BETTERRETURNS

Flock notebook

AHDB

BEEF & LAMB

Why collect data

Do you know how your animals are performing and your costs of production? Collecting records and then analysing them is the best way to understand how your business is performing.

Once you know what your business has been achieving, it is easier to set goals. When setting goals, involve others who work in the business. This means that everyone feels part of the decision-making process and are committed to the cause of achieving improvements.

Five key performance indicators (KPIs) for assessing flock efficiency have been identified:

Record	Definition	Example
Scanning percentage per ewe scanned (%)	(Number of lambs scanned in the ewes ÷ Number of ewes put to the ram) x 100	(1070 ÷ 600) x 100 = 178%
Lambs reared per 100 ewes to ram	(Overall total of lambs reared ÷ Number of ewes put to the ram) x 100	(930 ÷ 600) x 100 = 155
Average daily liveweight gain to weaning (kg/day)	(Average lamb weaning weight - 4) ÷ Average age at weaning*	(31 - 4) ÷ 102 = 0.26kg/day
Lamb losses: scanning to rearing (% of lambs scanned)	((Number of lambs scanned in the ewes - Overall total of lambs reared) ÷ Number of lambs scanned in the ewes) x 100	((1070 - 930) ÷ 1070) x 100 = 13.1%
Weight of lamb reared per ewe to ram (kg)	Total weight of lamb reared ÷ Number of ewes put to the ram	37,300 ÷ 600 = 62.2kg

*Lamb birth weight is estimated at 4kg. Use the actual age if known or use the average age calculated from 10 days from start of lambing

For information on how analysing and benchmarking can help you, visit the AHDB Farmbench website at **farmbench.ahdb.org.uk**

Mating records

Group					Total
Number of females put to the ram [**A**]					
Number of rams used [**B**]					
Average ewe weight (kg) at tupping (weigh approx. 10–20% of the group)					
Date rams in [**C**]					
Date rams out [**D**]					
Ewe to ram ratio (ewes per ram) [**A**÷**B**]					
Mating period (days) [**D**–**C**]					

Stock ram info

ID/Ear tag	Year of birth	Breed	Ram MOT results	EBV Index	Notes

Scanning results – Ideally scan ewes 40–90 days post-tupping

Group					Total
Number of females put to the ram [**A**]					
Scanning date					
Number of empty ewes [**B**]					
Number of singles [**C**]					
Number of twins [**D**]					
Number of triplets [**E**]					
Number of quads [**F**]					
Total number of lambs [**G**] = ((**C**x1)+(**D**x2)+(**E**x3)+(**F**x4))					
Scanning % (**G**÷**A**) x 100					
% Empty ewes at scanning (**B**÷**A**) x 100					

Lambing records – Note in the comments box if the scanning result was different from number of lambs born

Date	Ewe ID	No. lambs born alive	Comments

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Lambing records – Note in the comments box if the scanning result was different from number of lambs born

Date	Ewe ID	No. lambs born alive	Comments

Date	Ewe ID	No. lambs born alive	Comments

Lamb losses around lambing (keep a simple tally of losses)

					5					10					15					20
Found dead																				
Hypothermia																				

Lambing summary

Group				Total
Number of females put to the ram [**A**]				
Scanning percentage (%) [**B**]				
Number of females lambed				
Date of first lamb [**C**]				
Date of last lamb [**D**]				
Number of singles born alive [**E**]				
Number of twins born alive [**F**]				
Number of triplets born alive [**G**]				
Number of quads born alive [**H**]				
Total number of lambs born alive [**I**] = (**E**x1)+(**F**x2)+(**G**x3)+(**H**x4)				
Total number of lambs turned out or tailed [**J**]				
Lambing period (days) (**D**-**C**)				
Lambs born alive per 100 females to ram (lambing percentage) [**K**] = (**I**÷**A**) x 100				
Lambs turned out per 100 females to ram (**J**÷**A**) x 100				
Lamb losses from born alive to turnout or tailed ((**I**-**J**)÷**I**)) x 100				

