

BETTERRETURNS



Get started with sheep farming



BEEF & LAMB

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Introduction

The most significant single influence on the success of any flock is the shepherd. Whether you intend to keep half a dozen sheep or several hundred, the same principles apply; excellent stockmanship and attention to detail will improve both animal welfare and productivity.

Whether you intend to sell lambs for meat or for breeding purposes, it is vital that you identify potential markets first and then produce animals to suit their specific requirements. The way to maximise financial returns is to produce and sell the type of sheep which buyers really want and are willing to pay the most money for.

It is important to make sure that your sheep system is appropriate for the resources you have available. For instance you must consider fencing, watering and feeding, along with good handling facilities to minimise stress. If indoor housing is required, accommodation should have sufficient space, feeding facilities and be designed for ease of cleaning.

Good records are essential for monitoring flock performance. Comparing your performance records year-on-year will provide you with trends on which future action may be taken to improve. This will help with many on-farm management decisions, from genetic to feeding choices.

Keeping sheep is a satisfying experience, but there are lots of areas to consider. This guide takes you through the key areas you need to be aware of before introducing sheep to your land and provides contacts for additional information.

Grassland management has not been included in this guide. This publication should be used in conjunction with the wide range of literature published on ahdb.org.uk/knowledge-library

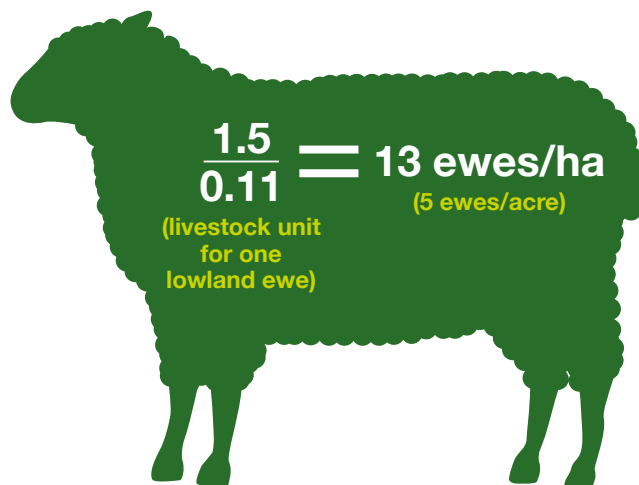
Getting started

Stocking rates

Stocking rates should be based on land type, nutrient use, environmental stewardship agreements and grazing quality. A high stocking rate would be 2–2.5 livestock units/ha (0.8–1 LU/acre) and a low stocking rate would be 1–1.5 livestock units/ha (0.4–0.6 LU/acre). One hectare is equal to 2.47 acres.

Example stocking rate calculation:

Chosen stocking rate of 1.5 livestock units/ha.



Livestock units (LU) can be found in our *Planning grazing strategies for Better Returns* manual. You can also use measured grass supply and demand to determine stocking.

Breeds

Select a breed suitable to your location and business requirements. A list of sheep breeds and cross-breeds commonly found in the UK can be found on the [National Sheep Association website](#). If you are farming in the hills with a harsh climate and a short growing season, it's advisable to choose hill breeds which are adapted for this environment.

The decision to lamb indoors or outdoors

The decision to house sheep for lambing depends on the breed, climate, season(s) of lambing, grazing availability and your management preferences. If lambing is due to start during winter or early spring, housing will be needed, whereas if you're planning to lamb late spring in milder weather, outdoor lambing may be preferable. Choose a sheltered field for outdoor lambing. The pros and cons of both systems are shown in Table 1.

Table 1. Pros and cons of indoor and outdoor lambing

	Pros	Cons
Indoor	Protects the sheep from the weather and predators	Higher cost as bedding needed and labour required, which needs to be justified with higher output
	Gives pasture a chance to recover and grow back	Increased risk of infectious disease
	Increased supervision	Risk of mismothering
Outdoor	Can reduce feed and labour costs	Can be more difficult to collect data and tag at birth
	Less interference for the ewes	Less supervision and more difficult to foster if required
	Reduced risk of infectious disease	Higher losses may occur, due to poor weather and predation

For a list of the equipment needed before lambing starts, see [Appendix 1](#).

Sheep in the arable rotation

Including livestock in the rotation can bring multiple advantages, including improving soil health and weed management. The aim is to increase the productivity of arable fields, particularly those identified as underperforming. For information on different leys, cover crops and manure, see the [Livestock in the arable rotation](#) guide.

Flock management

Breeding

To maintain a compact lambing period, remove rams after 35–40 days. To assess how many ewes have been mated and which rams are working, raddles and paint can be a useful tool. Change raddle colour every 10 days. Start with light colours and end with the darkest. Ensure harnesses fit well – they may require adjustment as the ram loses condition during tupping. Too loose or too tight may rub and result in brisket sores.

It's useful to know how many lambs the ewes are carrying so they can be fed accordingly. Pregnant ewes can be ultrasound scanned – this is carried out by contractors who are trained and have the necessary equipment. If you have a small flock, it may be worth liaising with other sheep farmers in the region to see when a scanner will be in your area.

Shearing

Apart from wool-shedding breeds, sheep require shearing annually and this should only be performed by a competent person. You'll need to register with [British Wool](#) to market your fleece. There may be alternative options, such as private or specialist sales, e.g. rare breeds fleeces, but British Wool should be consulted as to statutory requirements.

Recording information

It's useful to record how your animals are performing, not only for your finances but also for the health and welfare of your flock. For example, consistently low scanning percentages each year may indicate there's an issue with the ewes' nutrition or an underlying health issue. Use the **Flock notebook** to help you record information.

Flock management tool

To help with flock management, the **Better Returns flock management calendar** shows all the key production tasks throughout the year. These dates are set by entering either a lambing or a tupping date. You can add as many groups of sheep as you like, with different lambing or tupping dates, and add your own tasks into the calendar. The calendar can be saved as a pdf or printed.

Useful contacts and links

Agriculture and Horticulture Development Board

Tel: 024 7647 8834

Email: brp@ahdb.org.uk

National Sheep Association (NSA)

Tel: 01684 892661

nationalsheep.org.uk

The Royal College of Veterinary Surgeons:

Find a vet Tel: 020 7222 2001

findavet.rcvs.org.uk/home

Keeping the flock secure

Register your sheep and land

Before your sheep arrive, you must register your land with the Rural Payments Agency (RPA). They will provide you with a County Parish Holding number (CPH), a nine-digit number that identifies the land where the sheep will be kept. You can get a temporary number; however, if you want to keep livestock on the land for more than one year, a permanent number is required.

Once you have a CPH number, the flock can be moved to the holding under a general licence. You must register as a sheep keeper with the Animal and Plant Health Agency (APHA), who will provide you with a unique flock mark. This is a six-digit number which is unique to your sheep. The flock number and CPH number are linked in order to record livestock movements.

Useful contacts and links

Animal and Plant Health Agency (APHA)

Tel: 0300 0200 301

gov.uk/government/organisations/animal-and-plant-health-agency

Register your holding and flock

gov.uk/guidance/sheep-and-goat-keepers-register-your-holding-and-flock-or-herd

Rural Payments Agency (RPA)

Tel: 0300 0200 301

gov.uk/government/organisations/rural-payments-agency

Movements

A movement licence is essential in the case of a disease outbreak and it is therefore an offence if movements are not recorded. This includes each time sheep are moved on or off your holding, on occasions such as:

- New sheep moved on to your land
- Sheep moved to and from a show
- Sheep moved to and from market
- Sheep moved to an abattoir
- Sheep moved off your land to another farm for sale
- If sheep are moved to be kept as pets

There are particular requirements and exceptions to the points above; refer to the Defra website for further information. Register movements with **arams**.



You'll need a stock of official ear tags to use when lambs are born on the holding, and if a tag is lost it must be replaced within 28 days. All breeding sheep must have an electronic identification tag (EID) in one ear and a non-electronic tag in the other ear.

It is illegal to move or sell sheep which are not properly tagged with their unique number.

