Herd notebook

Contents

Glossary

AI	Artificial insemination
BCS	Body condition score
DM	Dry matter
KO%	Killing out percentage
LW	Live weight
ME	Metabolisable energy
PD	Pregnancy diagnosis
PIs	Persistently infected

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.

With this information, 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, understands what's going on and is committed to the cause of achieving improvements.

Farmbench is an online benchmarking tool that allows you to compare your farm to similar businesses. It helps you to identify where you can improve efficiency and increase profits.

To find out more, visit **ahdb.org.uk/farmbench**

Key performance indicators

The following points have been identified as the key performance indicators (KPIs) for assessing herd efficiency.

Record	Definition	Target
Age at first calving	Total age of all first time calvers at point of calving divided by total number of first time calvers	24 months
Cows/heifers calved in first six weeks	Number of cows and heifers calved in the first six weeks as a percentage of the total number of cows and heifers put to the bull	>70%
Herd replacement rate	The number of females needed to replace those leaving and maintain herd size	14–16%
Calves alive 24 hours after birth	Number of calves alive 24 hours after birth as a percentage of cows and heifers put to the bull	95–105%
Calves weaned	Number of calves weaned (including calves sold before weaning) as a percentage of cows/heifers put to the bull	>94%
Daily live weight gain – weaned calves	Average weight gained from birth to weaning divided by average age at weaning	1.2–1.6 kg/day
Herd efficiency	Total 200-day liveweight of calves weaned as a percentage of the total weight of breeding cows/heifers that were put to the bull	46–60%

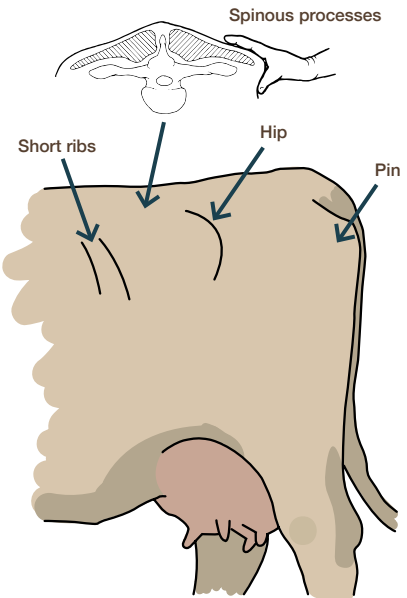
Body condition scoring

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.

Condition scoring provides a guide to the nutritional status of the animal and should be used to adapt feeding strategies to ensure that cows are in the correct condition for each stage of their production cycle.

BCS targets for suckler cows

	Spring calving	Autumn calving
Calving	2.5–3.0	3.0
Service	2.5	2.5
Housing	3.0–3.5	2.5–3.0



Body condition scoring

Score	Description
1	**Tail head** – deep cavity with no fatty tissue under skin. Skin fairly supple, coat condition often rough **Loin** – spine prominent and horizontal processes sharp **Ribs** – sharp with no fat cover
2	**Tail head** – shallow cavity but pin bones prominent; some fat under skin. Skin supple **Loin** – horizontal processes can be identified individually with ends rounded **Ribs** – can be identified individually but feel rounded rather than sharp
3	**Tail head** – fat cover over whole area and skin smooth but pelvis can be felt, only with firm pressure **Loin** – end of horizontal process can be felt only with pressure; only slight depression in loin **Ribs** – individual ribs can be felt only with firm pressure
4	**Tail head** – completely filled, and folds and patches of fat evident **Loin** – cannot feel processes and will have completely rounded appearance **Ribs** – folds of fat developing over ribs
5	**Tail head** – almost buried in fatty tissue **Loin** – pelvis impalpable even with firm pressure **Ribs** – covered with thick layer of fat

Body condition scoring

Ear tag	BCS at calving	BCS at service	BCS at housing

It is advisable to record a date when body condition scoring in order to track changes.

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Bulls used

Breed	Name	Ear tag	Notes (AI code/sexed/conventional)

Natural services and PDs

Use this table to record the cows/heifers that have been served naturally by the bull.

Ear tag	Date calved	Bull	Bull in date	Bull out date	PD+	Due date	Notes

Natural services and PDs

Ear tag	Date calved	Bull	Bull in date	Bull out date	PD+	Due date	Notes

Natural services and PDs

Ear tag	Date calved	Bull	Bull in date	Bull out date	PD+	Due date	Notes

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Natural services and PDs

Ear tag	Date calved	Bull	Bull in date	Bull out date	PD+	Due date	Notes

Artificial insemination

Use this table to record all cows/heifers that have been artificially inseminated.

