



Better Returns
Programme

EBLEX SHEEP BRP MANUAL 11

Target ewe fertility for Better Returns



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Picture P19: Courtesy of Messrs Lord

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**Better Returns
Programme**

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2 Establishing optimum fertility for your flock

Fertility is one of the main drivers for profit in the sheep flock and certainly a key measure in assessing a flock's production.



3 Recording performance

Surveys show that the national performance of the English flock has remained static for some years whilst other countries, particularly New Zealand have gained marked improvements. This highlights the need to look at the challenge of managing fertility.



4 Making the most of genetic potential

Tackling fertility means taking a fresh look at your whole system; then setting realistic targets for improvement that are in line with the resources that you have available.



5 The sheep production calendar

For instance, while achieving 1.8 lambs, or more, per ewe may be the right target for a system with adequate forage, housing and labour; a more modest target may give better returns to a more extensive sheep business.



6 Ewe MOT

This EBLEX Sheep Better Returns manual follows the ewe through from the weaning of one lamb crop to the birth of the next. It aims to provide you with ideas to encourage you to think about your own system and, of course, guide you to Better Returns.

7 Factors affecting fertility

14 Health issues at lambing

18 Breeding from ewe lambs

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D Raine

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Board Member
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Establishing optimum fertility for your flock

The number of lambs reared will influence a farm's profitability but care is needed to ensure an increase in output is not accompanied by a disproportionate increase in costs.

Increasing the lamb crop within the range 1.5–2.5 lambs/ewe is likely to increase profit. However, every flock has an optimum level of fertility which is influenced by factors such as:

- farming system
- availability and quality of grass and silage
- labour and skill level

Aim to wean a ewe's weight in lambs



High lambing percentages make sense where there is adequate forage, feed and the skill to manage an intensive system.



A lower lambing percentage can lead to heavier lambs that are finished more rapidly – ideal where forage is limited.

Lambing percentage or numbers reared?

Both lambing and rearing percentages are important measures of a system's performance.

$$\text{Lambing percentage} = \frac{\text{number of lambs born}}{\text{number of ewes put to the tup}} \times 100$$

$$\text{Rearing percentage} = \frac{\text{number of lambs reared}^*}{\text{number of ewes put to the tup}} \times 100$$

* reared = sold as finished or store lambs, or sold/retained for breeding

Differences in lambing and rearing percentages will affect the financial performance of the flock.

Snapshot What If? – example for lowland flocks

Lambing %	150%	150%	200%	200%
Rearing %	140%	130%	190%	180%
Lamb mortality	10%	20%	10%	20%
Output	£53.09	£46.43	£73.00	£64.12
Gross margin	£32.85	£26.19	£50.76	£41.88

Recording performance



Strengths and weaknesses of your system will be highlighted through recording and analysis.

Good records can be compared with national benchmarks, but bear in mind differences in systems and resources.

What the records mean

Comparing **lambs born** with **lambs scanned** indicates the number of lambs lost during pregnancy through absorption, abortion or born dead. This can point to underlying issues such as disease or nutrition.

Comparing **lambs turned out** with **lambs born** indicates how many lambs are lost in the first few days of life. This may highlight underlying issues related to health, hygiene or colostrum intake.

Comparing **lambs weaned/sold** to **lambs turned out** indicates mortality over the first few months. This can highlight health problems, eg inadequate control of worms or infectious diseases.

Comparing performance against standards

	System standards			Your flock	
	Lowland	Upland	Hill	Current	Target *
A Ewes and ewe lambs tugged	100	100	100		
B Lambs scanned	195	175	116		
C Lambing percentage	183	166	112		
D Lambs turned out	172	156	104		
E Rearing percentage	168	151	100		
Lamb losses					
Scanning to birth (B–C)	12 (6%)	9 (5%)	4 (4%)		
Birth to turn-out (C–D)	11 (6%)	20 (6%)	8 (7%)		
Turn-out to weaning/sale (D–E)	4 (2%)	5 (3%)	4 (4%)		
Birth to sale (C–E)	15 (8%)	15 (9%)	12 (11%)		
Scanning to sale (B–E)	27 (14%)	24 (14%)	16 (14%)		

* Assume 10–15% improvement in each case.

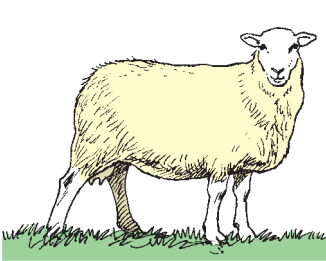
Source: LSSC

Making the most of genetic potential

Genetics influence how an individual animal performs in a flock. Genetics affect many production traits from health to feed use efficiency, as well as fertility. It is important to identify genetic strengths and weaknesses within a flock, then set flock objectives that exploit the benefits of genetic traits.

