

# LAMLAC®

Number 1 for 50 years

## *Handy Lambing Advice*

*to help you  
through the  
**lambing  
season***



volac 



Step 1: Getting prepared

Step 2: Newborn lambs

Step 3: Feeding

Check out our latest  
Lamlac research on  
page 26

# *Handy Lambing Advice*

We know how busy you are this time of year, so Volac has developed some handy advice to help you through the lambing season.



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# Step 1 Getting prepared

- Countdown to lambing: management of the ewe
- Are your ewes getting enough energy?
- Measuring and monitoring
- Are you ready for lambing to start?



## Step 1 - Getting Prepared

# Count down to lambing: management of the ewe

### 1. Disease prevention

Vaccinating ewes against clostridial diseases will give lambs a better chance of survival. Don't forget the booster 4-6 weeks pre-lambing.

### 2. Lameness

Take a comprehensive approach to reducing lameness by using injectable antibiotics to treat foot rot and consider using a vaccine pre-housing. Reducing foot-rot to a very low level before housing is important to avoid the spread of the foot rot bacteria in your buildings. It is also advisable to avoid routine trimming. Remember, lame ewes cannot graze or eat adequately to maintain body condition and this has a significant knock on effect on lamb birth weight and milk production.

### 3. Body condition

Take every opportunity to place your hand on each ewe's back and condition score.

#### Ideal condition score for lambing down:

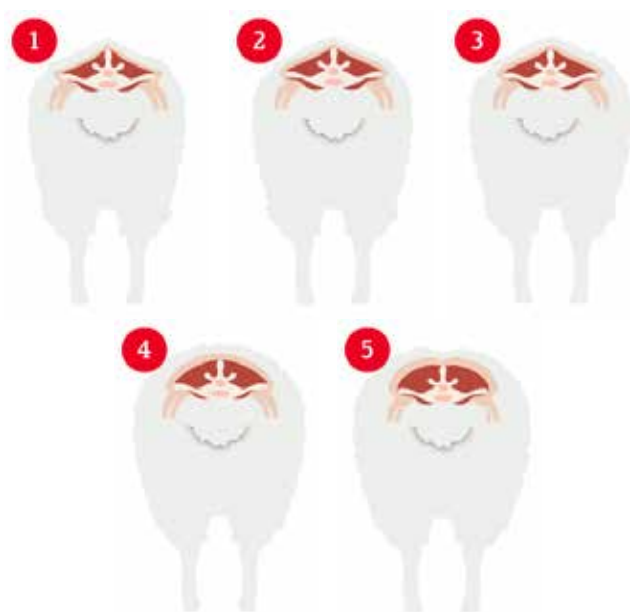
lowland ewes	2.5 to 3
hill ewes	2.0 to 2.5

These scores will allow sufficient body reserves to draw on in early lactation.

It's preferable for ewes to reach these condition scores 8 weeks before lambing and to maintain them right through to lambing, rather than try to gain or lose ewe condition in the last few weeks. Over-fatness is a high risk for prolapse and if ewes are too thin then they are unlikely to have good sized lambs and enough milk.

Managing your ewes correctly in the last eight weeks prior to lambing is one of the most critical stages in the

sheep calendar, writes ADAS sheep consultant Kate Phillips. If things go wrong at this stage then lamb birth-weight could be low, lamb losses high, colostrum supplies and quality poor and subsequent lamb growth below target. Maintaining ewes in good health is equally important.



# Step 1 - Getting Prepared

## 4. Nutrition

Achieve the correct body condition for your ewes by feeding specific formulated rations to match requirements.

### Assess forage stocks and quality

Ideally take representative samples of hay or silage from 4 or 5 bales in each stack or 3 cores from a clamp, and send them to a reputable lab for analysis.

#### General allowance per ewe over a typical winter:

Hay	<b>100kg to 150kg</b>
Silage	<b>300kg to 500kg depending on DM</b>

Good quality forage analysing 11.5-12MJ/kg DM or more is capable of supplying the majority of nutrients needed by a ewe until the last 2 weeks prior to lambing. Poor quality forage, less than 10.5MJ/kg DM, will need supplementing with concentrates much earlier.

If you have several types of forage available, then always save the best quality for close to lambing to help cut down on bought in concentrates.

