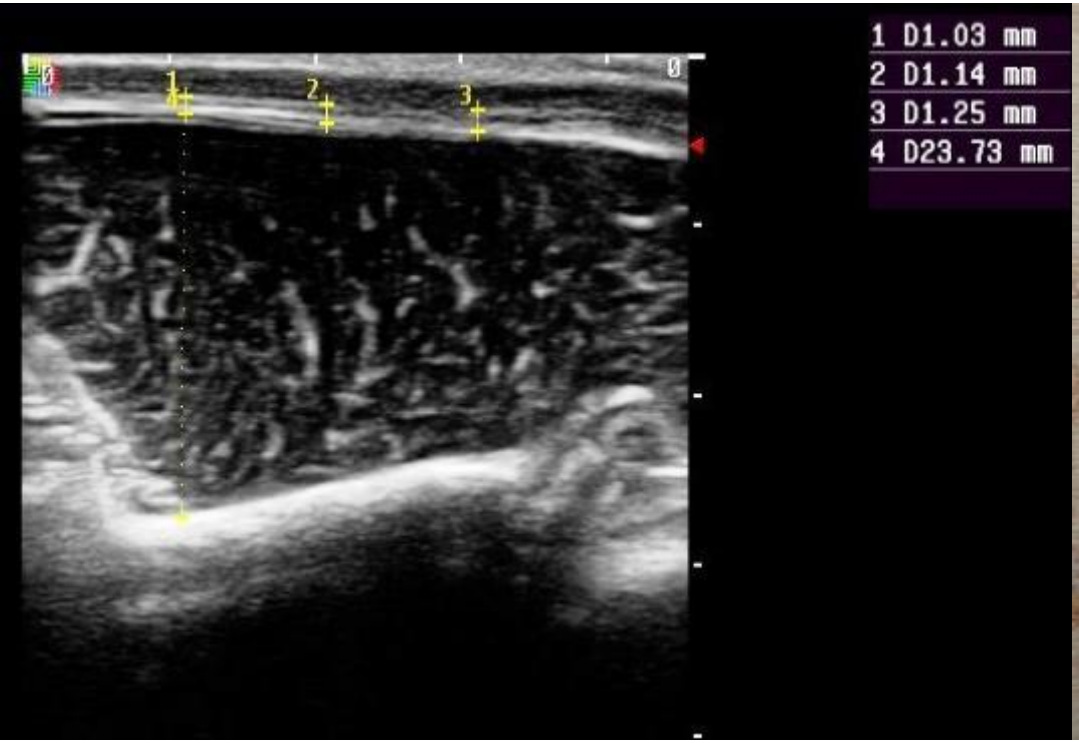
CT – Too expensive for hill sheep?

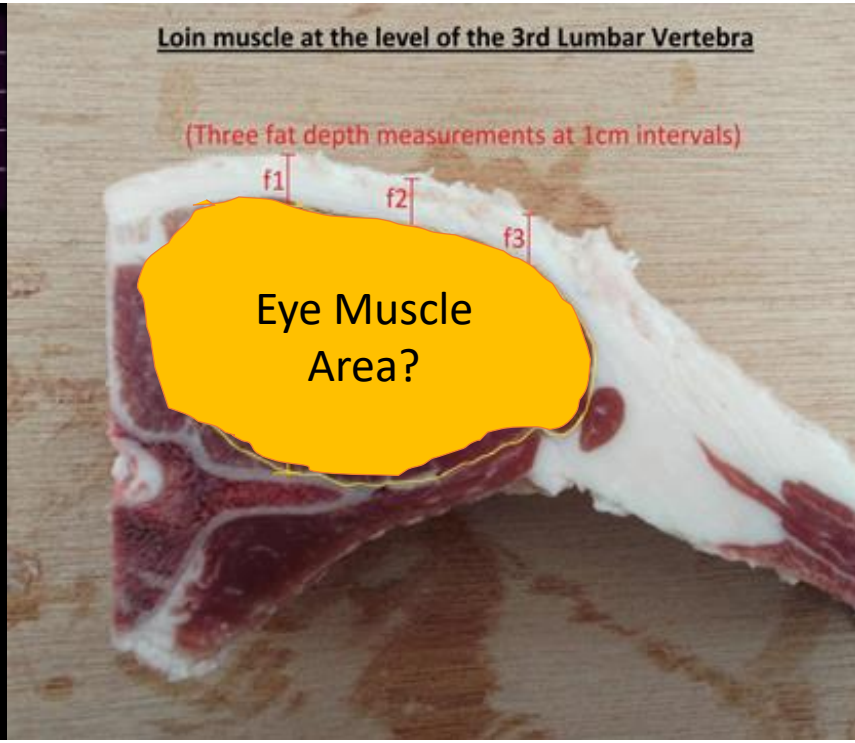
Ultrasound
Meat Yield?

Scanning involves parting wool over the third lumbar vertebra, applying liquid paraffin to ensure acoustic contact and placing a transducer on the prepared site. This is adjusted until a clear image of the vertebra, eye muscle and fat layers can be seen. Linear measurements of fat and muscle depths are taken and downloaded to a computer.

The European Agricultural Fund for Rural Development: Europe investing in rural areas

Scanning Technologies





Dissemination Plan

- Events: Delivery of farm open days
  - Year 1: 22nd August 2017 - Barry Wheldons
- Web: Progress, presentations, case studies and interim/final reports and results
- Press: Case studies and editorials for press, NFU / NSA / Sheep Breed Societies
- EIP Agri: The group will publish a final report that will be provided to the EIP Agri website.