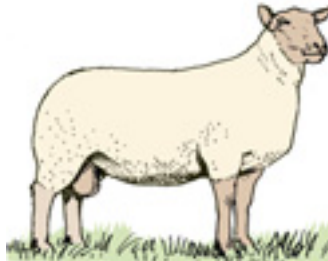
Select breeding stock in the top third for traits of interest.

Genetic traits that may influence ewe fertility



Ewe traits

Early maturity
 Out of season breeding
 Fertility – including ovulation and conception rate
 Number of lambs born*
 Lambing ease
 Maternal behaviour (lamb survival)
 Maternal ability (milkiness)*



Ram traits

Early maturity
 Out of season breeding
 Libido
 Sperm production



Lamb traits

Lamb vigour

*EBVs can be used to influence these traits


Breeding can improve all these traits by exploiting:

- within-breed differences (using EBVs)
- hybrid vigour
- genetic differences between breeds

Where strategic changes are planned, eg out-of-season breeding, mating ewe lambs or moving to a low labour system, greater changes in the genetic merit of the ewe and ram may be needed.

The sheep production calendar

Aim to optimise the number of lambs finished or sold from each ewe by careful management and planned activities.

Dry (months 1–3)	Post weaning (MOT ewes)	Split ewes in groups according to body condition, and identify pasture that will enable ewes to be at optimum score at tugging. 
	Tupping	Flush ewes on good quality feed for 3 weeks before tugging to boost ovulation rate.
		Introduce rams to ewes, and monitor each ram's performance to ensure they are working.
Pregnancy (months 4–8)	Early pregnancy	Prevent ewes losing condition or abrupt changes in nutrition of pregnancy by having good grazing management and rationing, as stress can affect implantation of embryos.
	Mid pregnancy	Use scanning data to separate ewes into groups depending on the number of lambs and lambing date, and nutrient requirements.
	Late pregnancy	Feed ewes to meet requirements. Colostrum and milk production will be maximised and lamb(s) will be more vigorous if fed correctly.
Rearing (months 9–12)	Lambing	Maximise lamb survival Record details of lambing ease, mothering ability and lamb vigour, and identify ewes for culling.
	Lactation	Ensure feed requirements of lactating ewe are met, and realise how requirements change depending on number of lambs.
	Weaning	Dry ewes off quickly, either putting them indoors on straw and water or onto a bare pasture for a few days – check carefully for signs of mastitis.

Factors through the entire production year will affect ewe fertility, so it is important to understand what management changes could optimise your flock's fertility.

Monitoring body condition score and ensuring 90% of ewes are on target will significantly benefit flock fertility. Nutrition during pregnancy can influence numbers of lambs carried to term, subsequent survival and growth rates.

Ewe MOT

Rigorous culling, that ensures only ewes fit for breeding are retained, is vital to flock profitability. No ewe should be retained if it is unlikely to rear lambs next season. Bringing in better stock will raise flock performance.

Through the year, permanently mark or tag ewes if they have a problem that renders them unsuitable for further breeding (eg prolapse, mastitis). In flocks with individual ID, record the number. Records and identification are key to successful culling. Colour coded ear tags for each year is a useful aid to culling efficiently on age.

Six main reasons for culling

1) Body condition

Lean ewes (BCS of less than 3 at weaning) should be culled, if condition is not regained a month after weaning—they are unlikely to regain condition before tupping.

Overfat ewes (BCS of 4–5 at weaning) may be barren or not reared lambs last year. If possible, check records to ensure the ewes are productive; if not cull, but they may need slimming down.

2) Udders

Mastitis—ewes with lumpy or hard udder(s), or current infections, should be culled. They will not yield enough milk.

Low or slack udders, or large teats—may cause problems, as the lamb may struggle to locate teats without assistance. Risk of mastitis is higher.

3) Reproductive problems

Barren (including abortions). Only consider retaining a ewe if the cause of abortion is known.

Ringwomb—likely to recur.

Prolapse—likely to recur.

4) Teeth

Teeth problems mean a ewe may not maintain own body condition let alone rear lambs as grazing and cudging is difficult.

5) Feet

Lameness—investigate and treat, but cull if the ewe does not respond to treatment.

Footrot—cull sheep that have been infected more than twice.

6) Lambing score

Lambing ease—cull if need lambing assistance.

Mothering ability—cull if leaves lambs or makes suckling difficult.