Useful contacts and links

Movement guidance

[gov.uk/guidance/sheep-and-goat-keepers-how-to-report-animal-movements#options-for-making-reports-and-notifications](https://www.gov.uk/guidance/sheep-and-goat-keepers-how-to-report-animal-movements#options-for-making-reports-and-notifications)

Live transport welfare regulations

[gov.uk/guidance/farm-animal-welfare-during-transportation](https://www.gov.uk/guidance/farm-animal-welfare-during-transportation)

Animal reporting and movement service (arams)

arams.co.uk/index.aspx

Record-keeping

All sheep keepers must obtain a holding register. The following details must be recorded for each animal:

- New or replacement ear tag numbers and date of application
- Movement of sheep moving to and from your holding
- An annual count of the sheep on the holding on 1 December
- Date of death and tag number, where known

Holding registers are available on the [GOV.UK](#) website. A spreadsheet or notepad can be used as long as all of the above information is recorded.

Deadstock

Deadstock must be disposed of as soon as possible. Do not burn or bury fallen stock. Secure, leakproof bins with lids can be used as temporary storage for fallen stock. See the [Defra fallen stock](#) pages for full legislation.

Useful contacts and links

Defra fallen stock
gov.uk/guidance/fallen-stock

National Fallen Stock Company
Tel: 01335 320014
nfsco.co.uk

Biosecurity – keeping disease out

Biosecurity aims to prevent the introduction of new diseases onto a farm. The biggest risk to the flock is through the purchase of new animals, therefore you must find out as much information as possible about their health status. Whether purchasing privately or through a market, you must judge the accuracy of the information provided by the vendor.

Never purchase any sheep without knowing their vaccination history.

Keeping a closed flock is a way of reducing the risk of disease entering the farm. A genuine closed flock does not allow animals to be bought in, even on a temporary basis. However, this system can be difficult to manage as it requires there to be more groups of stock on the farm.

Keep incoming sheep away from the main flock for a minimum of three weeks. Some diseases, such as enzootic abortion, can remain unidentified until lambing time. Sheep may not appear to be ill, however they could be incubating a disease. So, the gold standard is to keep replacements separate until after lambing, if facilities allow.

Common diseases which can be ‘bought in’ are:

- Sheep scab
- Footrot
- Contagious ovine digital dermatitis (CODD)
- Caseous lymphadenitis (CLA)
- Orf
- Fluke and resistant worms

On arrival, check the animals for signs of disease and treat any problems immediately. Animals should remain in quarantine until all treatments and tests are complete. It is advisable to consult a vet to plan how to manage the introduction of purchased breeding stock. This can form part of your flock health plan.

Flock health plan

All flocks should have an active health plan which is followed and reviewed regularly with the vet. A health plan should be a working document, tailored to your farm's circumstances, which can be updated depending on current disease levels or improvements. An annual health and performance review undertaken with your vet is a requirement of farm assurance schemes.

Key elements are:

- A farm biosecurity policy
- Vaccination
- External and internal parasite control
- Euthanasia
- Young animal management and husbandry procedures, such as castration and tail docking
- Quarantine for bought-in or sick stock

Medicine use and vaccinations

It is essential that all sick animals are treated as soon as possible and those looking after the animals are familiar with the health plan. Vaccinations and antibiotics play a key role in the health plan and it's essential that you follow advice from your vet.

Antibiotic resistance

The risk of using antibiotics, including overuse and underuse, is that antibiotic-resistant bacteria emerge that can endanger human and animal health.

- Resistant bacteria are found both on and in humans, animals and in the environment
- Resistant bacteria can survive treatment and multiply quickly
- Antibiotic resistance spreads as bacteria move from place to place via human and animal contact, contaminated materials and in water, food and via particles carried on the wind

Preventative or prophylactic antibiotics should not be used routinely and should not be used to compensate for poor hygiene or inadequate husbandry conditions.

Responsible use

All antibiotics are prescription-only veterinary medicines (POM-Vs). Vets are the only people allowed to prescribe POM-Vs. Some antibiotics are only effective against particular bacteria; these are called narrow-spectrum. Others are effective against a range of different bacteria and are known as broad-spectrum antibiotics. Antibiotics must be prescribed based on an examination of the animals or if your vet has personal knowledge of the condition of the animals to make a diagnosis.

The golden rule for using antibiotics and anthelmintics (wormers) in all livestock is 'as little as possible but as much as necessary'.

Best practice for the use of animal medicines:

- Use the correct product
- Use it at the correct time
- Use the correct dosage for the weight of the animal
- Administer the medicine in the correct place
- Complete the full course prescribed by the vet

Improving the nutrition and environment of the sheep will often improve their health and welfare, reducing the need to use these medicines.

Vaccines

It is recommended that ewes and rams should receive clostridial vaccines (two doses 4–6 weeks apart) and ewes should receive abortion vaccines four weeks before tupping, as a minimum. Speak to your vet to get specific advice for your flock.

Storage

Every medicine has its own specific storage instructions, which can be found on the back of the packaging.

Top tips for medicine storage:

- Never use a medicine after its expiry date – it may not work and could make the animal ill
- Store the medicine as advised on the packaging
- Pop a thermometer in the fridge to make sure it's between 2–8°C (unless otherwise stated on the packet)
- Use a cool bag after purchasing your medicines to keep them cool on the journey home
- Use a sharps box for used needles – your vet may be able to provide you with one
- Remove all needles and dosing equipment from the medicine before storage
- After using equipment, aim to clean it on the same day – bacteria can double in numbers every 30 minutes

If a medicine changes colour or becomes thick or lumpy, check with the vet that it is still safe to use. The medicine will probably have to be discarded appropriately

Administration and hygiene

Each medicine used on farm will have its own recommended route of administration. These are the main routes to administer medicine:

- Subcutaneous injection (S/C or sub-cut), under the skin
- Intramuscular injection (I/M), into the muscle
- Intravenously (I/V), into the vein (this is a vet-only procedure)
- Oral drench
- Pour-on, onto the skin
- Intramammary, up the teat (for mastitis)
- Topical (spray, eye ointment)

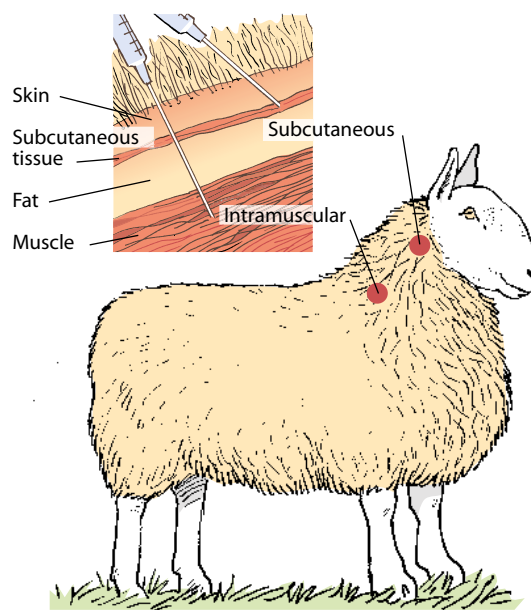


Figure 1. Subcutaneous and intramuscular injection technique



Figure 2. Correct drench technique

As a general rule, use a short needle for subcutaneous injections and a longer one for intramuscular injections. Inject into a clean area of the animal where possible and in the neck with a sterile needle and syringe. Modern needles and syringes are designed to be used only once. Where large batches of animals are to be vaccinated, change the needle frequently, e.g. after every 10 animals.

Ask your vet if you are unsure how to administer a medicine. Training courses are available in the safe use of veterinary medicines.

Recording use

The use of all veterinary medicines must be recorded, including drenches and topical sprays. This information can be recorded electronically or in written form, or both. Any medicines which are disposed of and not administered to animals should also be recorded.

For more information, see [Using medicines correctly for Better Returns](#).

Routine procedures

Handling

Well thought-out handling reduces stress on animals and reduces the risk of injuries to you and the sheep. Understanding how animals react and what stimulates them can help with the design of better handling facilities.

Sheep must be treated with respect at all times. This means avoiding raising arousal to the point where animals behave in a self-protective way. Handling will generally produce a flight response in sheep, as handlers and dogs are seen as a significant threat.



Maintaining a flight zone

Top tips:

- Keep calm and talk gently
- Maintain a flight zone – remaining quiet and calm can reduce this zone
- Exploit the sheep's willingness to negotiate a system rather than using fear as a motivator
- Familiarise sheep with the yard and race layout
- Try to reduce the severity of any treatment
- Take into account the animal's perspective

Don't grab sheep by their wool – this will cause bruising.