Thank you

EBVs and Swaledales

Birk Nab Farm August 2017

Steve West

The European Agricultural Fund for Rural Development: Europe investing in rural areas

Photo: LEE WEI CHEAN

DATE	TRACK	DIS	TRP	SPLIT	POS	FIN	BY	WIN/SEC	REMARKS	TIME	GOING	PRICE	GRD	CALC
22Apr	HallG	480m	[1]	4.93	1322	1st	shd	Classy Blossom	*EP, Mid-Rls, LdNrLn*	29.31	-10	7/1	A4	29.21
17Apr	HallG	480m	[1]	5.01	1122	2nd	1	Feel The Benefit	*Mid-Rls, Ld-2*	29.18	N	4/1	A4	29.26
13Apr	HallG	480m	[1]	5.01	2211	1st	dht	Outback Casandra	*Rls-Mid, Ld1/2*	29.68	-20	9/2	A5	29.48
06Apr	HallG	480m	[1]	5.09	4466	6th	5	Dunquin House	*Mid-Rls, Fcd-Ck&Crd1/2*	29.82	-20	5/1	A5	30.03
01Apr	HallG	480m	[1]	5.06	3555	3rd	6¼	Butterbridgetina	*EP, Mid-Rls*	29.33	-30	5/2	A5	29.53

BEST RECENT TIMES :

TRAP	NAME	TRAINER	SEC TIME	SECTIONAL TIMES	POSITION AT 1ST BEND	CALC TM	CALCULATED TIMES	ADJ TM	ADJUSTED TIMES
1	Blue Angel	M E Wiley	3.86			25.00		24.96	
2	Aero Nizuc	M L Locke	3.88			25.12		25.18	
3	Romeo De Janeiro	P W Young	3.91			25.11		24.87	
4	Alrita Captain	M E Wiley	3.85			25.12		25.04	
5	Lilys Rocket	P W Young	3.85			25.11		25.03	
#	Offshore Diva	A J Ingram	3.82			25.01		25.06	

AVERAGE TIMES :

TRAP	NAME	DOB	SEC TIME	SECTIONAL TIMES	POSITION AT 1ST BEND	CALC TM	CALCULATED TIMES	ADJ TM	ADJUSTED TIMES
1	Blue Angel	Jun '09	3.92			25.31		25.28	
2	Aero Nizuc	Oct '11	3.91			25.46		25.37	
3	Romeo De Janeiro	Nov '10	3.97			25.47		25.31	
4	Alrita Captain	Jun '09	3.90			25.42		25.21	
5	Lilys Rocket	Sep '09	3.90			25.25		25.15	
#	Offshore Diva	Oct '09	3.90			25.37		25.26	

The European Agricultural Fund for Rural Development: Europe investing in rural areas

AHDB BEEF & LAMB

Factors influencing performance

Feeding

Health

Management

Breeding

What do recording breeders do?

- Lambing data
  - Sire, dam, date of birth, sex, fostering
  - Optional: Birth weight / lambing ease
- 8 week weights
- Scan lambs using ultrasound
  - Remember management groups
- Ewe mature size

How do we assess performance?

Performance Data

Pedigree Data

Estimated Breeding Values

Index

The system is 'risk averse'

Estimated Breeding Values

Swaledale Index ?

EBV	Characteristic
Maternal Ability EBV	Maternal ability
Litter Size EBV	Prolificacy
Eight week weight EBV Scan Weight EBV	Efficient growth
Muscle Depth EBV Fat Depth EBV	Saleable meat Lean meat yield
Ewe Mature Size EBV	Efficiency

The European Agricultural
for Rural Development:
Europe investing in rural

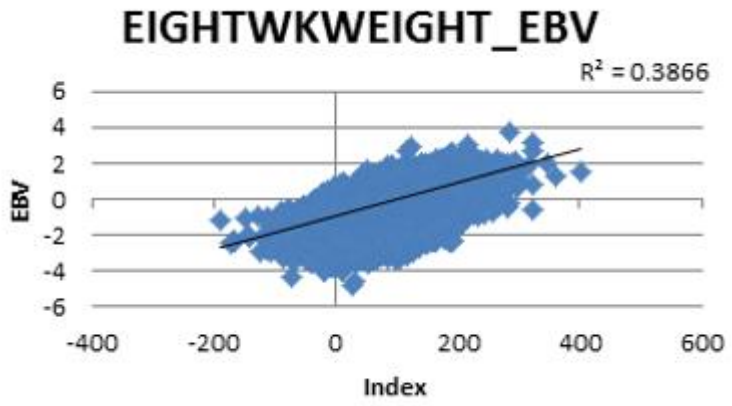
AHDB
BEEF & LAMB

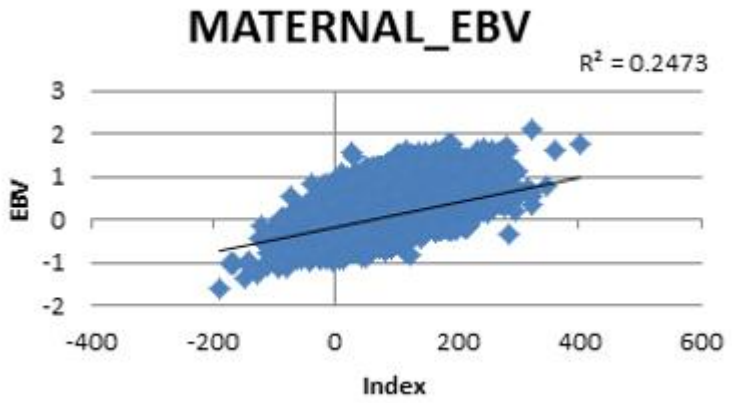
Indexes – what do we have?

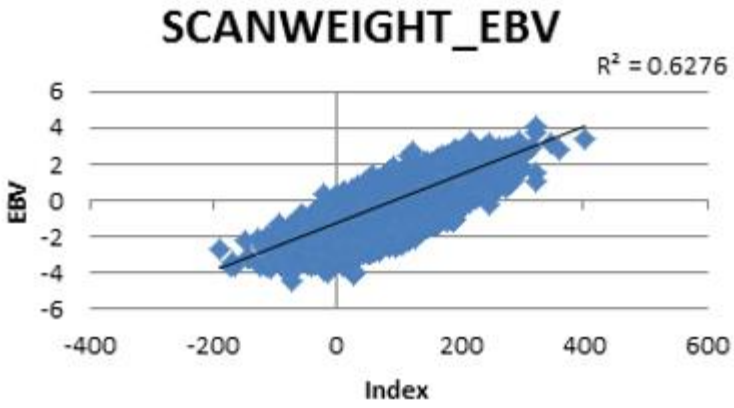
- Terminal Index – Suffolk, Texel, Charollais
- Maternal Index – Lleyn, Romney, Roussin
- Carcase+ Index – Lleyn
- Hill Index – Scotch Blackface, Welsh Mountain