Actions

- Efficient culling can increase flock performance by increasing lamb output, reducing lambing problems and vet/med costs, and ensuring lambs get enough milk.
- Consider selling culls when price is higher provided resources are adequate and returns outweigh costs.
- Use permanent marks or tags to identify readily ewes which have had problems during the year.

Factors affecting fertility – the dry period

Body condition score

Body condition at mating directly influences ovulation and conception rate. The dry period (after weaning/drying-off until tupping) is when the focus needs to be on getting over 90% of ewes in optimum body condition (BCS 3–3.5*). Ewes that are too fat, or too thin, suffer reduced fertility and are less able to rear lambs successfully.

	Hill ewes	Upland ewes	Lowland ewes
At weaning	2	2	2.5
At tupping	2.5	3	3.5
Mid-pregnancy	2	2.5	3
At lambing	2	2.5	3

Action

- Segregate ewes post weaning into three groups—fat (>3.5)*, fit (3–3.5)* and thin (2.5 or less)*.
- Identify pasture that will enable ewes to reach optimum score (3–3.5)* by tupping.
- Realise that to gain 1 BCS, a ewe needs access to unrestricted grazing for 6–8 weeks

*Targets are for lowland flocks.

Ram MOT

Rams need to be fit to breed. Flock fertility needs both ewes and rams in the correct condition.

The four Ts: Teeth, Toes, Tone and Testicles.

Teeth – if teeth are lost or become long or thin the ram may not eat well enough to gain weight before or after tupping. If body condition is not maintained, performance may suffer and he will need culling.

Toes – lameness affects ability to serve. Feet may need trimming and foot bathing to prevent or treat problems. Check older rams for arthritis.

Tone – rams' body condition score should be between 3.5 and 4.0 (1 = very thin and 5 = very fat) as tupping starts. Good condition is vital as 15% of bodyweight can be lost in six weeks of tupping. Too much loss of condition will affect performance.

Testicles – should be large and as firm as a flexed bicep. Large, firm testicles produce 80% more semen each day than medium-sized, soft ones. If more semen is produced, he is more fertile and fewer rams will be needed to serve the flock.

Note: the semen production cycle takes about 7 weeks. Ensure ram is healthy at least 7 weeks before tupping.

Actions

- Examine rams 10 weeks before tupping begins to allow time to remedy problems or source replacements.
- Provide shade for rams to avoid heat stress affecting sperm viability.
- Feed high quality protein supplement (16% crude protein) for 6–8 weeks to improve testicle tone and boost semen production.



Factors affecting fertility – pre-breeding

The ewe's reproductive cycle lasts around 17 days, with oestrus (fertile period) lasting 2–3 days. Ewes are 'short-day breeders', ie decreasing daylength stimulates breeding. A few breeds, eg Dorset Horn, Polled Dorset, will conceive outside the normal September–January season without hormonal assistance.

Low bodyweight and poor condition delay cycling and onset of breeding season, particularly in ewe lambs. Oestrus activity may also be reduced in fat ewes.

Ovulation rate is influenced by age, breed, stage of breeding season and nutrition.

- Nutrition and body fat reserves are closely related to ovulation rate. High protein supply increases ovulation rate. Prolonged under-nutrition can have long-term effects.
- Younger ewes tend to have lower ovulation rates.
- Ovulation rate reduces as the breeding season continues.
- Some breeds, eg Romanov and Cambridge, have been selected for increased ovulation rates.

Flushing – increasing nutrition with forage or concentrates before breeding – increases ovulation rate in ewes and sperm production in rams. It is most effective when body condition is on target. Improved nutrition is needed for at least one cycle (2–3 weeks) to influence ovaries to release more eggs.

Note: Do not flush on pastures containing red clover as it contains oestrogens that will affect ovulation rates. Keep ewes off red clover pastures for three weeks before and after tupping.

Proximity to rams will stimulate ewes to cycle and ovulate earlier (3–4 weeks). Pheromones from the ram stimulate ovulation in the ewe. This 'ram effect' can be achieved by housing and grazing rams nearby ewes.

Alternatively, a **teaser** (vasectomised) ram can be run with ewes from 17 days before tupping is planned to start. One teaser per 100 ewes is sufficient. After 15–16 days, teasers are removed and replaced by entire males. This will coincide with the ewes' first true heat and most successfully mate in the first cycle. Using a teaser helps synchronise ewes so that the lambing period is more compact.



Actions

- Ensure body condition targets are met for maximum ovulation rate
- Consider using a teaser to improve the ewes' synchronicity.