Planning a handling system

Planning a handling system takes time but can save money. Whether you are modifying existing facilities, building new or buying portable equipment, there are some key things to consider:

- Tasks to be done: shearing, crutching, foot-bathing, vaccination, dipping, weighing, sorting, loading, scanning and condition scoring
- The number of sheep that will need handling – will flock numbers increase? Can the system be extended easily? Don't forget busy periods of the year when all ewes have lambed
- Is there enough access for loading/unloading?
- Are there materials on hand that can be used to build the handling system? Make sure there are no open or uneven sides which sheep could bruise or cut themselves on
- Make sure the location and orientation exploit the sheep's natural behaviour – sheep need to be able to see each other at all times and dislike walking downhill

For more information, see [*Improving sheep handling for Better Returns*](#).

Ram selection

The use of a purchased or borrowed ram represents some risk of introducing disease. Risks can be minimised by sourcing young rams that have not mated any females and that come from accredited flocks.

Check the seller's flock health status prior to purchase and find out when the ram's next vaccinations are due.

Fit to work

The ram must be physically sound and fit to work. Some rams will have been fed on a high-concentrate diet for the sale. These rams will need their concentrates to be reduced slowly over time, as sudden changes could cause the ram to rapidly lose condition and even die. When purchasing a ram, assess it for:

- Toes, teeth, testicles and tone (see Ram MOT below)
- Check the neck, head and shoulders for wounds caused by fighting
- Check for lumps on the neck which may be a sign of CLA disease (caseous lymphadenitis)

Once you've purchased a ram, do this ram MOT every year, 10 weeks before mating starts.

Ram MOT

Assess your rams

Toes

Check locomotion, legs and feet

Teeth

Check for undershot or overshot jaw, gaps and molar abscesses

Testicles

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

Tone

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

Treat

Check vaccinations are up to date

Consult your vet for a thorough examination

For a mature ram, the testicles should be more than 36 cm. However, they will vary slightly with smaller breeds. To order a ram testicle tape, email brp@ahdb.org.uk

To see how it's done, watch the video [how to conduct a ram MOT](#) on the AHDB Beef & Lamb YouTube channel.

Looks aside, you must also bear in mind the targets for your flock, whether it be to sell finished lambs or store lambs and/or breed replacements. You can use estimated breeding values (EBVs) to select rams specifically for producing female replacements or to produce lambs for meat. Ultimately, good looks and good feed cannot overcome poor genetics.

EBVs

Estimated breeding values (EBVs) provide a measure of the breeding potential of an animal for a specific trait. Performance data collected by pedigree and commercial producers is analysed by the Signet Sheepbreeder Service. This independent analysis calculates how much of each animal's performance is due to its breeding merit.

Terminal sires

A terminal sire is a ram with superior EBVs for growth rates, feed efficiency and carcass conformation. Terminal sires should be used in flocks where lambs are to be sold for slaughter.

EBV	Purpose of EBV
Eight-week weight (kg)	Indicator of growth rate
Scan weight (kg)	Indicator of growth rate
Muscle depth (mm)	Indicator of loin muscularity
Fat depth (mm)	Indicator of potential to produce a lean carcass or heavier carcass without being overfat
CT* lean weight (kg)	Best prediction of lean meat yield
CT* fat weight (kg)	Best prediction of fat weight in the carcass
CT* muscularity (mm)	Highlights genetic potential for gigot muscularity

*Live animals are CT scanned

For more information, see [Buying a recorded ram for terminal sire traits](#).

Maternal sires

A maternal sire is a ram with superior EBVs for traits such as maternal ability, litter size and lambing ease. Maternal sires should be used in flocks where females are retained for breeding.

	EBV	Purpose of EBV
EBVs that influence maternal performance	Maternal ability (kg)	Indicator of daughter's milking ability
	Litter size born	Indicator of ewe prolificacy
	Litter size reared	Indicator of lambs successfully reared
EBVs that influence ewe efficiency	Mature size (kg)	Indicator of ewe efficiency
	Scan weight (kg)	Indicator of growth to 21 weeks of age
EBVs that influence lambing ease	Lambing ease (%)	Indicator of ease of lambing
	Birth weight (kg)	Indicator for birth weight

Traits such as birth weight and litter size are also influenced by non-genetic factors, such as nutrition and age of the ewe. Growth rate and carcass quality are still important traits to consider in a maternal sire, to increase the profitability of the flock by enhancing the characteristics of those lambs that are not being kept as replacements.

Choosing a ram with good EBVs is not a substitute for good management, nutrition and high flock health status.

For more information, see [Buying a recorded ram for maternal sire traits](#).

To check out a ram's EBVs, index and pedigree details, go to signetdata.com

To see Texel reports and benchmarks, go to texel.uk/prt/breed-development-3

Selection of breeding ewes

The decision whether to retain or purchase replacements will be influenced by several factors:

- The farming system
- Number of rams
- Health status of the flock
- Grazing availability

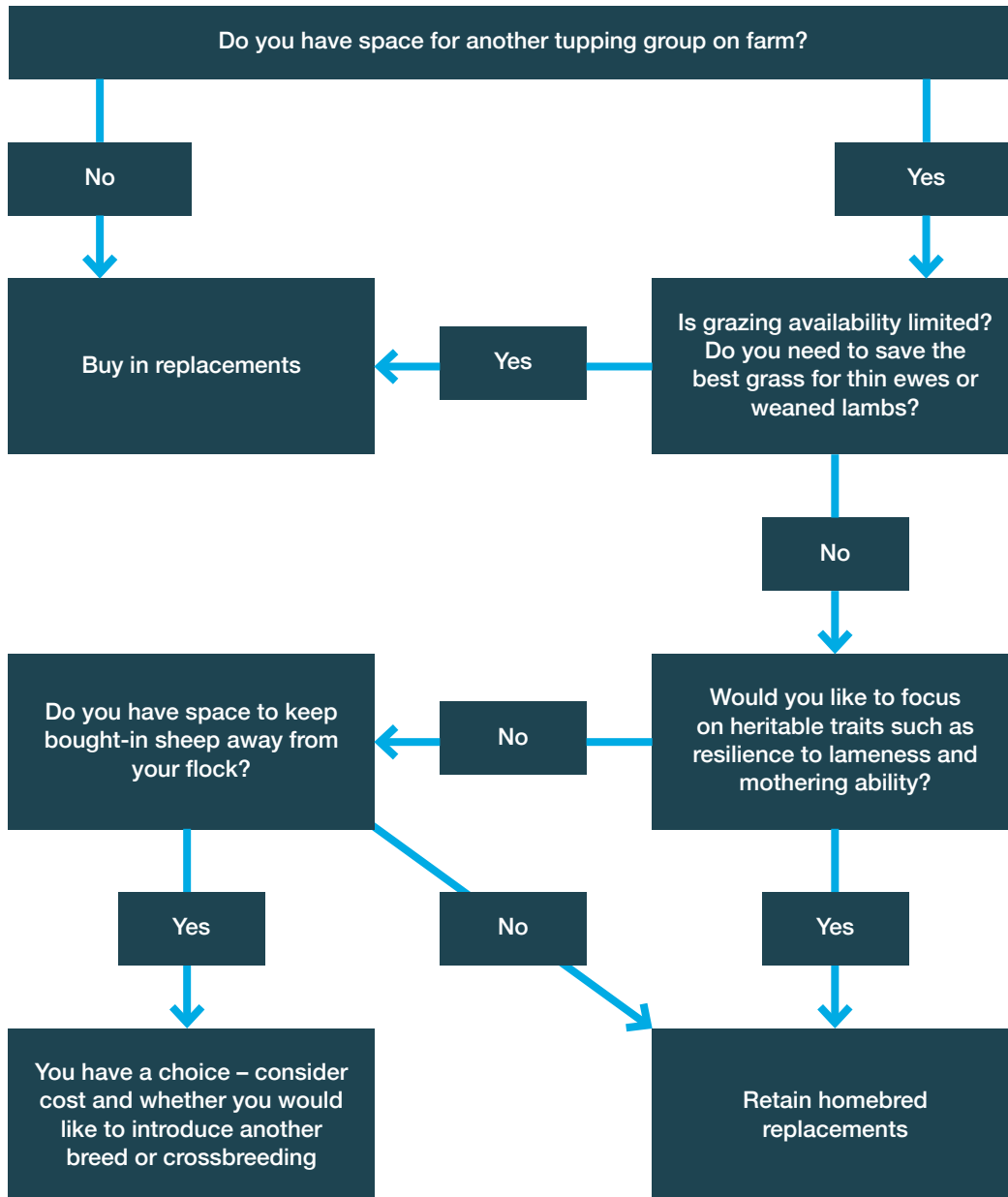


Figure 3. Replacements decision tree

Homebred replacements are of known disease status and are used to your 'farm bugs'. When selecting homebred replacements, make sure they are 60% of their mature body weight as ewe lambs and 80% of their mature body weight as shearlings.