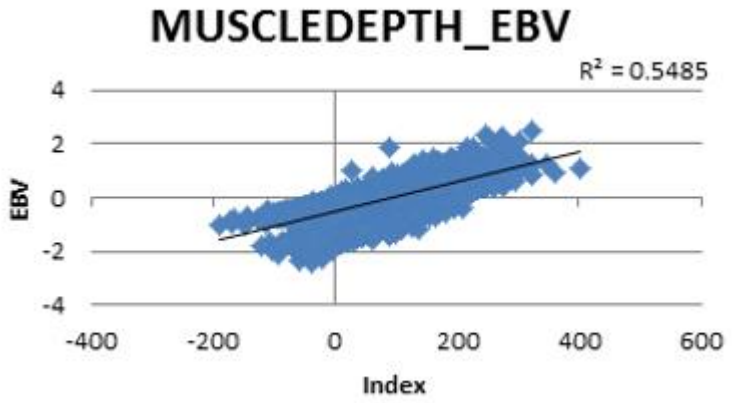
NEW! SWALEDALE INDEX

New Index Correlations









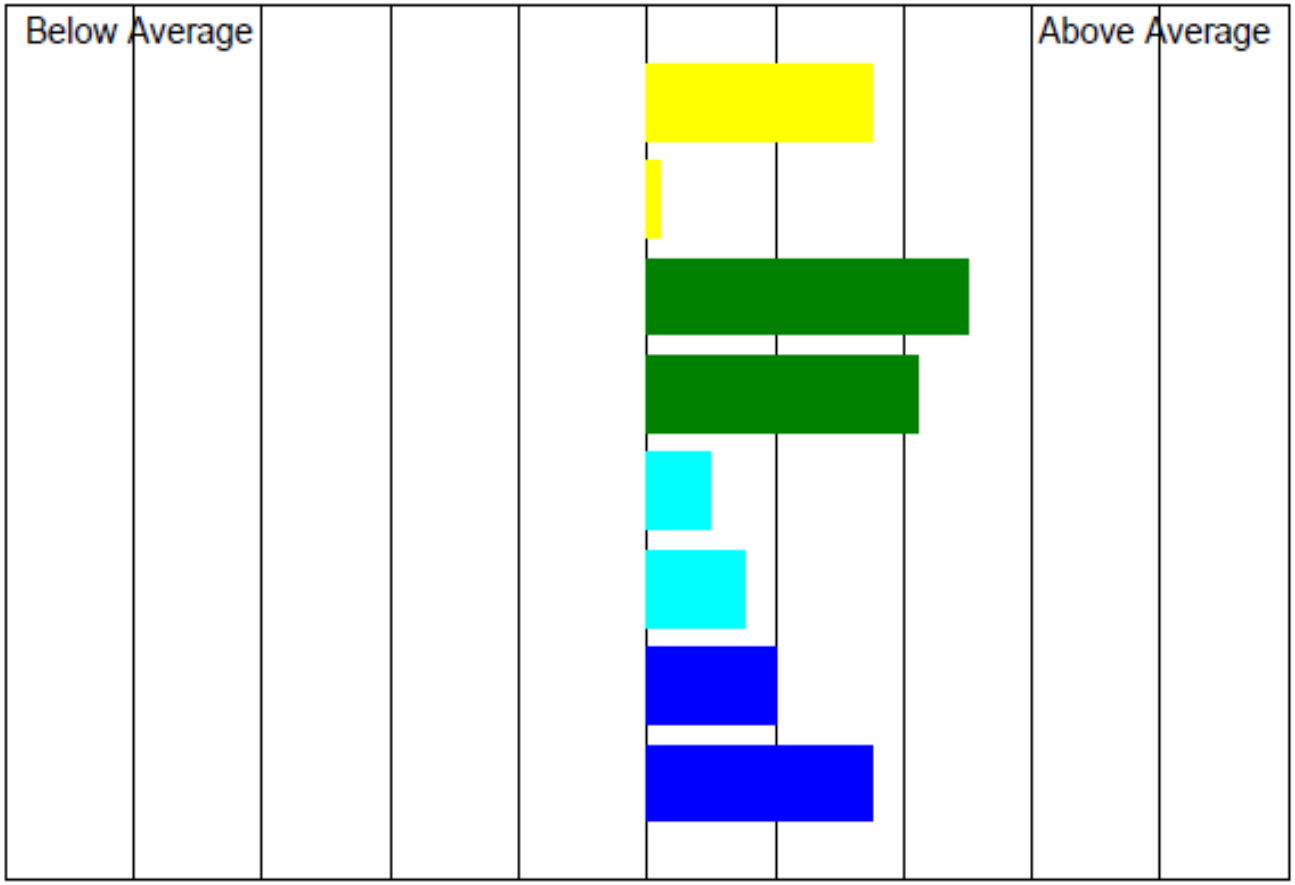
SIDEDOWNS BB:13172

Sire: GROVERMAN5429

Dam: BB:K1131

Ultrasound Scanned: Yes

Date of Birth 18/01/2013



	EBV	Acc
Litter Size	0.11	50
Maternal Ability	0.58	55
Eight Week Weight	2.19	88
Scan Weight	3.81	87
Muscle Depth	1.04	89
Fat Depth	0.25	90
Maternal Index	165	85
T. Sire Index	189	87

Signet

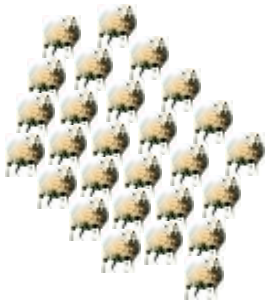
Signet Breeding Services

BLUP RUN : 21/08/2014

Produced by Signet Breeding Services

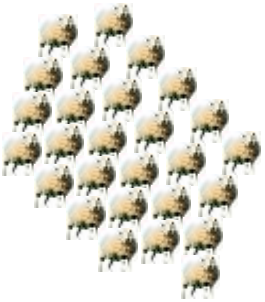
Stoneleigh Park, Kenilworth, Warwickshire, CV8 2TL Tel: 0247 647 8829