Factors affecting fertility – tugging

The average lowland ewe:ram ratio is 40:1, but can be as high as 80:1 to 100:1 in some systems. With the right 'fit' ram many more ewes can be served.



Cost of ram (£/lamb)

Ram cost per lamb varies greatly depending on ewe: ram ratio and ram longevity.

		Flock life of ram (years)			
Ewes/ram		1	2	3	4
	40	£7.50	£3.75	£2.50	£1.88
	60	£5.00	£2.50	£1.67	£1.25
	80	£3.75	£1.88	£1.25	£0.94
	100	£3.00	£1.50	£1.00	£0.75

Assuming 150% rearing percentage and £450/shearing ram

Source: LSSC

While cattle breeders appreciate the value of compact calving periods (12 weeks or less), there has been little focus on the financial benefit of a compact lambing period. Benefits include:

- ewes with similar requirements for feed
- reduced labour costs in a concentrated period
- similar-aged lambs require similar treatments, eg vaccination
- batching lambs to hit periods of high market returns.

A compact lambing period requires both ewes and rams with good condition and fertility.

A compact lambing period increases demand on rams. However, rams in good condition and selected from flocks with good levels of libido and fertility should cope. Labour demand will be high, and optimum lambing management is needed. This needs to be combined with rigorous culling and selection of ewes for good maternal ability, milkiness and lambing ease.

Actions

- Determine ewe:ram ratio, and seek to increase ewes per ram without compromising fertility.
- Calculate average lambing period, and identify ways to reduce it, eg removing rams after 36 days, or culling ewes served late.
- Use raddles to check ram's progress. Change raddle colour every 9–10 days for best results

Factors affecting fertility – early pregnancy

Aim to prevent embryo loss during this period

Ovulation occurs 12 hours after oestrus and fertilisation up to 24 hours later. However, implantation in the uterus does not occur for another 15 days. Any change in condition, diet or stress can impair implantation and reduce conception rate. On average, 15–30% of eggs shed at ovulation fail to develop. While some are not fertilised, many more fail to implant.

Nutrition has an important effect on embryo mortality. Poor feeding or body condition before mating increases embryo loss and barrenness. Remember, high feed intake in early pregnancy can also lower conception rates.

Feed composition matters. Selenium deficiency and excessive phosphorus increase embryo loss; as does grazing ewes in early pregnancy on red clover, kale or rape.

Embryo mortality is higher in young ewes as well as ewes subjected to climatic stress (heat, high rainfall, cold).



Actions

- Prevent ewes losing condition and avoid abrupt changes in nutrition in the first month of pregnancy.
- Utilise good grazing management and rationing for 3-4 weeks after rams are removed.
- Allow thin ewes to gradually gain some body condition to ensure targets are being met.
- Avoid stress associated with handling or moving fields in early pregnancy.
- Take particular care of ewe lambs.

Factors affecting fertility – mid pregnancy

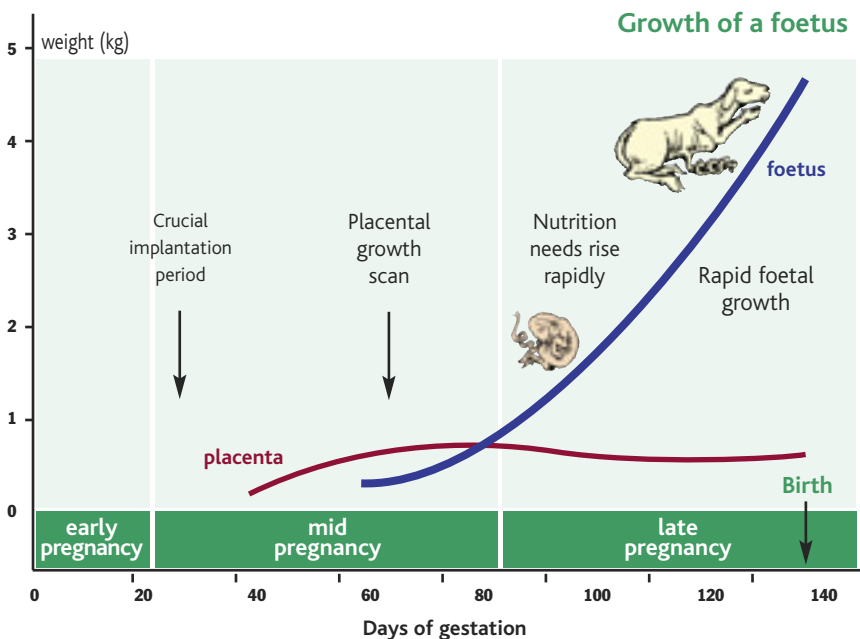
Aim to optimise the development of the placenta

Adequate nutrition is needed as the placenta develops. Ensuring maximum placental size will lead to good lamb birth weights.