You can buy in replacements later in the season if required. This can provide more choice of breeds, which may be essential to maintain hybrid vigour in some flocks. Always check vaccinations as recommended in the 'Keeping the flock secure' section of this document.

Purchase replacements at least six to eight weeks before tugging to allow time to complete a quarantine period and implement a vaccination programme



Ewe fertility

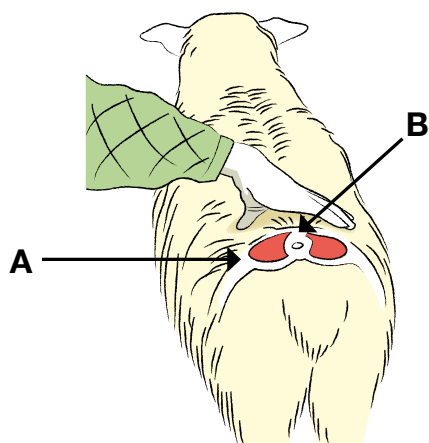
Factors through the entire production year will affect ewe fertility, so it is important to understand the management changes that could optimise flock fertility. The aim is to maintain body condition and avoid sudden weight fluctuations at the key times of the year.

Body condition scoring (BCS)

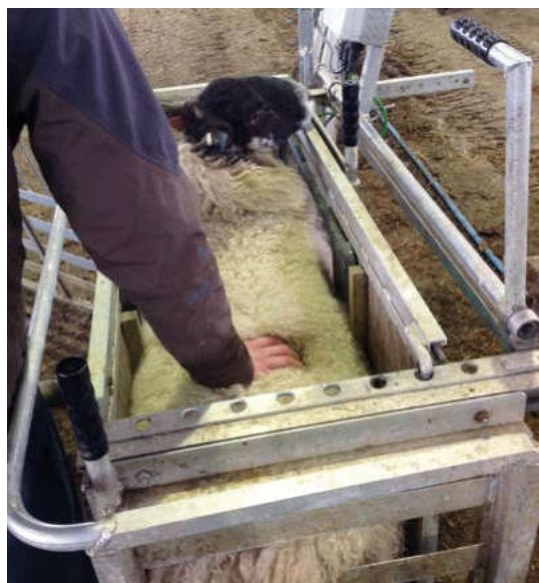
Body condition is a subjective measure of fatness and muscle cover in your sheep. Body condition and the change in condition between weaning and mating directly influence ovulation and conception rate. Ewes that are too fat or too thin suffer reduced fertility and are less able to rear lambs successfully.

Target BCS will vary depending on the farm type, breed, time of year and ewe prolificacy. The commercial working range for a ewe is BCS 2–3.5, depending on breed and time of year.

Place a hand over and around the backbone and loin area behind the last rib to feel the amount of fat cover and muscle mass. Use the same hand to BCS all the ewes to reduce variability which can occur using both hands.



A – Transverse processes
B – Spinous processes



Feel for the sharpness of the spinous and transverse processes coming out from the spine.

Table 2. Target body condition scores based on stage of production

Time of year	Target BCS – hill ewe	Target BCS – lowland ewe
Weaning	2.0	2.5
Tupping	2.5	3.5
Mid-pregnancy, late pregnancy and lambing	2.0	3.0
Eight weeks post-lambing	2.0	2.5–3.0

Ewes which aren't on target should be carefully managed. The time period from weaning to tupping is the best time to allow ewes to get to target BCS – prioritise the highest-quality grazing for these ewes. Increasing the feed supply for thin ewes in late pregnancy is too late. This could result in heavier birth weights and ewes are unlikely to gain weight. Additionally, reducing the feed intake of overfat ewes in late pregnancy may result in metabolic disease such as twin lamb.

Target: make sure at least 90% of ewes are at target BCS.

To see how it's done, watch How to body condition score on the [AHDB Beef & Lamb YouTube channel](#).

Other factors which affect ewe fertility are:

- Nutrition
- Hygiene at lambing
- Weaning date – you need to allow enough time for thin ewes to regain condition for tupping
- Age of ewe
- Flock health status – most diseases affect fertility, consider these issues which may also occur at lambing time:
 - Lameness
 - Abortion
 - Mastitis and prolapse may occur which affect survival and lamb performance



Provide ewes with plenty of clean and dry straw to minimise disease issues

For more information, see [Ewe fertility for Better Returns](#) manual, BRP+ [Understanding mastitis in sheep](#) and the [Sheep diseases directory](#).

Recognising the signs of sick animals

Stock should be checked daily. A healthy sheep will be alert, grazing with the flock, cudding and walking well.

Signs sheep are unwell include:

- Drooping ears
- Abnormal posture, e.g. a hunched back
- Muck or scour around the back end
- The appearance of blindness or 'stargazing'
- Struggling to maintain or gain weight
- Being apart from the flock
- Excessive wool loss
- Frequent scratching or rubbing
- Absence of cudding
- Frequent panting or coughing
- Sudden drop in milk yield
- Not allowing her lambs to suckle



Drooping ears and the appearance of blindness – this sheep was diagnosed with listeriosis



Poor performing lambs with dirty back ends



Thin ewes

Ewes which remain thin after weaning despite having good-quality grazing may have an underlying health issue. Consult your vet for advice if this becomes an issue.



Abnormal posture – this lamb may be hungry and cold



Any animal seen frequently scratching or rubbing needs to be inspected

For more information, see the [Sheep diseases directory](#).

Internal parasites

Worms

There are about 20 different species of parasitic worms of sheep commonly found in the UK. It is vital that worms are controlled to maintain lamb growth rates and ewe performance.

- If sheep have never grazed on your land, your pasture will be clean and low risk
- If you already keep cattle, consider mixed grazing or rotating the cattle and sheep to reduce the burden

Heavy burdens result in stunted lambs and even modest levels reduce performance and increase costs.

A worm control plan must be sustainable and you should not rely on treatments alone. The challenge to sheep from worms builds over the season and a successful strategy takes these dynamics into account.

Top tips for sustainable worm control:

- Worm control must be part of the flock health plan – review regularly with your vet and adapt the plan in line with changing patterns in worm burdens year to year
- Monitor worm burdens through faecal egg counts (FEC). If numbers are low, there is no need to treat
- Manage grazing to reduce or avoid high worm burdens on pastures, e.g. moving weaned lambs to low-risk pasture, such as a field which was arable the previous year or grazed by cattle only
- Quarantine bought-in sheep and treat – consider whether sheep scab is a risk as this will inform your product choice
- If you don't think a treatment has worked, test for resistance
- If you own a dog, make sure they are up to date with their worming routine, as dogs can pass tapeworm to your sheep

Avoid routine treatment of lambs with the same product. There are only five active ingredients to use but many products to choose from – see the [Parasite control guide](#) for more information. Vets can break up large packs of wormer for smaller flocks, however an SQP cannot.

For more information on life cycles, risk factors, resistance and treatment, see [Worm control in sheep for Better Returns](#).

Liver fluke

Liver fluke is a disease caused by a parasite and severe disease can result in death, while milder infections provoke a significant reduction in flock performance, e.g. reduced lambing percentages, reductions in lamb growth rate. The incidence of fluke disease is influenced by climate, particularly summer rainfall. The main intermediate host is the mud snail, which is found in wet, muddy conditions. Therefore, risk factors include areas around water troughs and muddy gateways. To monitor the risk in your area, check out parasite forecasts at nadis.org.uk/parasite-forecast



Mature liver flukes are a similar size to a five-pence coin

Consult your vet to develop a control plan specific to your farm. It's essential that the correct product is chosen depending on what stage of development the fluke are at.

For more information, see page 22 of the [Sheep diseases directory](#).