Ram: Derek

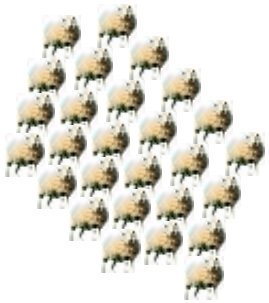


Flock A

Flock B

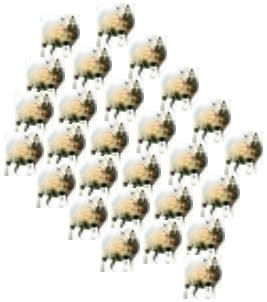


Ram: Derek

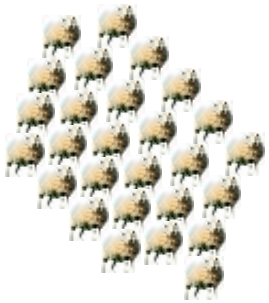


Flock A

Flock B

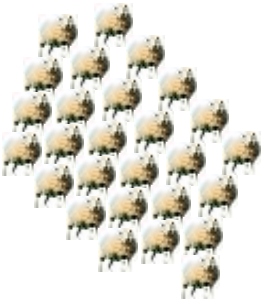


Ram: Derek

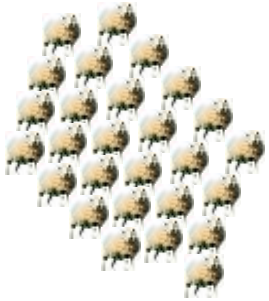


Flock A

Flock B

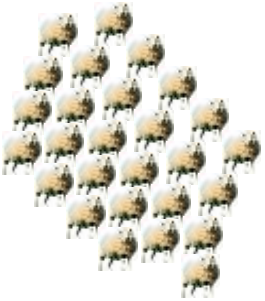


Ram: Derek



Flock A

Flock B



Average 8ww of progeny

Ram: Roger

Ram: Keith

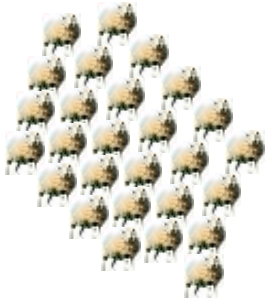
Flock A

Flock B

The European Agricultural Fund for Rural Development: Europe investing in rural areas

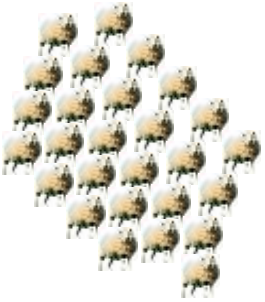
AHDB BEEF & LAMB

Ram: Derek



Flock A

Flock B



Average 8ww of progeny

Ram: Roger

Ram: Trevor

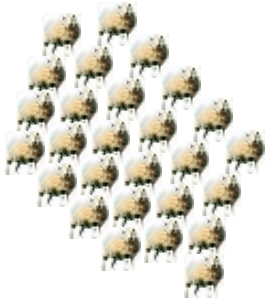
Ram: Keith

Ram: Winston

Flock A

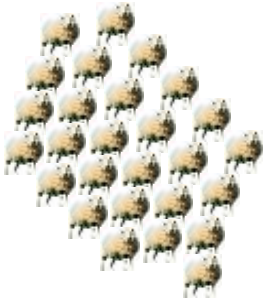
Flock B

Ram: Derek



Flock A

Flock B



Average 8ww of progeny

Ram: Roger

Ram: Trevor

Ram: Keith

Ram: Winston

Flock A

Flock B

The European Agricultural Fund for Rural Development: Europe investing in rural areas