Body condition scoring

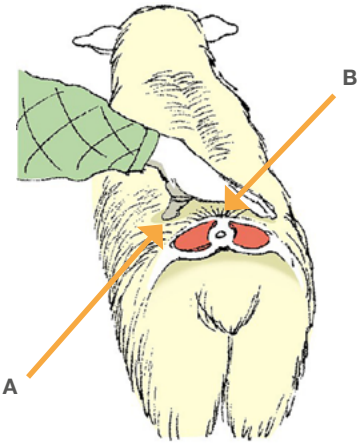
Body condition scoring (BCS) is a technique used for assessing the energy reserves of livestock at regular intervals.

It uses a scale from 1 (very thin) to 5 (very fat).

At least 90% of the flock should be at target BCS to optimise performance of the flock.

Target body condition scores

	Hill ewes	Upland ewes	Lowland ewes
At tupping	2.5	3.0	3.5
At lambing	2.0	2.5	3.0
Eight weeks post-lambing	2.0	2.0-2.5	2.5-3.0
At weaning	2.0	2.0	2.5



A – Transverse processes

B – Spinous processes

Body condition scoring

Score	Description
1	**Spinous processes** – prominent and sharp. **Transverse processes** – prominent and sharp, fingers can be pushed easily below the transverse bone and each process can be felt. **Loin** – thin with no fat cover.
2	**Spinous processes** – prominent but smooth, individual processes felt only as corrugations. **Transverse processes** – smooth and rounded, but still possible to press fingers underneath. **Loin** – a moderate depth but little fat cover.
3	**Spinous processes** – smooth and rounded; the bone is only felt with pressure. **Transverse processes** – smooth and well-covered, ends can only be felt with hard pressure. **Loin** – full and with moderate fat cover.
4	**Spinous processes** – only detectable as a line. **Transverse processes** – ends of the transverse processes cannot be felt. **Loin** – full, rounded and have a thick covering of fat.
5	**Spinous processes** – cannot be detected even with pressure. **Transverse processes** – cannot be detected even with pressure. **Loin** – very full and covered with very thick fat.

Body condition scoring ewes at lambing

Record the body condition score (BCS) of each sheep with an X on the chart below.
The scores towards the centre of the range of Xs will be close to the average.

Body Condition Score								
1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Very lean

Very fat

Body condition scoring ewes at eight weeks post-lambing

Record the body condition score (BCS) of each sheep with an X on the chart below.
The scores towards the centre of the range of Xs will be close to the average.

Body Condition Score								
1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Very lean

Very fat

Body condition scoring ewes at weaning

Record the body condition score (BCS) of each sheep with an X on the chart below.
The scores towards the centre of the range of Xs will be close to the average.

Body Condition Score								
1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Very lean

Very fat

Body condition scoring ewes at tupping

Record the body condition score (BCS) of each sheep with an X on the chart below.
The scores towards the centre of the range of Xs will be close to the average.

Body Condition Score								
1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Very lean

Very fat

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Eight-week weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Weaning weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Weaning weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Weaning weights

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Lamb weight record – Weaning weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb weight record – Weaning weights

Date:

Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)	Lamb ID	Weight (kg)

Lamb losses post-turnout

Date	ID	Reason	Disposal costs (£)	Notes

Losses – Ewes and rams

Date	ID	Ewes		Rams	Disposal costs (£)	Notes
		Reason	In lamb?	Reason		

Lamb sales – Batches

Date	Quantity sold	Outlet	Weight (kg)	Price (£)	Store or finished?	Transport costs (£)
Total						

Lamb sales – Batches

Date	Quantity sold	Outlet	Weight (kg)	Price (£)	Store or finished?	Transport costs (£)
Total						