External parasites

The main external parasites (ectoparasites) in sheep are: sheep scab, blowfly strike, nasal bots, lice, ticks and mites. The greatest financial losses across the national flock occur from sheep scab and blowfly strike.

Sheep scab can often be bought in on stock. Any animal seen rubbing, scratching or chewing its fleece needs to be caught and inspected. Parasites often cause the fleece to loosen and a loss of condition. Quarantine bought-in sheep and inspect regularly for symptoms. You can treat on arrival if you think scab is a risk. If symptoms are seen, veterinary diagnosis is important as lice can cause similar symptoms, requiring different treatment.

Blowfly strike occurs in warm, humid weather conditions. Initial signs are yellow/brown wool with a foul smell and the sheep will be distressed and depressed. Animals stamp their hind legs and shake their tails vigorously. Upon inspection, you will find maggots, which will eat into the skin of the sheep. Good husbandry, such as crutching/dagging in the early spring, can reduce the risk, as well as shearing in good time for summer. Keep your sheep healthy – those with footrot, dirt stuck to their back end and wounds will have increased susceptibility to blowfly strike.

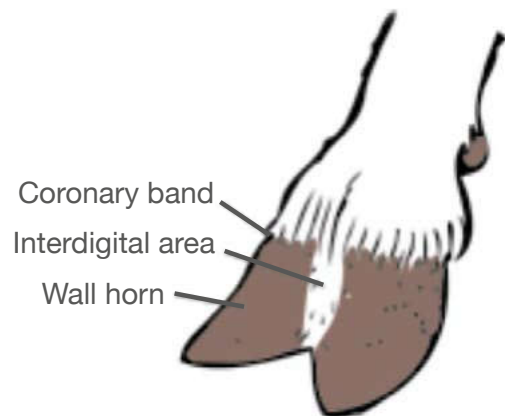
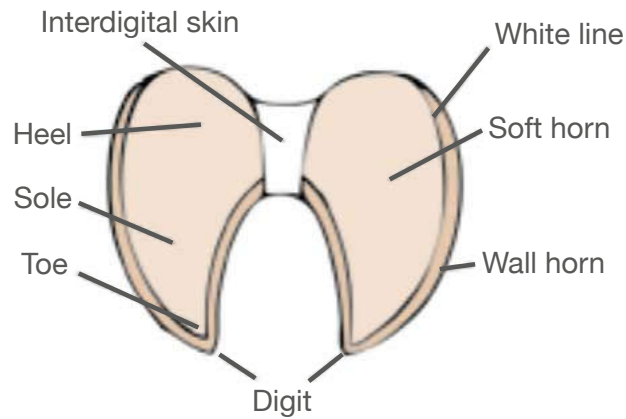
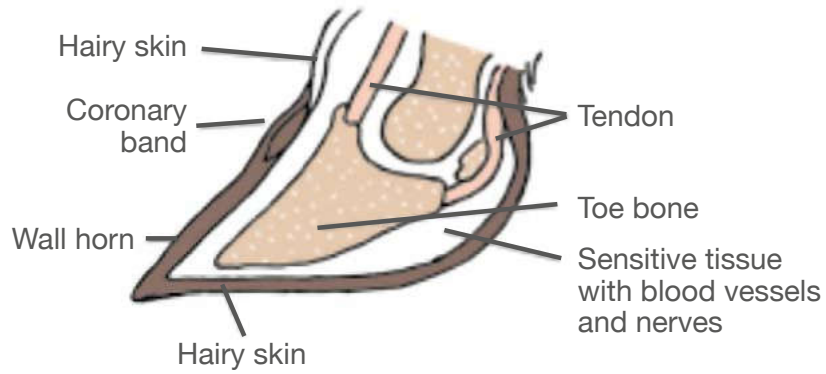


Blowfly strike – discoloured wool and maggots

Lameness

The healthy foot

A normal foot has a hard wall of horn around two toes, each with a softer sole horn at the base. In healthy sheep, the interdigital skin between the toes is pale pink and dry with a layer of fine hairs. The horn of both sole and wall is intact, without smell, heat, softness or separated horn. If a sheep is not lame and its feet look reasonable, leave alone and do not trim.



Causes of lameness

There are a range of factors which can cause a sheep to go lame, from rough stalky grass which can damage the interdigital skin, to thorns and bacteria. The six most common causes of lameness are scald, footrot, CODD (contagious ovine digital dermatitis), toe granuloma, abscess and shelly hoof. Correct diagnosis is essential, as footrot and CODD are caused by different bacteria and require different antibiotics for treatment.



Footrot

For information on the causes, symptoms, treatment and prevention of lameness, see [Reducing lameness for Better Returns](#). Consult your vet for a diagnosis.

Look for early signs of lameness, don't wait until sheep are hobbling. Catch within three days to reduce the spread to the rest of the flock.

Ewe nutrition

A ewe's daily energy requirement can generally be achieved from grazing alone, except during periods when grass supply is poor and/or nutritional requirements are high, such as in late pregnancy and lactation. Supply will be poor during winter, when grass growth almost halts, and during periods of extreme weather, such as drought or prolonged heavy rainfall. Don't cut corners – leaving sheep on bare pasture without supplementary feed will lead to health and production problems.

A ewe's requirements for energy and protein vary significantly during the year, depending on body weight and litter size – see Table 3.

Table 3. Approximate feed intake requirements of ewes at different stages of production

Stage of production	Feed intake requirements (% of body weight)
Dry	1.5
Late pregnancy	2
Lactation	3+

Pre-tupping

Make sure you check the condition of ewes in good time before tupping.

Top tips for pre-tupping:

- Allow six to eight weeks of good grass for a ewe to gain one unit of condition score, e.g. from BCS 2 to BCS 3 or 'a bit thin' to 'in good condition'
- Prioritise good-quality grazing for thin ewes and poorer-quality grazing for overfat ewes
- Before tupping, you may wish to 'flush' the ewes on high-quality grass and an energy source, which can increase ovulation rates – don't flush ewes that are too thin as they could end up having multiple lambs, which will result in issues later on

Tupping

Aim to have most of your ewes at target body condition before they go in with the rams. Ewes in poor condition may need supplementary feeding with conserved forage such as silage, a high-energy supplement such as concentrates or a high-energy feed block. Beware, not all ewes may use the feed block.

Top tips for tupping:

- Avoid sudden dietary changes or stressful situations before, during and after tupping
- Graze fat ewes tightly for up to 10 days before tupping to gradually reduce condition



Ram wearing a harness with blue raddle.

Early to mid-pregnancy

Maintain a level plane of nutrition for the first month after tupping.

Fertilised eggs are not implanted until three weeks after mating, so keep the diet stable and avoid stressful situations, such as handling. Stress could cause embryo loss.

Top tips:

- If supplements were fed during tupping, continue to do so to reduce the stress of changing diet
- During mid-pregnancy (2–3 months after tupping), ewes at target body condition should be maintained
- If grass growth or quality is reducing in this period, supplementary forage is essential