AHDB BEEF & LAMB

Ram: Derek

Flock A

Flock B

Average 8ww of progeny

Ram: Roger

Ram: Trevor

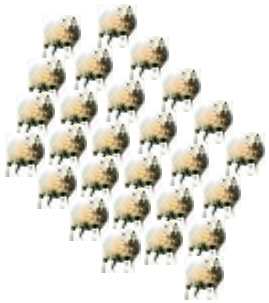
Ram: Keith

Ram: Winston

Flock A

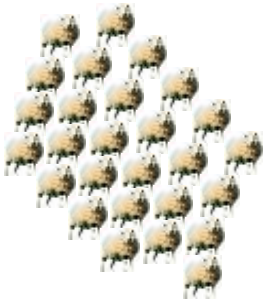
Flock B

Ram: Derek



Flock A

Flock B



Average 8ww of progeny

Ram: Trevor

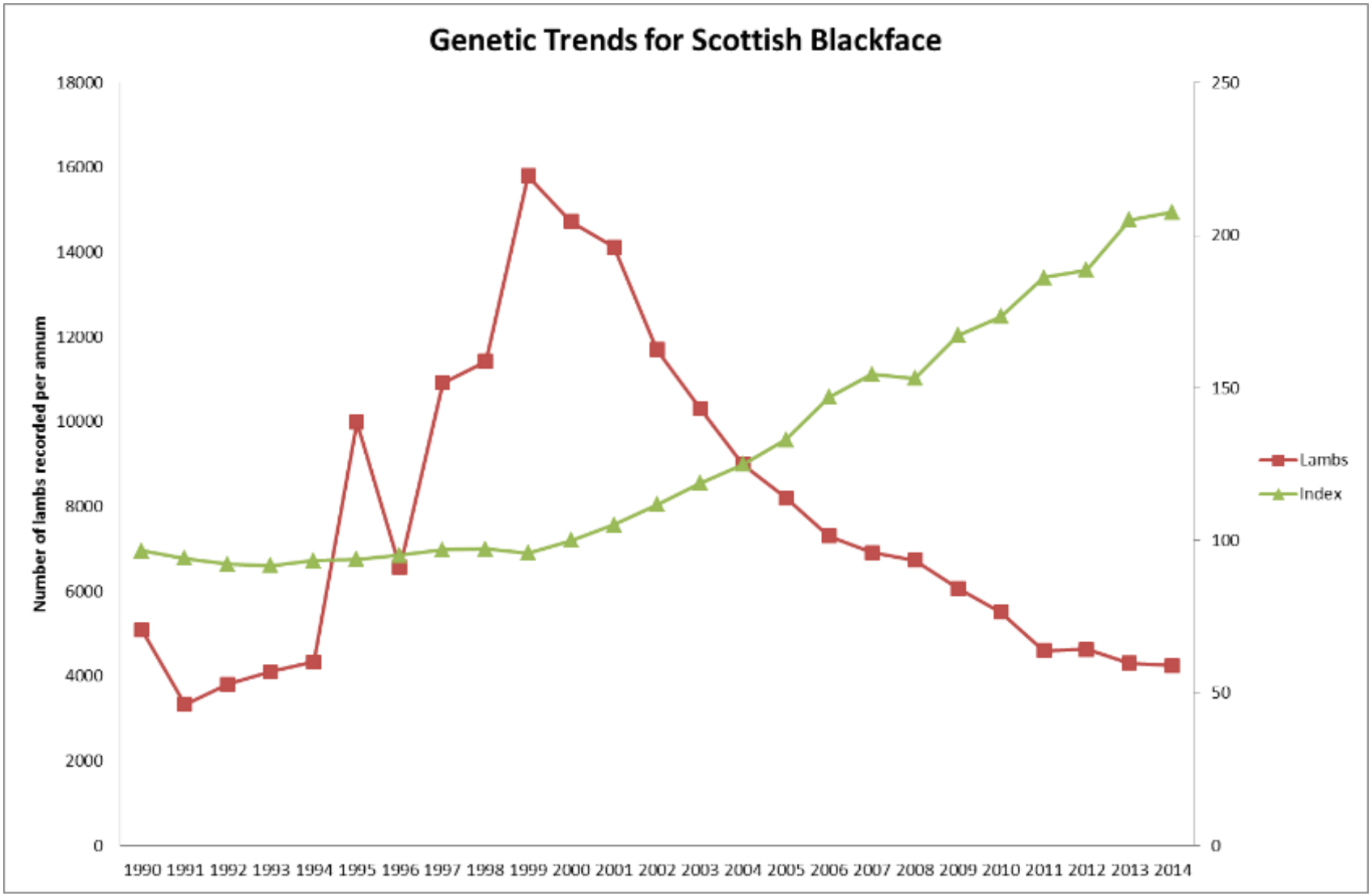
Ram: Roger

Ram: Winston

Ram: Keith

Flock A

Flock B



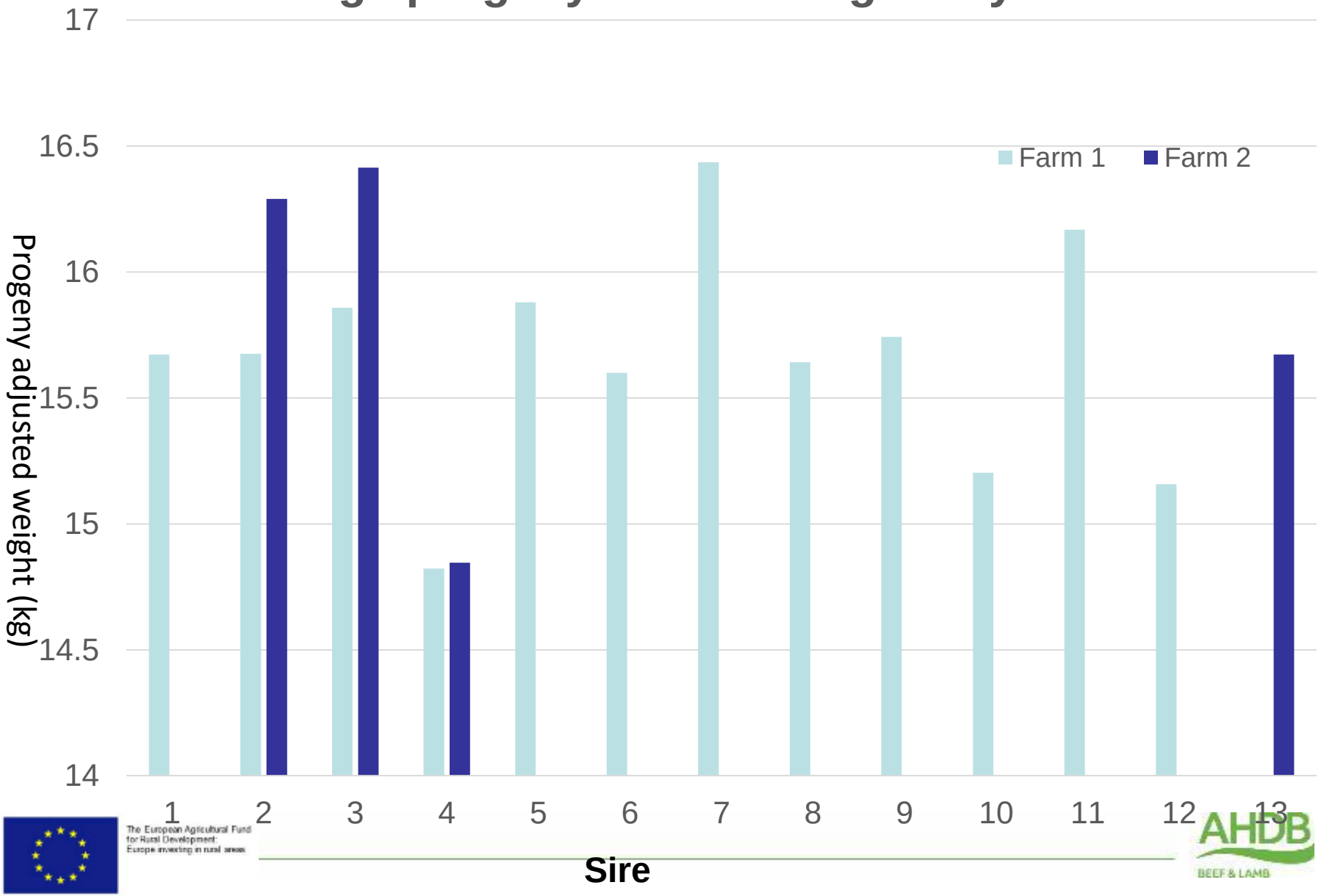
The European Agricultural Fund for Rural Development: Europe investing in rural areas