Ear tag	Service date	Sire	Service date	Sire	Service date	Sire	PD+	Due date	Notes (cull, aborted, sexed semen, etc.)

Artificial insemination

Ear tag	Service date	Sire	Service date	Sire	Service date	Sire	PD+	Due date	Notes (cull, aborted, sexed semen, etc.)

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Artificial insemination

Ear tag	Service date	Sire	Service date	Sire	Service date	Sire	PD+	Due date	Notes (cull, aborted, sexed semen, etc.)

Calving records

Recording details of calving will help you to monitor which of your bulls and cows are easier calving and allow you to look at areas to improve in terms of calf mortality.

Calving codes

Code		Ease	
L	Live calf	1	No assistance
D	Dead calf	2	Slight assistance – no equipment used
		3	Mechanical assistance – jack, ropes, etc.
		4	Veterinary assistance required – no surgery
		5	Surgery required – caesarean, cutting of vulva/calf

Calving records

Recording calving information is essential in order to properly manage groups of cows, heifers and calves. Remember to record BCS at calving.

Cow ear tag	Date calved	Calving code	Calf ear tag	Calf sex	Calf weight (kg)	Dehorned	Castrated

Calving records

Cow ear tag	Date calved	Calving code	Calf ear tag	Calf sex	Calf weight (kg)	Dehorned	Castrated

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Calf deaths

Calf ear tag	Date of death	Pedigree	Group/ mob	Reason	BCMS informed	Cull cow tag

Cow and bull deaths/culls/sales

Date	Ear tag	Died/cull/sold	Reason	Price (£)

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Cow and bull deaths/culls/sales

Date	Ear tag	Died/cull/sold	Reason	Price (£)

Weaning records

Recording calf weaning dates and weights allows you to monitor daily liveweight gain pre- and post-weaning and also which animals achieve optimum carcase grade.

Ear tag	Date weaned	Weight (kg)	Wormed/ vaccinated	Date sold	Store/finished	Sale LW (kg)	Carcase grade

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Animals retained for breeding

Keeping details of animals that are to be retained for breeding allows mating decisions to be made and ensures the correct weight at first service is achieved.

Ear tag	DOB	Weight at weaning (kg)	Notes (sire/dam etc.)

Animals retained for breeding

Ear tag	DOB	Weight at weaning (kg)	Notes (sire/dam etc.)

Calf purchases

Date	Ear tag	DOB	Breed	Weight (kg)	Sex	Foster cow ear tag	Notes

Calf purchases

Date	Ear tag	DOB	Breed	Weight (kg)	Sex	Foster cow ear tag	Notes

Breeding cattle purchases

Recording the management of bought-in animals ensures they are given the correct treatments and vaccinations to maintain the overall health of your herd.

Date	Ear tag	DOB	Breed	Weight (kg)	Notes (source, etc.)

Breeding cattle purchases

Date	Ear tag	DOB	Breed	Weight (kg)	Notes (source, etc.)

Weight records

Ear tag	Sire/breed	Date	Date	Date	Date	Date

Weight records

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Weight records

Ear tag	Sire/breed	Date	Date	Date	Date	Date

Weight records

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Weight records

Ear tag	Sire/breed	Date	Date	Date	Date	Date

Weight records

Ear tag	Sire/breed	Date	Date	Date	Date	Date

Weight records

Ear tag	Sire/breed	Date	Date	Date	Date	Date

Purchased feeds, creep, forage and straw

Date	Product	Quantity (t)	Price (£/t)

Purchased feeds, creep, forage and straw

Date	Product	Quantity (t)	Price (£/t)

Home-grown feeds (not forages)

Field	Area	Crop	Fertiliser application		Total fresh weight (t)
			Date	Product	

Home-grown grazed forage

Field	Area	Date in	Date out	No. of cattle	kg/DM at grazing start	kg/DM at grazing end	Notes

Home-grown grazed forage

Field	Area	Date in	Date out	No. of cattle	kg/DM at grazing start	kg/DM at grazing end	Notes

Home-grown forage – cut

Field	Area	Date cut	No. bales/trailer loads	Contractor cost (£)	Wrap/string cost (£)

Sundry records and purchases (ear tags, foot trimming, etc.)

Date	Purchase	Purchased from	Quantity	Cost (£)	Wrap/string cost (£)

Movements/transport costs

Date	No. of animals	From	To	Cost (£)

Medicine and vet records

Date	Ear tag	Reason for vet visit/product	Dosage	Batch No.	Expiry date	Withdrawal

Medicine and vet records

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Medicine and vet records

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Store cattle purchases

Recording the management of bought-in animals ensures they are given the correct treatments and vaccinations to maintain the overall health of your herd.