Pregnancy scanning can improve pregnancy management and contribute to the overall fertility management programme.

Scanning (normally around 70 days) identifies barren ewes with 100% accuracy. Culling these animals will reduce feed requirements. The number of lambs being carried can be identified with 90–95% accuracy enabling ewes to be grouped and fed according to body condition and litter size.

After lambing compare scanning results with the lambing percentage. Large differences need a management review of feeding, health planning, and handling.



Actions

- Avoid ewes losing or gaining over 5% of their bodyweight (1/2 BCS) during this period.
- Manage thin and fat ewes to ensure their body condition targets are met.
- Use body condition and scanning results to group ewes for feeding
- Calculate scanning percentage

Factors affecting fertility – late pregnancy

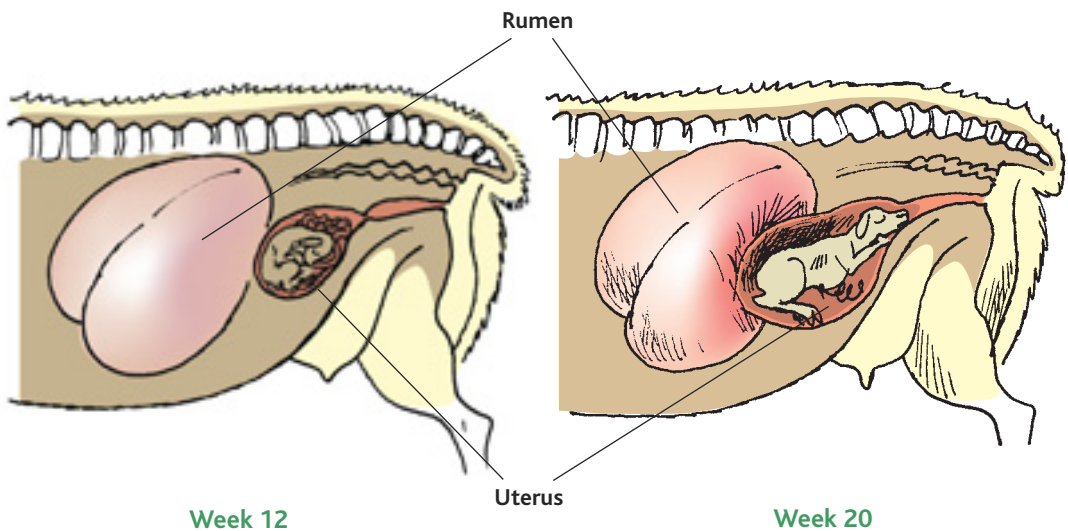
Aim to meet the rapidly growing needs of the foetus in the last eight weeks of pregnancy.

The last eight weeks of pregnancy are vital for a successful lamb crop as:

- 70% of foetal growth occurs
- udder development occurs
- colostrum is formed

Low birthweight and/or low colostrum are major causes of lamb death in the first few days.

Nutrition is critical as the ewe's energy and protein requirements increase rapidly – more than doubling for ewes with twins. However, as lambs grow the ewe's ability to eat bulk reduces. Therefore, the ration's nutrient density must be increased gradually to keep pace with foetal requirements.



Actions

- Ensure body condition score falls by no more than 1/2 BCS in late pregnancy.
- Feed scanned ewes according to litter size – group according to nutrient needs eg lambing date and age.
- Monitor body condition regularly.
- Segregate lean ewes to receive preferential feeding.
- Feed to maximise colostrum, milk production and lamb vigour.

Factors affecting fertility – lambing

Aim to maintain lambing percentage with good hygiene

Lambing percentage – the number of lambs born alive over the number of ewes tupped – is influenced by how many lambs reach full term as well as disease management and genetic traits such as lambing ease, maternal behaviour and lamb vigour. Nutrition remains important.

Health planning is essential. For example, if either enzootic abortion or toxoplasmosis are a threat, then a vaccination programme with veterinary advice is needed. But vaccinate at least four weeks before tupping to ensure that pregnant ewes are not treated with live vaccines.

Be prepared for lambing. Equipment and colostrum supplies should be on hand along with enough labour (1 person per 250 ewes indoors; 350–600 outdoors depending on system), sufficient lambing pens indoors (As a guide, one pen for each 5–8 ewes) and a 'hospital area'.