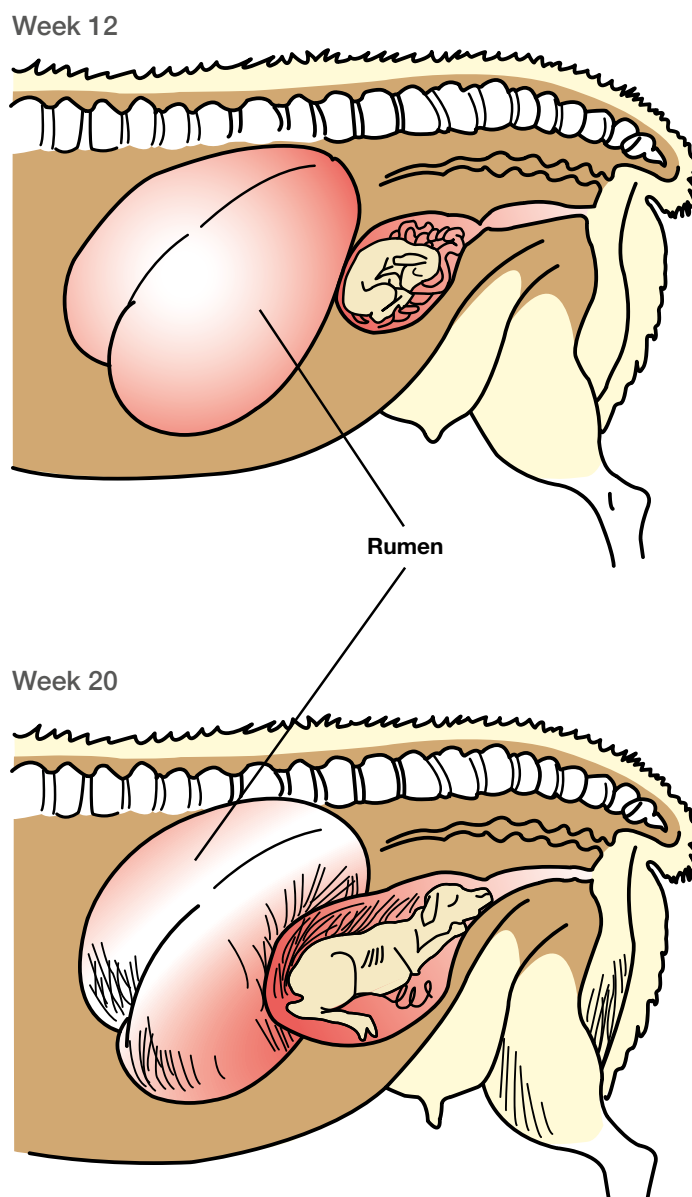
Late pregnancy to lambing

The energy and protein requirements of pregnant ewes increase significantly in the last six weeks of pregnancy. Home-grown conserved forage is usually the most economic feed for sheep in late pregnancy, fed alongside a compound feed.

Ewes carrying multiple lambs will require an additional source of high-quality protein for lamb growth and colostrum production.

Top tips:

- The compound feed must have a higher energy density than the forage offered – look at the ingredients list
- Do not feed mouldy forage as there is a high risk of listeria and abortion
- If feeding straw, generous levels of concentrates will be required to compensate for the low energy and protein content of the straw
- If you have chosen to pregnancy scan, you may wish to give single-bearing ewes a lower amount of compound feed to avoid large lambs



Growing lambs put pressure on the rumen, which can cause the ewe's appetite to fall. The nutrient density of the diet must increase to meet a ewe's nutritional requirements.

Failure to meet the ewe's nutritional needs at lambing can result in twin lamb disease. This normally occurs in twin- and triplet-bearing ewes. The ewe will mobilise her own body fat reserves, which releases ketones into the blood. As these build up in her blood, her appetite will decrease rapidly and she can quickly spiral downhill without prompt treatment. Look out for the early signs – ewes which don't get up to feed and those with a general depressed look, such as drooping ears.

Early lactation

Once she's given birth, the ewe's appetite can increase by 50% as pressure on the rumen has reduced. Housed ewes will require ad-lib forage, water and an increased compound feed allowance depending on the number of lambs they have. Ewes which have lambled outdoors will need different supplementation, depending on:

- Grass quality and quantity – at 4 cm or higher, extra feed may not be required, however you must consider the other points below
- Ewe body condition
- Number of lambs reared
- Weather conditions

It is strongly recommended that you consult a nutritionist before choosing a compound feed. They will be able to recommend a feed which is most suitable for your system.

For more information, see [Improving ewe nutrition for Better Returns](#).

Lambing

Close, quiet observation of ewes at lambing time is essential. Look out for problems such as prolapse, twin lamb disease, hypocalcaemia and ewes struggling to give birth. See the [Sheep diseases directory](#) for more information. There should be facilities on farm where sick ewes and lambs can be isolated and treated – outdoor lambing systems should make sure there are a few indoor pens available.

Normal lambing behaviour

Ewes exhibit certain types of behaviour when they are about to lamb, including:

- Pawing at the ground
- Alternate standing and lying
- Walking in circles
- Vocalisation/bleating
- Trying to steal lambs from other ewes

Labour is usually short but varies with litter size. The time between lambs arriving is normally about 20 minutes. Most ewes will lamb unaided. A normal presentation would be both front legs extended, followed by the head.



A normal presentation

Assistance should be given if labour for one lamb has lasted longer than one hour.

Hygiene

Maintaining good hygiene is essential to keep ewes, lambs and staff healthy. If lambing indoors, make sure pens have been disinfected and are well-bedded. Best practice is to clean each individual lambing pen out after use, disinfect, e.g. scatter powdered lime on the surface, and provide fresh, clean bedding.

Before examining the ewe, think cleanliness. Use arm-length disposable gloves and copious lubrication to manipulate lambs with minimal damage.

See [Appendix 1](#) for the full list of kit required before lambing commences.

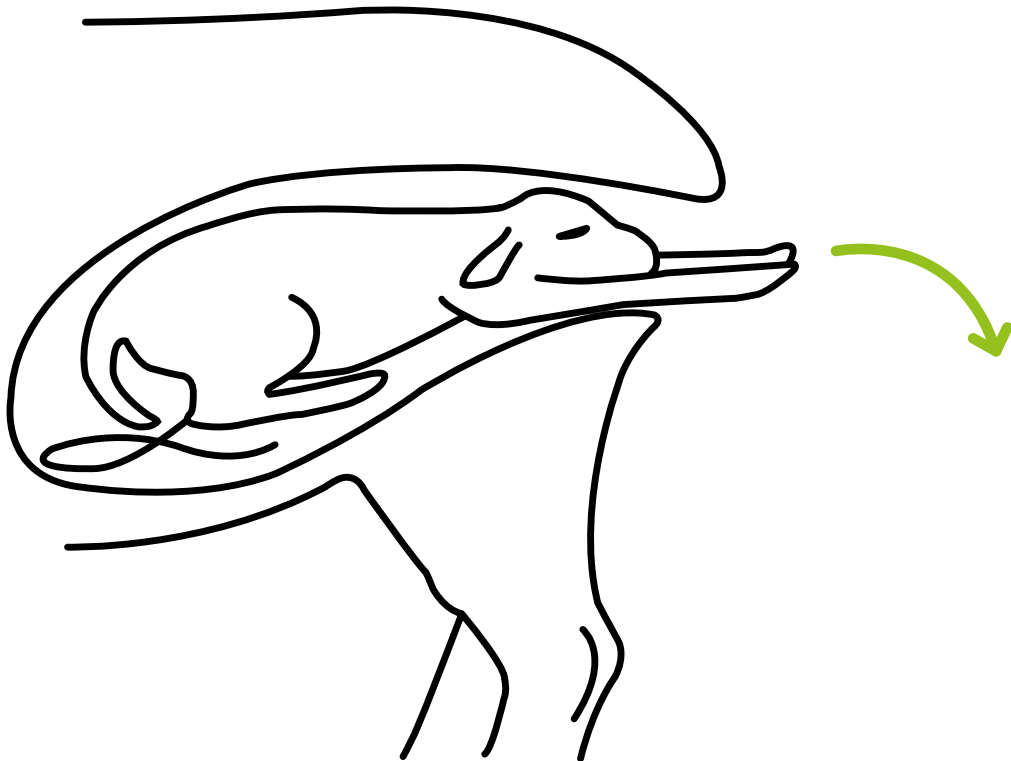
When to assist the ewe

A ewe will need assistance if:

- She's been in labour for one hour and there is no sign of the water bags
- There's no sign of a lamb an hour after the rupture of the water bags
- If the lamb appears to be wedged in the birth canal or if there is an abnormal presentation

You should be trained before attempting to assist the ewe. Your vet may be able to recommend or provide a lambing course.

Pull the lamb in a downwards arc, rather than straight out. Do not use excessive force. Multiple births are common and two lambs may be presented with legs intertwined.

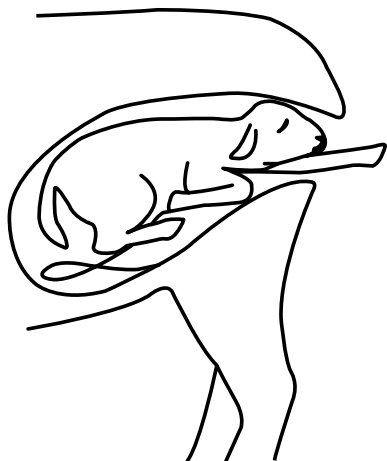


Abnormal presentations

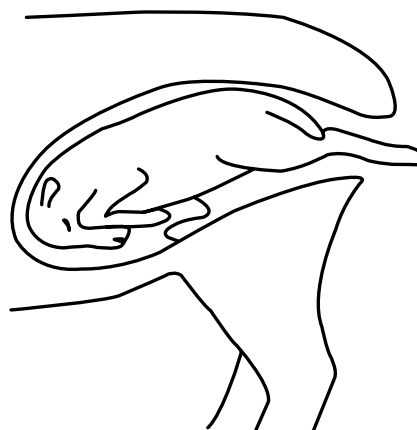
Always make sure that the legs and head are part of the same lamb before attempting to pull it.