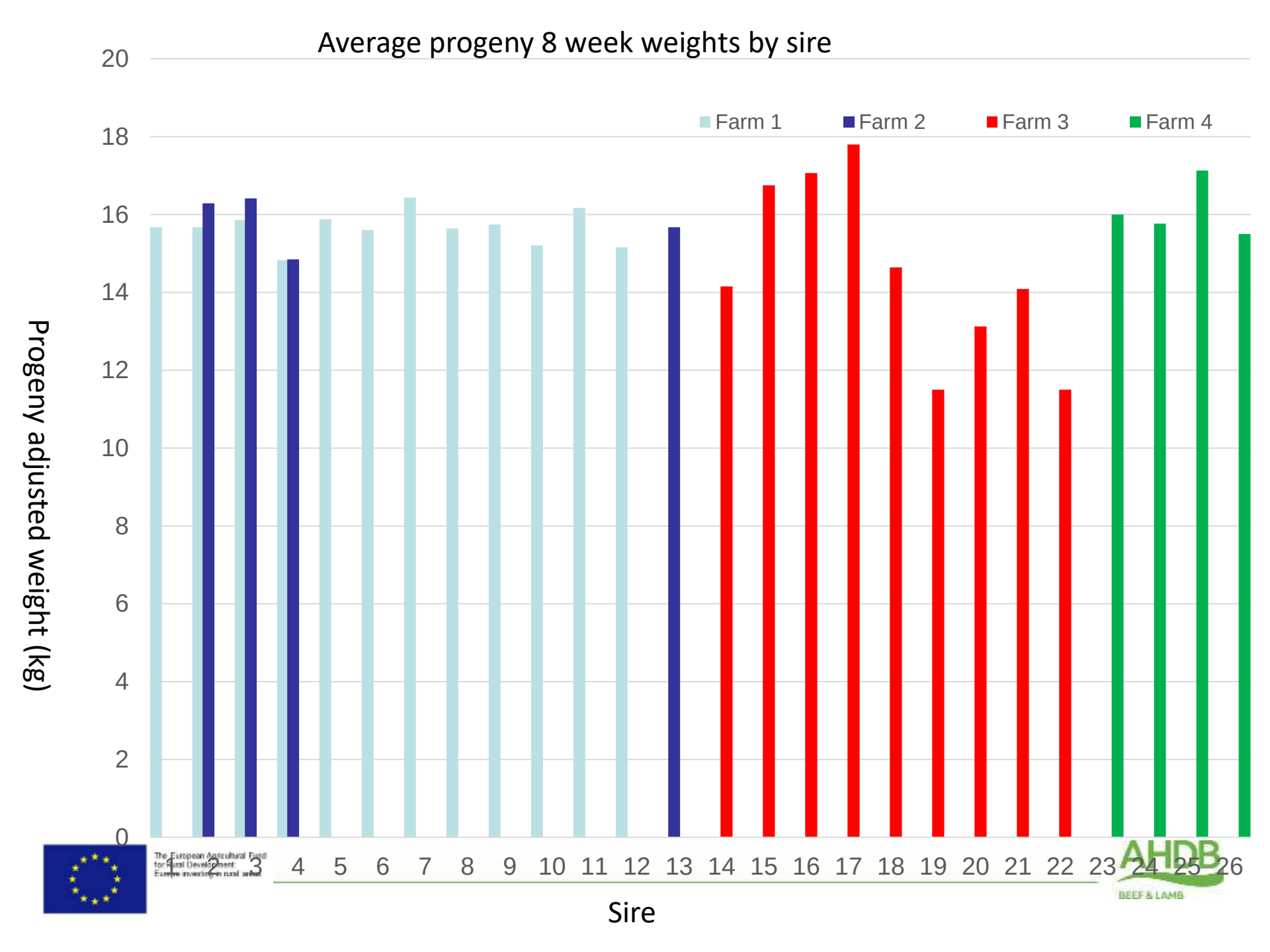
AHDB BEEF & LAMB

Analysis to date…

Farm	Sire identity	Progeny nos.	Index
Birk Nab	UK 0 [redacted] 894	45	99.79
	UK 0 [redacted] 571	88	211.37
	UK 0 [redacted] 217	98	103.20
	UK 0 [redacted] 125	42	130.57
	UK 0 [redacted] 126	105	260.30
	UK 0 [redacted] 481	81	-25.90
	UK 0 [redacted] 320	56	110.01
	UK 0 [redacted] 280	93	140.05
	UK 0 [redacted] 684	31	108.47
	UK 0 [redacted] 915	14	-9.92
	UK 0 [redacted] 795	13	78.31
Breck House	UK 0 [redacted] 872	40	101.33
	UK 0 [redacted] 571	12	211.37
	UK 0 [redacted] 126	12	260.30
	UK 0 [redacted] 795	35	78.31
Hall Farm	[redacted]	26	70.32
	[redacted]	46	102.96
Hunt House Farm	UK 0 [redacted] 491	86	98.18
	UK 0 [redacted] 599	20	73.97
	UK 0 [redacted] 065	16	116.56

Average progeny 8 week weights by sire




Average progeny 8 week weights by sire
Farm 1
Farm 2
Farm 3
Farm 4
Progeny adjusted weight (kg)
0
2
4
6
8
10
12
14
16
18
20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Sire
The European Agricultural Fund for Rural Development: Europe investing in rural areas
AHDB
BEEF & LAMB

Summary

- Recording provides a good way to assess economically important traits
  - Electronic systems may make life easier
- Recording needs to start with a group of likeminded breeders working together

Health protocols to reduce risks of spreading disease

Kate Phillips

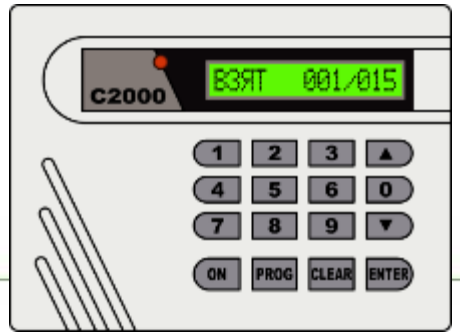
The European Agricultural Fund for Rural Development: Europe investing in rural areas

AHDB BEEF & LAMB

Group members to share rams

- To see how different rams perform on different farms and to gather further data on progeny
- Some risks in this approach