Maintain hygiene by:

- keeping equipment clean
- washing hands and disposable gloves.
- bed lambing pens/area well
- disinfect pens between ewes

- treat lambs navels with a strong iodine solution, preferably alcohol-based.

A good colostrum intake in the first 24 hours is vital to newborn lamb survival. It provides energy and other nutrients, passive immunity and is a laxative.

Actions

- Consult your vet on a health plan to control diseases that affect lambing success.
- Make hygiene a priority at lambing.
- Record details of lambing ease, mothering ability and lamb vigour, and identify ewes for culling. This information will aid decisions on selecting replacements, and reduce feed costs associated with unproductive ewes.

Health issues at lambing – imbalances

Pregnancy toxæmia (Twin Lamb Disease)

Caused by an inadequate energy supply during a time of very high demand (70% of foetal growth occurs in the last eight weeks). It is most common in multiple bearing ewes during the last few weeks of pregnancy.

Affected ewes lack energy, so may stand still or lean against objects for long periods, may kneel or sit like a dog, may make little or no attempt to escape when being caught, and may stagger with heads pointing upwards. Their head may twitch or tremble and they usually refuse to eat or drink

Treatment: Initially energy solution or glucose/propylene glycol drench should be given. Then 100ml of 20% calcium borogluconate, with added magnesium and phosphorous should be administered subcutaneously over 2–3 sites. Consult vet, if sheep does not respond.

Prevention: Correct feeding to meet requirements, which may involve grouping animals by tupping date, scanning results or body condition during pregnancy. Feed and forage analyses are crucial to ensure ration is correctly balanced with energy and protein sources.

Hypocalcaemia (Lambing sickness)

Caused by a rapid drop in calcium, due to increased demand, during late pregnancy and lactation. It is more common in older ewes which cannot use body stores as efficiently.

Affected animals have tremors, appear very excitable and nervous. They collapse, generally on their belly with hind legs stretched out behind with head down, drooling with shallow breathing. Death follows.

Treatment: 100 ml of 20% calcium borogluconate, with added magnesium and phosphorous, subcutaneously over 2–3 sites. Consult vet, if sheep does not respond.

Prevention: Adequate, but not excessive, levels (5–10g/day) of calcium in pre-lambing diets, which are introduced gradually 6–8 weeks before lambing.

Hypomagnesaemia (Grass staggers)

Caused by low magnesium levels. Generally seen in sheep between lambing and peak lactation, and ones recently turned out onto pastures low in magnesium.

Early signs include a stiff, stilted walk, tremors of the face, frequent urination and agitation. Collapse follows and they usually lie on their sides with legs straight out, head back and neck rigid, then suffer convulsions and death. Onset is very quick, so the first sign may be a dead sheep.

Treatment: 50ml of 25% magnesium sulphate, plus treatment for hypocalcaemia, subcutaneously over 2–3 sites. Consult vet, if the sheep does not respond.

Prevention: Use magnesium feed supplementation or boluses. Encourage clover growth which has higher magnesium content than grass.

Nutritional Muscular Dystrophy (White muscle disease)

Caused by low levels of selenium or vitamin E during pregnancy. Affected lambs are born dead or weak. Surviving lambs will tremble and be uncoordinated. Correct diagnosis is important.

Treatment: Selenium and vitamin E boluses or injections.

Prevention: Supplement carefully with selenium and vitamin E, especially during pregnancy.

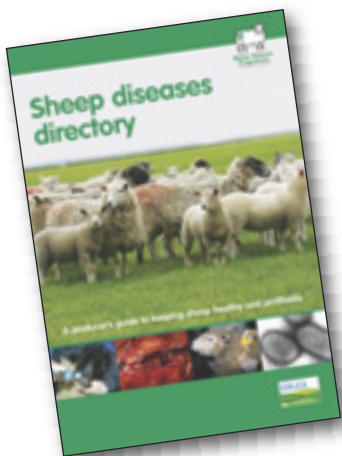
Note: oversupply can be toxic.

Swayback

Caused by copper deficiency in ewes causing defects in the developing lamb's nervous system. Lambs may be born dead or die shortly after birth. Survivors may not be able to stand and be uncoordinated, which can affect their ability to suck and keep up with mothers. Correct diagnosis is important.

Treatment: None, as damage has been done.

Prevention: Copper by bolus or injection to ewes around tupping. Note: oversupply can be toxic.



Actions

- Identify any deficiencies or toxicities through blood, soil and forage analysis.
- Match mineral and vitamin supplementation to requirements.
- Collect information on the prevalence of diseases.

Health issues at lambing – abortions

Enzootic Abortion of Ewes (EAE) – responsible for 52% of infectious abortions.