Abnormal presentations must be corrected before attempting to pull the lamb.

One leg back



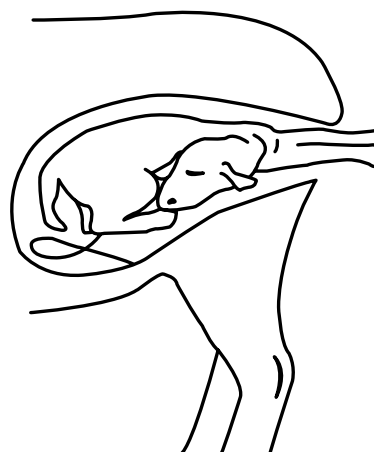
Hind legs only



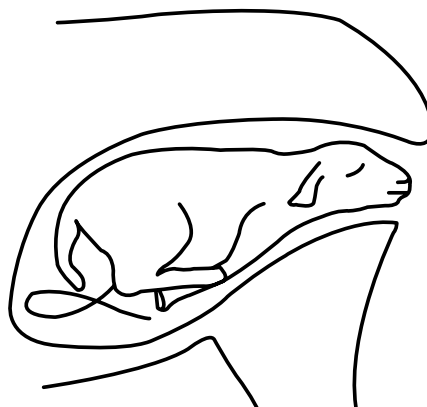
Breech position



Head back



Both front legs back



Severe damage can be caused through inexperience when assisting a ewe. If you are unsure, call the vet immediately.

Aftercare

After birth there are some essential steps to maximise lamb survival:

- Check the lamb is breathing – clear its nostrils from mucous
- Treat the lambs' naval with 10% iodine solution and repeat at least once, two to four hours later – dip the navals of all lambs born indoors to minimise the risk of infection
- Make sure lambs receive colostrum immediately after birth – a healthy lamb should be trying to walk and suck after a few minutes
- If the lamb is cold, warm the lamb first before feeding colostrum
- If extra colostrum supplies are needed, colostrum from another ewe in the flock is preferable to artificial colostrum
- Do not overheat when thawing out frozen colostrum, as this destroys the vital antibodies. Defrost slowly in a water bath

For more information, see [*Reducing lamb losses for Better Returns*](#).



Colostrum

Taking in sufficient colostrum is vital to provide the lamb with essential immunoglobulins and to protect against clostridial and other diseases, depending on the ewe's vaccination status. Lambs are not born with an immune system so they can only acquire it from colostrum and then build immunity over time. Colostrum also provides energy, proteins, vitamins and minerals. It is nutritionally complete and a natural laxative.

- Every lamb needs 50 ml/kg of ewe colostrum in the first four hours of life
- In 24 hours, a newborn lamb must receive the equivalent of 200 ml/kg body weight in colostrum

Recording ewe and lamb performance

Record the performance of your flock from scanning percentages to lambs sold on the [*Sheep records*](#) sheet. If you'd like to record extra details such as body condition scores and grassland costs, use the [*Flock notebook*](#), also available in hard copy.

Weaned lambs

When to wean?

Lambs are usually weaned at 12–14 weeks of age. From eight weeks of age, a lamb's energy intake is greater from grass than from milk, so competition for high-quality grass between ewes and lambs reaches a critical point. At this stage, assess ewes and lambs. Use the decision tree below to help with your weaning decisions:

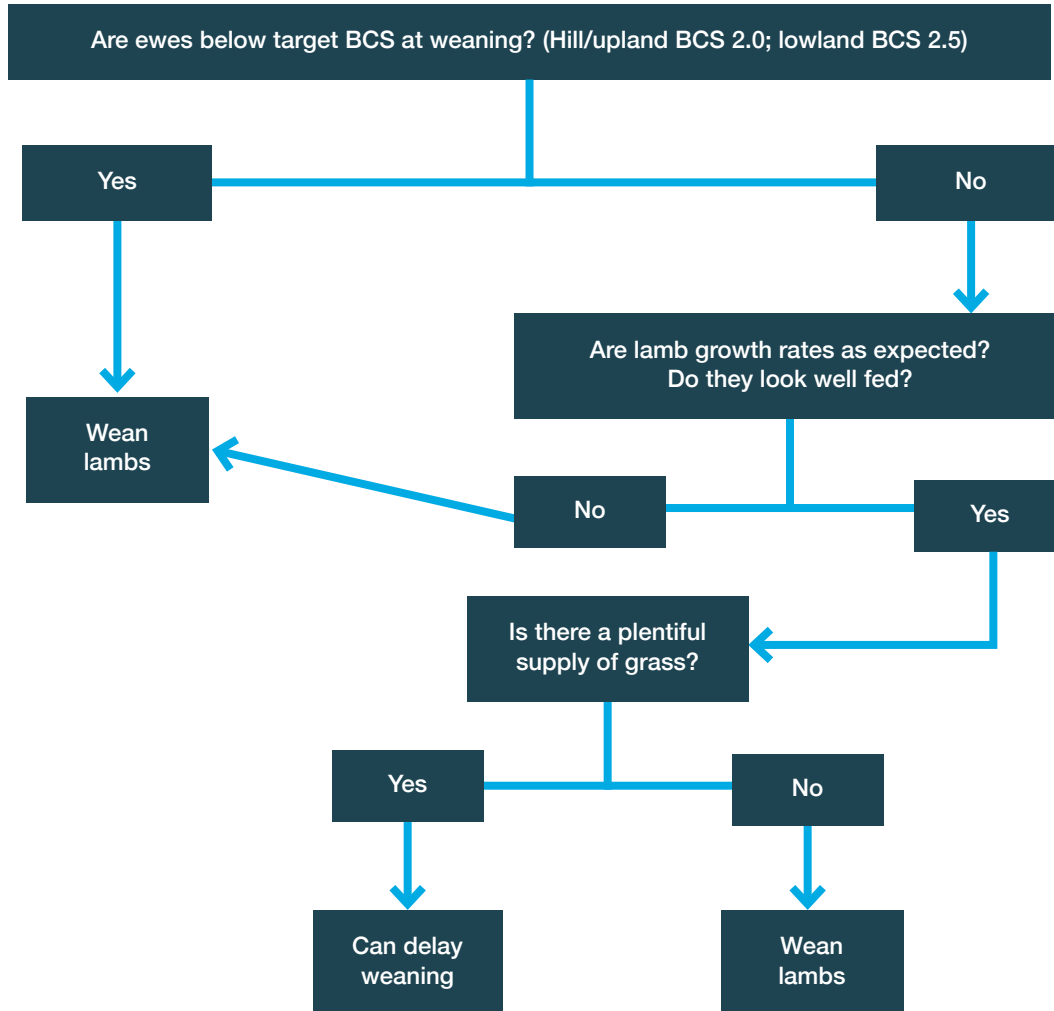


Figure 4. Weaning decision tree

The decision on when to wean should be determined by ewe body condition, feed availability and lamb growth rates. These factors change every year, so the ideal weaning date cannot be set in stone. Any treatments, such as vaccines or wormers, should be given before weaning as stress can affect the immune response, especially to vaccines, making lambs more susceptible to disease.

Diet

If you plan to finish lambs on crops such as red clover, chicory or brassicas, consider introducing lambs to this feed while still with their mothers. They should perform better when exposed to the feed once weaned. Immediately post-weaning, it's advisable to put lambs onto a pasture they know and out of sight of the ewes.

Once they have settled, they can be moved onto pasture with a low worm burden or forage crop. If you are creep feeding lambs, the aim is to sell 60% of lambs before weaning.

The following guides may be helpful when deciding which cover crops to use for lambs: [*Using brassicas for Better Returns*](#), BRP+ [*Using chicory and plantain in beef and sheep systems*](#) and the [*Home-grown forage directory*](#).