*Ram and ewe lambs **retained** for breeding:*

Date	Number	Weight (kg)	Value	Notes

*Ram and ewe lambs **sold** for breeding:*

Date	Number	Weight (kg)	Value	Notes

Store lamb purchases

Date	Number	Seller	Weight (kg)	Price (£)	Notes

Ewe and ram purchases or sales

Date	Stock type	Seller/Outlet	Weight (kg)	Price (£)	Notes

Wool sales

Date	Type	Weight (kg)	Price (£)	Notes

Sheep records for Better Returns

		Flock 1	*Flock 2*
Tupping	**Number of ewes put to the ram** *(Ewe lambs should be recorded as separate flock)*		
	Number of rams used		
	Number of lambs scanned in the ewes		
	Number of empty ewes at scanning		
Lambing	**Number of lambs born alive** *(Up to 12 hours of age)*		
	Number of lambs turned out or tailed *(Approximately 48 hours)*		
	Number of empty ewes at lambing		
Weaning	**Number of lambs weaned** *(Include lambs sold before weaning)*		
	Average age at weaning (days) *(From 10 days from the start of lambing)*		
	Average lamb weaning weight (kg) *(Include lambs sold before weaning)*		
	Average lamb weighing date (dd/mm/yy)		

		Flock 1	*Flock 2*
Replacements	**Total number of breeding ewe deaths**		
	Total number of culled ewes		
	Number of replacements bought or transferred into the breeding flock		

Sales	**Total number of lambs sold finished**		
	Total number of store lambs sold		
	Total number of breeding ewe lambs sold		
	Total number of lambs retained as replacements or stores		
	Overall total number of lambs reared *(Include finished and store lambs and retained replacements)*		
	Average sale weight (kg liveweight) *(Include finished lambs, store lambs and retained replacements)*		

Grassland costs – Grazed grass costs, eg fertiliser, weed control, etc

Date	Field	Area	Product	Application rate	Cost (£)

Growing forage costs

Crop	Area cut	Total fertiliser cost (£)	Total spray cost (£)	Total seed cost (£)

Forage records – Home-produced

Crop	Area cut	Total fresh weight produced (tonnes)	Clamp or bales?	Total wrap and net costs (£)

Forage records – Bought-in (including bedding straw)

Date	Type	Quantity	Cost (£)

Understanding forage analysis

D-value

A measure of feed digestibility

The higher the D-value, the less concentrates are required for ewes pre-lambing.

	GOOD	POOR
Hay	60	50
Silage	70	58

Dry Matter (DM%)

A measure of what is 'not' water

If silage is too wet (less than 25% DM), it is difficult for pregnant ewes to eat enough to meet their needs.
If this is the case, the amount of concentrate required will be higher.

	GOOD	POOR
Hay	86%	80%
Clamp silage	> 25%	< 22%
Bale silage	> 30%	< 22%

Crude protein (CP%)

A measure of the protein content

It is important to provide enough protein in supplementary feeds to make up any protein deficit in the forage.

	GOOD	POOR
Hay	> 12%	< 9%
Silage	> 14%	< 10%

Metabolisable Energy (ME MJ/kg DM)

A measure of the usable energy available to the animal

When buying a supplement make sure the ME is higher than that of the forage.

	GOOD	POOR
Hay	10	< 8
Silage	11	< 10

Total Fermentation Acids

A measure of total acid content

High levels of acids limit intake.
Aim for levels < 100g/kg DM.

pH

A measure of acidity in silage

Target pH will vary depending on DM% of silage. Generally, less than 3 or higher than 5 suggests poor fermentation and lower palatability.

	GOOD	POOR
Silage	> 4.0	< 3 or > 5

Ash (%)

A measure of mineral and trace element content

Forage has a natural level of ash, but levels over 10% in silage indicate soil contamination and poor fermentation and should not be fed to sheep.

Ammonia N

A measure of protein breakdown during the ensiling process

Levels greater than 10% indicate protein breakdown and a poor fermentation.