Caused by bacteria (*Chlamydia abortus*), and can result in full term still born or weak lambs, but can affect litter mates to different degrees, eg one dead and one alive.

Transmission: From sheep to sheep, perhaps from bought-in replacements. It is only transmitted at lambing time as pasture/ bedding is contaminated by aborted/infected lambs. Sheep and lambs that have been infected will be carriers.

Action: Follow the standard procedure for aborted sheep. Do not keep infected sheep or their lambs for replacements, and isolate aborted sheep for at least 3–4 weeks. Vaccinate all sheep at least 4 weeks before tupping. Have a vaccination programme for all replacements as part of flock health plan.

Toxoplasmosis – responsible for 25% of infectious abortions.

Caused by a protozoan parasite (*Toxoplasma gondii*). If infection occurs in:

early pregnancy – the embryo dies and is reabsorbed

mid pregnancy – the foetus dies and is mummified, and other foetus may be compromised

late pregnancy – full term still born or weak lambs.

Transmission: Cat to sheep, perhaps through contaminated feed, water or pasture with cat faeces. Young cats become infected when they start to hunt, older cats have immunity.

Action: Follow standard procedure for aborted sheep. Isolate aborted sheep from pregnant ewes, but they can be kept with lambed sheep. Keep cats away from feed. Vaccinate all sheep at least 4 weeks before tupping. Have a vaccination programme for all replacements as part of flock health plan.

Cambylobacter (vibrio) – responsible for 9% of infectious abortions.

Caused by bacteria (*Cambylobacter fetus*) and results in full term still born or weak lambs.

Transmission: Sheep to sheep, but the infection can be carried by birds.

Action: Follow standard procedure for aborted sheep. Isolate aborted sheep from pregnant ewes, but they can be kept with lambed sheep. This deliberate spread of infection will raise the immunity, as no vaccine is available.

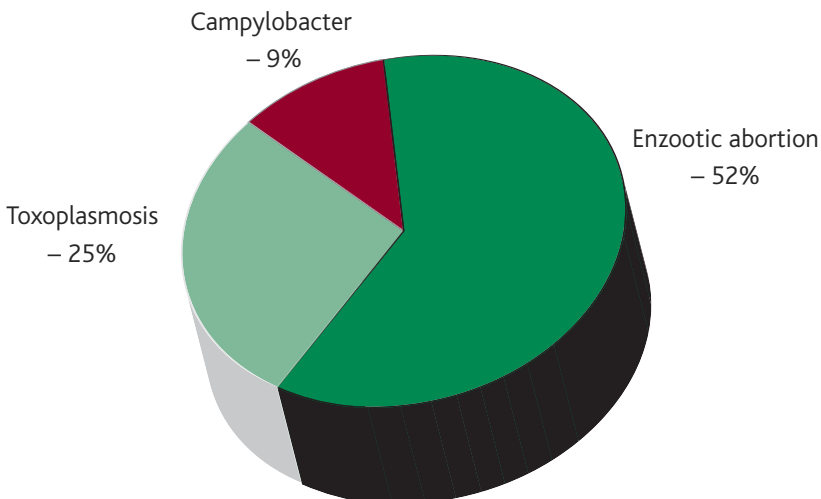
Standard procedure for aborted sheep

1. Isolate and permanently mark ewe.
2. Adhere to strict biosecurity procedures, including adequate disinfection, when inspecting aborted ewes or dealing with infected materials.
3. Collect samples of the foetus/lamb and the afterbirth, and arrange test with a vet.
4. Dispose of bedding and other infected materials carefully.
5. Reduce stocking rate to reduce the risk of infection.
6. Once the cause has been identified, consult with a vet for the best treatment and control methods.
7. Vaccinate flock, if vaccine is available.

Actions

- Determine prevalence and cause of lamb losses in the flock.
- Aim to reduce percentage of abortions to less than 2%, and barren rate to less than 5%
- Establish a health plan with your vet, which may include a vaccination programme
- Ensure a strict biosecurity protocol for dealing with aborted ewes.
- Check health status when purchasing replacements

Causes of infectious abortions



Breeding from ewe lambs

While some producers advocate lambing ewe lambs, others oppose it. Topping ewe lambs increases lifetime performance and reduces the replacement cost per lamb.