Date	Ear tag	Weight (kg)	Breed	Sex	Vendor	Wormed	Vaccinated

Store cattle purchases

Date	Ear tag	Weight (kg)	Breed	Sex	Vendor	Wormed	Vaccinated

Store cattle purchases

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Store cattle purchases

Date	Ear tag	Weight (kg)	Breed	Sex	Vendor	Wormed	Vaccinated

Finishing cattle

Keeping track of finishing cattle will help to identify cattle that finish to the correct weight and carcase class in the shortest amount of time, making for a more profitable business.

Ear tag	Date bought	Date sold	LW at purchase (kg)	LW at sale (kg)	Carcase classification	Notes (KO%, p/kg, etc.)

Finishing cattle

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Finishing cattle

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Feeding and conservation

Lifetime growth rates required to finish a 600 kg steer

Age at slaughter (months)	12	15	18	21	24	27	30
Daily LW gain (kg/day)	1.53	1.23	1.02	0.92	0.77	0.68	0.61

- Feed costs/kg LW gain tend to reduce as growth rates increase
- Feed costs/kg LW gain tend to increase as cattle get heavier and closer to slaughter

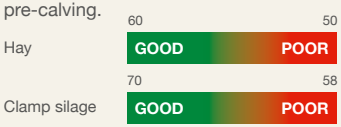
Energy required for 1 kg weight gain at different liveweights

LW (kg)	350	400	450	500	550	600	650
ME required/kg LW gain	80	88	95	102	110	115	123

Understanding forage analysis

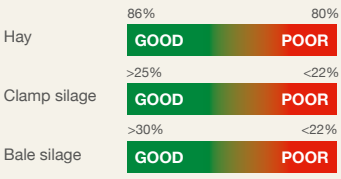
D-value – a measure of feed digestibility

The higher the D-value, the less concentrates are required for cows pre-calving.



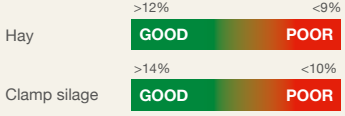
Dry matter (DM%) – a measure of what is 'not' water

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



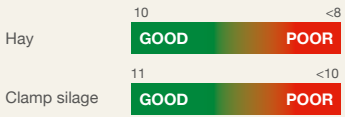
Crude protein (CP%) – a measure of the protein content

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



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.



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.

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 cows.

Ammonia N – a measure of protein breakdown during the ensiling process

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

Total fermentation acids – a measure of total acid content

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

Feed values

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	4.0	6.5
Maize silage	25–35	9.0	10.8
White clover (grazed)	20	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 (hipro)	88.0	52.0	13.8
Soya bean meal (lopro)	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

Killing out %

	Liveweight (kg)									
	500	520	540	560	580	600	620	640	660	680
Killing out (%)	Deadweight (kg)									
45	225	234	243	252	261	270	279	288	297	306
46	230	239	248	258	267	276	285	294	304	313
47	235	244	254	263	273	282	291	301	310	320
48	240	250	259	269	278	288	298	307	317	326
49	245	255	265	274	284	294	304	314	323	333
50	250	260	270	280	290	300	310	320	330	340
51	255	265	275	286	296	306	316	326	337	347
52	260	270	281	291	302	312	322	333	343	354
53	265	276	286	297	307	318	329	339	350	360
54	270	281	292	302	313	324	335	346	356	367
55	275	286	297	308	319	330	341	352	363	374
56	280	291	302	314	325	336	347	358	370	381
57	285	296	308	319	331	342	353	365	376	388
58	290	302	313	325	336	348	360	371	383	394
59	295	307	319	330	342	354	366	378	389	401
60	300	312	324	336	348	360	372	384	396	408

Killing out %

$$\text{Killing out \%} = \frac{\text{Cold carcase weight}}{\text{Liveweight}} \times 100$$

Higher killing out percentages result from:

- Heavily muscled cattle
- Higher degree of finish
- Empty liveweight – cattle weighed a long time after feeding
- Cattle fed high-energy diets, e.g. high levels of cereals
- Less severe carcase-dressing specifications

Lower killing out percentages result from:

- Lightly muscled cattle, e.g. Holsteins
- Leaner cattle
- Weighed full – weighed immediately after feeding
- Cattle fed high-forage diets
- More severe cascase-dressing specifications

Notes: January

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: February

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: March

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: April

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: May

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: June

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: July

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: August

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: September

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: October

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: November

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes: December

Date	Details (e.g. feeding, bedding, grassland and forage costs, veterinary, labour, contractors)	Cost (£)

Notes

Notes

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