- Biosecurity -

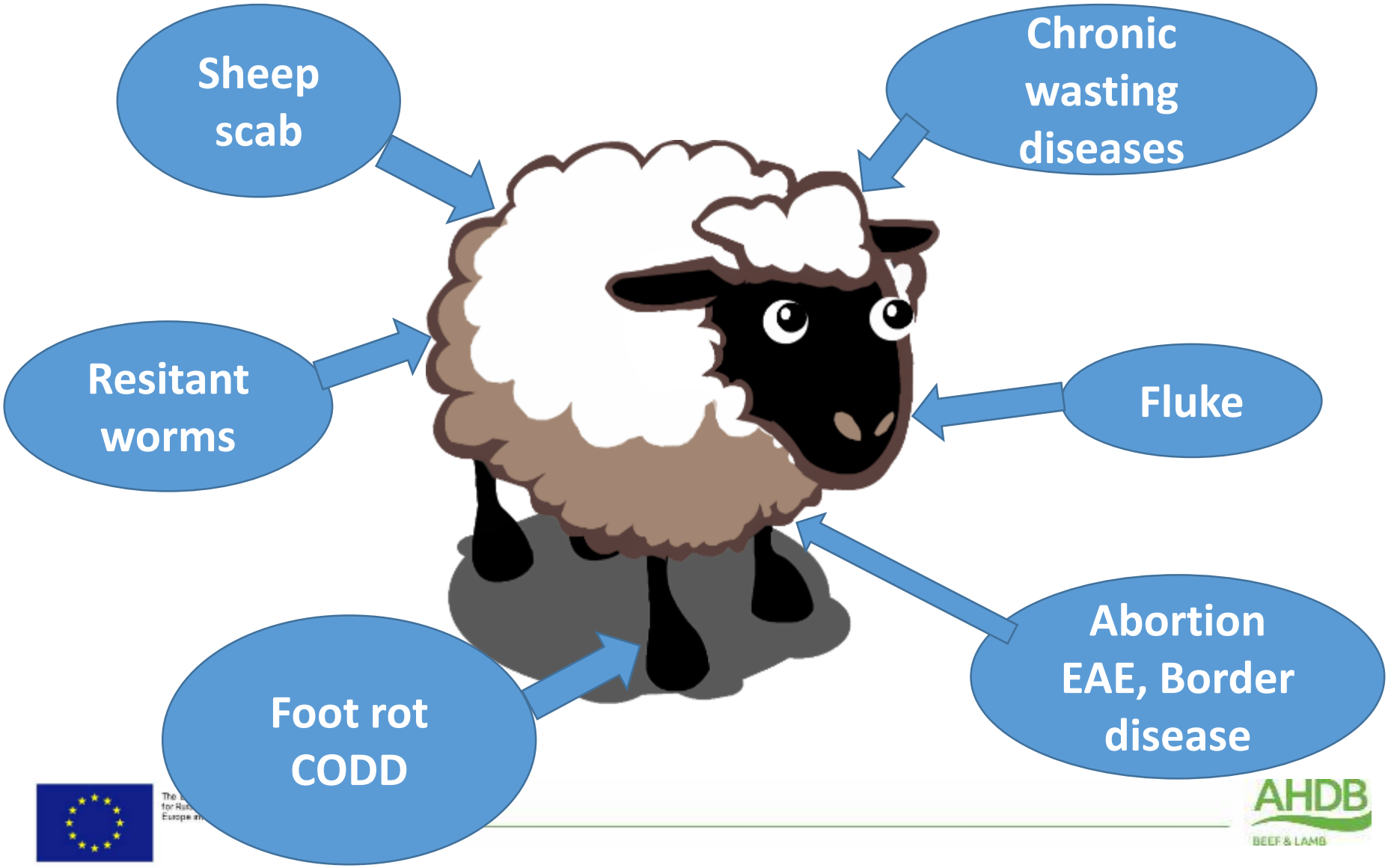


Key principles of biosecurity

- Aim to avoid importing disease
- Aim to contain disease when it occurs
- Use quarantine and a comprehensive treatment/prevention programme when bringing in new sheep
- Test sheep where possible

High risk?

The European Agricultural Fund for Rural Development: Europe investing in rural areas


Sheep scab
Chronic wasting diseases
Resitant worms
Fluke
Foot rot CODD
Abortion EAE, Border disease

What are the key risks when sharing sheep?

- **Parasites**
  - Scab
  - Round worms
  - Liver fluke
- **Infectious diseases**
  - Foot rot, CODD
  - Enzootic abortion
  - Border disease

Chronic wasting diseases

- **Maedi visna** – in 2010 a survey of 726 flocks showed MV to be present in 2.8% of flocks
- **OPA** – ovine pulmonary adenocarcinoma (or Jaagsiekte) – 8% of diagnosable conditions (VIDA 2015). Lung scanning
- **CLA** – Caseous lymphadenitis - mainly abscesses in superficial lymph nodes

- **Screen thin ewes post-weaning**

Which diseases are present on farm?

- Round worms and fluke
- Sheep scab?

- No knowledge of MV and Border disease

Planned protocol

- Test rams for Border disease and Maedi visna one month before sending to other farm
- Check feet – vaccinate with Footvax?
- Give rams a full MOT

Better Returns Programme

Ram MOT

how to check your rams

Toes

Check his locomotion, arthritis and feet

Teeth

Check for under or over shot teeth, gaps and molar abscesses

Testicles

Measure and check firmness (flexed bicep) with no lumps or bumps

Tone

Aim for body condition between 3.5-4.0 (spine well covered)

Treat

Vaccinations (Clostridia, Pasteurella, Louping Ill),
Parasites, Lameness, Shearing?

Consult your vet for a thorough examination.