Average number of lambs produced during lifetime

	Ewe lamb	Shearling
Bred as ewe lamb (first lambing)	1	–
Bred as shearling (second lambing)	2	2
Third lambing	2	2
Fourth lambing	2	2
Fifth lambing	1	1
TOTAL	8	7
Purchase price	£60	£80
Ewe replacement cost per lamb produced	£7.50	£11.40

Source: The Modern Shepherd

The key is good management, especially nutrition. Liveweight determines the onset of puberty, so ewe lambs should be at 70% of their mature bodyweight at tugging.

Target liveweight for ewe lambs of mature weight of 70kg

Target weight for tugging = 70% of 70kg = 49kg

Assuming a 4kg birthweight, ewe lambs have to gain 45kg from birth to tugging at about 7 months of age. This means she has to gain an average of 215g/day to achieve this.

Ewe lambs, selected for replacements, should not be allowed to become excessively fat, as this may affect fertility and fat build-up in the udder has been shown to reduce future milk yields.

Within a closed flock, selecting replacement ewes for their breeding ability as ewe lambs will drive an improvement in early breeding traits. This needs to be combined with careful selection of ewe lambs with good lamb vigour, and produced by ewes/ewe lambs with good maternal traits (lambing ease and maternal ability).

After tupping, ewe lambs should be scanned and treated accordingly. Remember that ewe lambs require feed for their own and their lamb's growth, so monitor during pregnancy and lactation to ensure nutritional requirements are being met.

It may also be beneficial to wean lambs from ewe lambs earlier (10–12 weeks) to allow more time for the now shearlings to recover before tupping.

Actions

- Monitor ewe lambs' growth rate to ensure they reach 70% of mature bodyweight target at tupping.
- Use mature rams if tupping ewe lambs.
- Put rams in three weeks later than for the ewes, so that lambing occurs after the main peak allowing more attention to be given



Monitoring performance

Level one of monitoring is understanding the physical performance of your enterprise.

Snapshot Bronze – raw data for flock

Snapshot Bronze	My data
Number of ewes	
Number of rams	
Number of ewe deaths	
Own ewe lambs transferred in	
Ewe replacements purchased	
Lambs	
Number of lambs born alive	
Number of lambs weaned	
Number of lambs sold	
Age at sale (months) of finished lambs	
Sale weight kg	
Sale value of finished lambs £/hd	
Labour (family and staff) FTE	

Go to www.eblex.org.uk
to find out more about
Snapshot

Your basic flock details, gathered from diaries or notebooks can be assembled in order.



Information can be collected based on a production year or financial year. Snapshot Bronze asks for data from a production year. Ensure that the period of time you are looking at is defined.

Calculating what the data means

Once your raw data has been calculated comparisons can be made with industry standards.

Calculated data	My data	Formula
Ewe mortality %		$\frac{\text{no of ewe deaths}}{\text{no of ewes}} \times 100$
Ewe:Ram ratio		$\frac{\text{no of ewes}}{\text{no of rams}} : 1$
Replacement rate %		$\frac{\text{Ewes bought or transferred in}}{\text{no of lambs}} \times 100$
Live lambs born per 100 ewes		$\frac{\text{no of lambs born}}{\text{no of lambs put to tup}} \times 100$
Lambs weaned per 100 ewes		$\frac{\text{no of lambs weaned}}{\text{no of ewes put to tup}} \times 100$
Mortality – birth to weaning %		$\frac{\text{no of lambs born} - \text{no of lambs reared}}{\text{no of lambs born}} \times 100$
Liveweight gain – birth to sale kg/day		$\frac{\text{sale weight} - \text{birth weight}}{\text{age at sale (months)}} \times 30$
FTE – paid and family labour/100 ewes		$\frac{\text{Total FTEs}}{\text{no of ewes}} \times 100$

Actions

- Establish a method for collecting physical performance data, and use the raw data to calculate performance indicators.
- Aim to start collecting financial information, such as feed, fertiliser, bedding and veterinary costs, so costings can be produced.
- Look at EBLEX's costing resources at www.eblex.org.uk or on a CD-rom (contact 0870 241 8829)



This is one of a number of booklets produced under the Better Returns Programme.
Other titles in the series include:

1. Target Lamb Selection for Better Returns
2. Target Ram Selection for Better Returns
3. Target Lamb Management for Better Returns
4. Target Ewe Management for Better Returns
5. Target Store Lambs for Better Returns
6. Target Easier Management for Better Returns
7. Target Lameness for Better Returns
8. Target Worm Control for Better Returns
9. Improving ewe breeding for Better Returns
10. Controlling external parasites for Better Returns

All contain useful pointers to where you can achieve savings in time and money as well as increase the value achieved from your sheep enterprise.

Copies are available FREE from EBLEX Ltd, call 0870 241 8829 or email brp@eblex.org.uk

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