Feed records

Delivery date	Product	Quantity	Cost (£)	Supplier

Feeding – Feed value tables

Forages	Dry matter (%)	Crude protein (% DM)	Metabolisable energy (MJ/kg DM)
Average grass silage	20–30	10–15	10.2
Good grass silage	23–33	10–18	10.7
Straw (barley)	87.0	4.0	6.5
Maize silage	25–35	9.0	10.8
White clover (grazed)	20.0	19.0	11.2
Fodder beet	12–19	6–8	12–12.5
Kale	15–17	14–17	10–11
Grazed grass	17–18	15–17	10.5–11.5
Cereals/Legumes	**Dry matter (%)**	**Crude protein (% DM)**	**Metabolisable energy (MJ/kg DM)**
Barley	86.0	12.1	13.2
Wheat	86.0	12.8	13.8
Oats	86.0	11.0	12.0
Field beans	86.0	29.0	13.8
Field peas	86.0	24.0	12.8
Lupins	86.0	38.0	14.3

Straights/others	Dry matter (%)	Crude protein (% DM)	Metabolisable energy (MJ/kg DM)
Molassed sugar beet feed	89.0	10.0	12.5
Rapeseed meal	88.0	38.5	12.1
Soya bean meal (hi-pro)	88.0	52.0	13.8
Soya bean meal (lo-pro)	88.0	47.0	12.9
Maize gluten feed	89.0	21.7	12.5
Wheat feed	89.0	17.3	11.5
Wheat distillers' dark grains*	89.0	32.0	13.5
Distillers' barley*	89.0	26.0	12.7
Brewers' grains*	23.0	24.0	11.7
Citrus pulp feed	89.0	7.0	12.5
Potatoes	20.5	11.0	13.5
Molasses (beet) pulp	89.0	10.0	12.5
Molasses (cane)	75.0	6.0	12.6

*Check copper values

Diet formulations

Batch	Date	Ingredients	Dry Matter (DM) (%)	ME (MJ/kg DM)	Crude protein (CP) (%)	Cost (£)	Amount fed per day	Number of days

Medicine purchase and sundry records

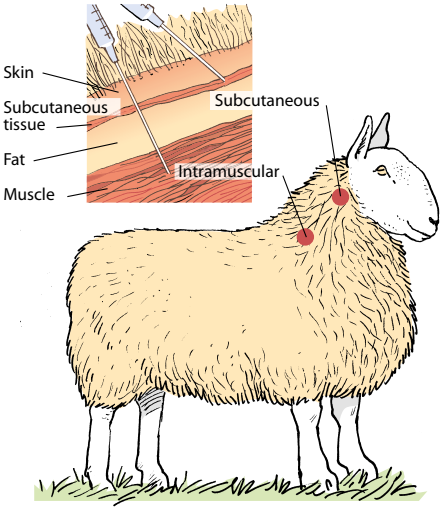
Date of purchase	Product	Medicine batch/bottle number	Quantity	Price (£)	Expiry date	Withdrawal period	Supplier

Medicine purchase and sundry records

Date of purchase	Product	Medicine batch/bottle number	Quantity	Price (£)	Expiry date	Withdrawal period	Supplier

Administering medicines – good practice

Injectable medicines may be designed for subcutaneous (under the skin) or intramuscular (into the muscle) administration. Others may be given by mouth as a drench.



It is essential that the weigh crate is accurate, the dosing gun delivers a precise dose and the product chosen is suitable for the purpose.

Medicine records

Name of veterinary medicine	Medicine batch/bottle number	Treatment date*	Identity of animal/ group	Number treated	Length of withdrawal period	Date withdrawal period ends**	Total quantity of medicine used	Name of person administering	Reason for treatment

Medicine records

Name of veterinary medicine	Medicine batch/bottle number	Treatment date*	Identity of animal/ group	Number treated	Length of withdrawal period	Date withdrawal period ends**	Total quantity of medicine used	Name of person administering	Reason for treatment

*Start and end date if multiple treatments
**From date of final treatment

Field movements

Date	Field	Notes (movements: stock in/out)	Grass height in (cm or kg DM/ha)	Grass height out (cm or kg DM/ha)

Field movements

Date	Field	Notes (movements: stock in/out)	Grass height in (cm or kg DM/ha)	Grass height out (cm or kg DM/ha)