The European Agricultural Fund for Rural Development: Europe investing in rural areas

AHDB BEEF & LAMB

Movement protocol

- One week before moving treat with Cydectin 2% to protect against scab (60 days)
- Dose with Zolvix (4-AD) on leaving the farm and hold on new farm for 48 hours inside before letting out to grass
- Dose with triclabendazole for fluke
- Foot bath for footrot and CODD
- Repeat physical examination on return, worm and foot bath

Four farms

- Farm 1 – AF – tupping 5 November
- Farm 2 – MG – tupping 11 November
- Farm 3 – BW – tupping 1 December
- Farm 4 – TD – tupping 5 December

- Detailed calendar for each farmer depending on which rams move where

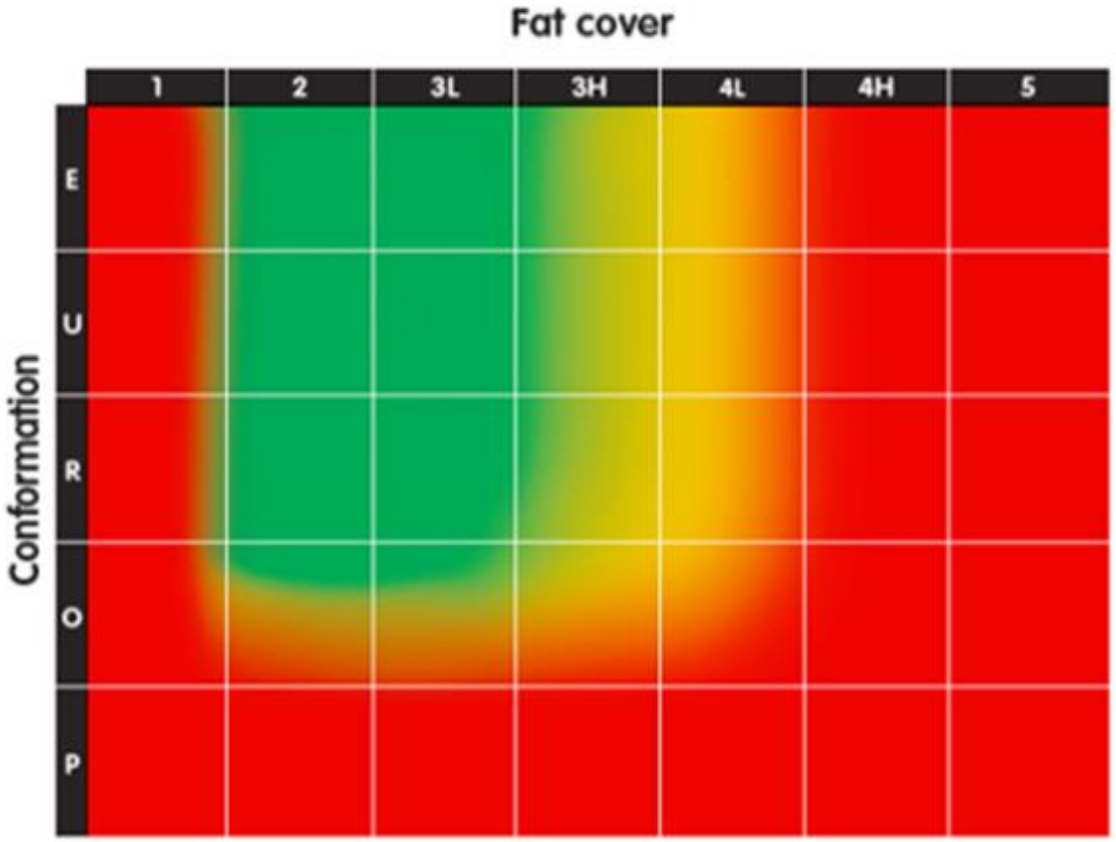
Lamb finishing

- Interested in how wether/ram lambs perform to finishing
- Lambs weaned at 16 to 20 weeks
- Weigh lambs at start and sort by size
- Vaccinate for clostridial diseases and pasteurella
- Faecal egg counts – worm as necessary with effective product
- Check trace element status – 8 lambs per farm to be tested for Co and Se (possibly Cu)

Lamb finishing

- If indoors – consider shearing – lambs eat more and can finish faster
- Ram lambs grow faster but move them on quickly and do not ‘store’ them as will take even longer to finish
- Ideally finish ram lambs by 8 months of age
- Aiming for 16 to 19 kg DW, O and R 2 and 3L

EUROP Grid - Lamb



The European Agricultural Fund for Rural Development: Europe investing in rural areas

AHDB
BEEF & LAMB

Lamb finishing options

- Grass – quality and quantity?
- Grass plus supplements
- Root crops – stubble turnips/rape/kale
- Silage + concentrates
- Ad-lib concentrates

Feed costs

- Grazed grass – 6 p/kg DM
- Root crops – 6 to 8p/kgDM
- Good grass silage – 12 p/kg DM
- Barley – 13.5 p/kg DM
- Compound feed – 27 p/kg DM

- Make best use of cheapest feeds – forage
- Feed the rumen for optimum fermentation

Relative feed values

Feeds compared to barley @£130/t and rapeseed meal @£200/t

Feed	DM	ME	CP	Feed value £/t
Wheat	86	13.8	13	138
Beet pulp	88	12.5	11	127
Beans	86	14.0	29	191
Fodder beet	18	12.5	7	23

Sampling silage

Silage for sheep

	Benchmark
Dry matter %	>25
D value	>65
ME (MJ/kgDM)	>10.5
Crude protein %	>12
pH	>4.0
Ammonia as % total N	<10

Silage and fodder beet

- Fodder beet – high sugar crop – effectively a wet concentrate but:

1kg barley = 4.8 kg FB

Compound feed selection

- Consider size of lambs and speed of finishing
- Small framed lambs will need more protein than larger lambs
- Check ingredients – not too much fibre or starch
- Introduce concentrates gradually to avoid acidosis

Compound ingredients

Declaration

Moisture - 12%

Protein - 18%

Ash - 7%

Oil - 4.5 %

Crude fibre - 8.9%

Barley	**(17%)**
Sugar beet pulp	**(16%)**
Wheat distillers grains	**(12%)**
Wheatfeed	**(13%)**
Field beans	**(9%)**
Palm kernel expeller	**(8%)**
Hi-pro soya (48)	**(6%)**
Wheat	**(5%)**
Rapeseed meal	**(5%)**
Molasses	**(4%)**
Minerals etc	

Effect of concentrate price and FCE on margin per lamb - £2.00/kg LW

		FCE (kg concs:kg gain)					
		5:1	6:1	7:1	8:1	9:1	10:1
Conc cost £/t	180	9.70	7.54	5.38	3.22	1.06	-1.10
	220	7.30	4.66	2.02	-0.62	-3.26	-5.90

Assumes 12 kg gain and £3.50 additional costs

Concentrate feeding

3in1 feeders limit the amount of concentrate

Lamb finishing this season

- Big bale silage plus concentrates
- Silage plus fodder beet (and protein concentrate if needed)
- Off farm – on large store lamb finishing unit