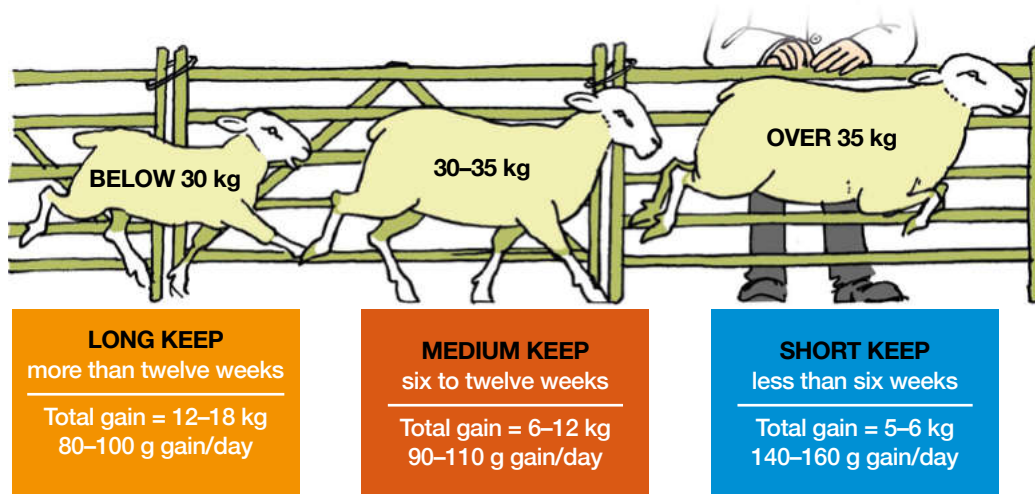
Monitoring growth rates for finishing lambs

Regular, gentle handling of lambs at the key points (see page 32) is essential. Depending on your situation and system, you may wish to invest in a set of weigh scales. Target growth rates for lambs up to eight weeks of age should be greater than 250 g per day, although this can vary depending on the system.

Example:

If a lamb (with a 4 kg birth weight) gained an average of 250 g/day from birth to eight weeks (56 days), it would weigh 18 kg.

Post-weaning, daily liveweight gain targets will vary depending on the age/size of the lambs.



On farms with breeding ewes, it is important that ewes have enough time on unrestricted grazing to regain body condition and to be on a rising plan of nutrition for tupping. If extra winter feed needs to be bought in to replace the feed eaten by the weaned lambs, it may be more cost-effective to sell the lambs earlier. A store lamb will eat nearly the same amount as a dry ewe. If lambs aren't growing as expected, there may be a health issue, such as parasites or insufficient grass.

Target for grass-based systems = >70% of lambs to be sold (finished or as stores) by tupping.

For more information on feed options, planning and costs, see [Growing and finishing lambs for Better Returns](#).

Lamb selection

Selection for breeding

It is assumed that ewe lambs are not mated when less than seven to eight months of age. Conception rates would be too low due to their young age and lighter body weight.

Top tips for selecting homebred replacements:

- Select ewe lambs which are on track to be 60% of their mature body weight at mating
- Select shearlings which are on track to be 80% of their mature body weight at mating
- Don't keep replacements from ewes which are poor mothers, persistently lame or produce weak lambs

Strongly consider whether you have the time to lamb your replacements as ewe lambs – it is hard work. Monitor carefully close to lambing. They may require additional help after lambing, especially if they have twins – a ewe lamb should only rear one lamb in her first year to allow her to continue to grow frame.

Selection for slaughter

Understanding market requirements and what your particular buyers are looking for, whether you choose to sell liveweight or deadweight, is vital. The type of lamb a supermarket buyer is looking for can be different to that wanted by a local butcher. For lamb box schemes, ensure an appropriate abattoir has been identified at the outset and consider what cuts to include and if this changes with season.

Lambs should be presented for slaughter in a clean condition, to minimise the risk of carcass contamination. Sheep over 12 months of age will need to have their carcass split. This is currently calculated as when the first permanent incisor erupts, although there is talk of changing to a calendar date in future. It's essential to get lambs away before this point as whole lamb carcasses tend to attract a premium price against a carcass that has been split.

Liveweight

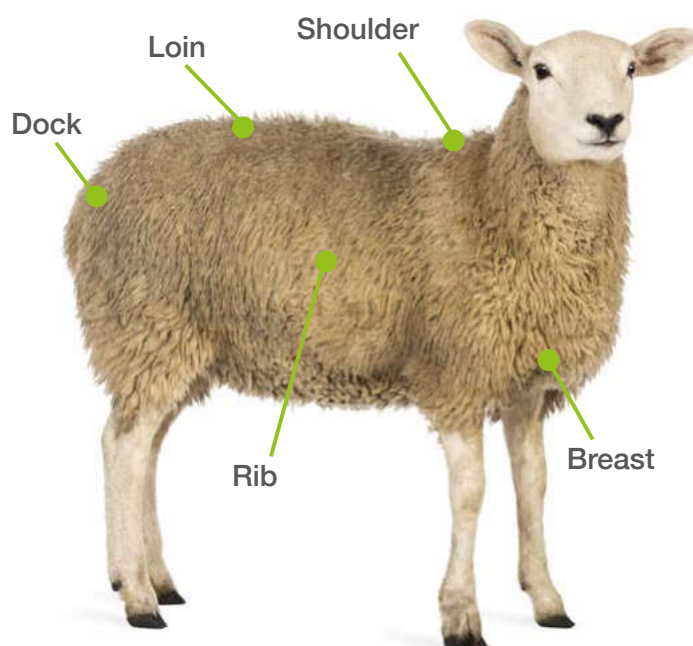
A live market will have a variety of buyers looking for different specifications of sheep, so it's important that lambs and ewes are marketed in even batches. Every lamb in the group should be of a similar conformation, finish and weight, so buyers can select the animals they require. For smaller flocks, batching in this way may not be possible. However, once a lamb is ready, they need to be sold, so if the market isn't too far away, it's worth taking even a couple of lambs if they are finished to avoid them going overfat. Monitor liveweight prices on the AHDB [market pages](#).

Deadweight

Most deadweight plants will classify carcasses against the EUROP grid and payment based on the associated price grid, although there will be exceptions to this. Generally, there will also be parameters for carcass weight, etc. with most plants paying to a maximum of 22 kg, but this can vary between plants. It's also important to check what dressing spec is being used as this is an important consideration when comparing prices with other plants or against published price reports. Feedback on carcass issues, such as liver rejections, etc. is useful information as it can give an indication on any health and potential productivity issues. Monitor deadweight prices on the AHDB [market pages](#).

How to select lambs

Lambs should be selected by focusing on the various handling points, i.e. dock, loin shoulder and ribs, to assess the potential carcass classification. At this stage, fat is the key area to consider and once the lamb is deemed ready for the intended market it should be sold.



Handle lambs gently – this is vital for animal welfare and avoids bruising damage that shows up after slaughter.



Bruising on a carcass

For more information on selecting lambs for slaughter, see [Marketing prime lamb for Better Returns](#) or look at our interactive [Virtual selection tool](#).

Appendix 1 – lambing checklist

Use this checklist to make sure you have everything you need before lambing starts:

Equipment	✓
Lambing snare or lambing ropes	
Lubricant and disposable long sleeve gloves	
Prolapse harness and spoons	
Strong iodine solution	
Sterile needles and syringes	
Thermometer	
Stomach tube, bottle and teat	
40% glucose (dextrose) solution for injection	
Calcium borogluconate solution	
Twin lamb oral supplement for ewes, e.g. propylene glycol	
Colostrum supply (ideally ewe colostrum) artificial ewe colostrum substitute, or pooled colostrum from Clostridial-vaccinated cows	
Electrolyte sachets	
Sterilising solution for feeding bottles and stomach tubes	
Medicines as directed by the vet	
Disinfectant for floors and surfaces	
Reliable and readily available source of hot water	
Hand wash	
Warming box	
Notebook, chart or other recording system for recording lamb and ewe losses, medication given and notes about ewes	
Phone number of the vet	
There should be hospital facilities on the farm where sick lambs or ewes can be isolated and treated	
Ear tags and taggers	

See the AHDB website ahdb.org.uk for the full list of Better Returns Programme publications for beef and sheep producers.

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