Tag notes – Replacement details

Old tag	New tag

Old tag	New tag

Routine management jobs – Footcare, shearing, dipping, weaning, scanning, housing

Ewes/Rams/Lambs	Procedure	Method & Product	Performed by & date

Conversions

To convert	Multiply by	To convert	Multiply by
Length			
Inches to centimetres	2.5400	Centimetres to inches	0.3937
Feet to metres	0.3048	Metres to feet	3.2810
Yards to metres	0.9144	Metres to yards	1.0940
Miles to kilometres	1.6090	Kilometres to miles	0.6214
Area			
Sq inches to sq cms	6.4520	Sq cms to sq inches	0.1550
Sq feet to sq metres	0.0929	Sq metres to sq feet	10.7600
Sq yards to sq metres	0.8361	Sq metres to sq yards	1.1960
Acres to hectares	0.4047	Hectares to acres	2.4710
Volume			
Cu feet to cu metres	0.0283	Cu metres to cu feet	35.3100
Cu yards to cu metres	0.7646	Cu metres to cu yards	1.3080
Gallons to litres	4.5460	Litres to gallons	0.2200
Pints to litres	0.5680	Litres to pints	1.7598

To convert	Multiply by	To convert	Multiply by
Weight/Fuel consumption/Speed			
Ounces to grams	28.3500	Grams to ounces	0.0353
Pounds to kg	0.4536	Kg to pounds	2.2050
Hundredweight to kg	50.8023	–	–
Gallons per mile to litres per km	2.8250	Litres per km to gallons per mile	0.3540
Miles per hour to km per hour	1.6093	Km per hour to miles per hour	0.6214

Temperature conversion scales

To convert °F to °C, deduct 32 and multiply by 5, then divide by 9

To convert °C to °F, multiply by 9, then divide by 5, then add 32

Breeding table – Use this at-a-glance guide to calculate lambing dates

Tupping	Lambing	Tupping	Lambing	Tupping	Lambing
JULY 1	**NOV** 25	**JULY** 28	**DEC** 22	**AUG** 24	**JAN**18
2	26	29	23	25	19
3	27	30	24	26	20
4	28	31	25	27	21
5	29	**AUG** 1	26	28	22
6	30	2	27	29	23
7	**DEC** 1	3	28	30	24
8	2	4	29	31	25
9	3	5	30	**SEP** 1	26
10	4	6	31	2	27
11	5	7	**JAN** 1	3	28
12	6	8	2	4	29
13	7	9	3	5	30
14	8	10	4	6	31
15	9	11	5	7	**FEB** 1
16	10	12	6	8	2
17	11	13	7	9	3
18	12	14	8	10	4
19	13	15	9	11	5
20	14	16	10	12	6
21	15	17	11	13	7
22	16	18	12	14	8
23	17	19	13	15	9
24	18	20	14	16	10
25	19	21	15	17	11
26	20	22	16	18	12
27	21	23	17	19	13

Tupping	Lambing	Tupping	Lambing	Tupping	Lambing
SEP 20	**FEB** 14	**OCT** 17	**MAR** 13	**NOV**13	**APR** 9
21	15	18	14	14	10
22	16	19	15	15	11
23	17	20	16	16	12
24	18	21	17	17	13
25	19	22	18	18	14
26	20	23	19	19	15
27	21	24	20	20	16
28	22	25	21	21	17
29	23	26	22	22	18
30	24	27	23	23	19
OCT 1	25	28	24	24	20
2	26	29	25	25	21
3	27	30	26	26	22
4	28	31	27	27	23
5	**MAR** 1	**NOV** 1	28	28	24
6	2	2	29	29	25
7	3	3	30	30	26
8	4	4	31	**DEC** 1	27
9	5	5	**APR** 1	2	28
10	6	6	2	3	29
11	7	7	3	4	30
12	8	8	4	6	**MAY** 1
13	9	9	5	7	2
14	10	10	6	8	3
15	11	11	7	9	4
16	12	12	8	10	5

Notes

Notes

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