### Check trace elements

Make sure the ewes' diet is adequate in trace elements, particularly selenium and iodine, the two trace elements which are important in mobilising brown fat in the newborn. Lambs born to well fed ewes are generally born with a good supply of brown adipose tissue, their instant energy source for the first few hours of life. If brown fat reserves are low then hypothermia is a very high risk.

### Formulate the diet

High quality forage and balanced supplements such as cereals and soya bean meal, or a good quality compound feed will lay the foundation for successful lambing.

Optimum ewe body condition and a diet that meets the ewes' needs for energy and protein will lead to good sized lambs, plentiful supplies of high quality colostrum and a good milk yield. All these factors have a huge influence on lamb viability and health.

A ration that meets, but does not exceed, the ewes requirements is important since overfeeding and over fatness can lead to large lambs, difficult births and higher mortality. This is particularly critical for single bearing ewes.

**Ask a professional sheep nutritionist to help formulate the diet. They will help you to make best use of home grown feeds and keep concentrate purchases at the correct level.**





## Step 1 - Getting Prepared



### Are your ewes getting enough energy?

**Did you know that around 70% of foetal growth occurs in the last third of a ewe's pregnancy?**

This means that a ewe's requirement for energy increases rapidly in the 6 weeks prior to lambing to meet the needs of the growing lamb(s). However, the presence of lambs reduces the physical size of the rumen, making it increasingly difficult for the ewe to eat enough to satisfy her demands for energy. As a result, she can lose condition and this can lead to serious health issues.

#### Megalac

Feeding Megalac in late pregnancy and early lactation is an ideal way of increasing diet energy density, helping to reduce the effect of low appetite on energy intake and assist in maintaining ewe body condition. Megalac is a rumen-protected fat, made from a combination of natural plant oil and calcium which can be fed as part of a bought-in compound or blended feed.

Established trial work carried out by ADAS with their Rosemaund flock featured diets fed to in-lamb ewes containing Megalac as a source of supplementary energy. Pre-lambing, 100 ewes were fed either a control concentrate – ME 12.7 MJ/kg DM, or a treatment concentrate in which 10% of the cereal ingredients were replaced with Megalac, increasing its ME to 13.9 MJ/kg DM. The concentrates were fed from 8 weeks before lambing at 0.5 kg/day, rising to 1.1 kg/day at lambing. Post lambing, ewes were fed 1.4 kg concentrates per day, with ME concentrations of 12.5 and 14.0 MJ/kg DM for the control and Megalac-supplemented concentrates, respectively. Straw was available ad-lib throughout the trial and lamb creep from 10 days to slaughter.



## Step 1 - Getting Prepared

### Ewe energy supplementation: impact on ewe and lamb performance

	Twin suckling ewes		Triplet suckling ewes	
	Control	Control + energy supplement	Control	Control + energy supplement
% ewes rearing all lambs	90	95	60	100
Lamb gain to weaning (g/day)	218	233	170	203



The trial found that ewes which were offered the higher energy concentrate reared significantly more lambs, with lamb growth rate up to 19.4% higher to weaning compared to the control group. This is likely to be reflecting improved milk quality and yield in the supplemented ewes. See table above..

The trial showed that ewes carrying twins reared 95% of their lambs, 5% more than those fed the control diet. The trend was more apparent in the triplet group where all the ewes reared 100% of their lambs, compared with only 60% of lambs successfully reared by those fed the control diet. In addition, the ewes fed Megalac were in better body condition at weaning, scoring an average 2.4 compared with the ewes fed the control diet which scored 2.0.

*Trial carried out at the ADAS Rosamund site, GB*

## Measuring and monitoring

If you would like to reduce flock mortality pre and post lambing, then start to measure and monitor flock performance. With lamb losses from scanning to sale running at an estimated 15% to 20%, there's plenty of scope to reduce to 10% or less, says ADAS's Kate Phillips. Here's her advice on how to succeed.



Spending a little time measuring and monitoring flock performance to identify key weaknesses in the system can have a huge impact on the flock's long term physical and financial performance.

## Step 1 - Getting Prepared



### Getting started

Measuring and monitoring can vary from basic recording of lambs reared and ewe and lamb losses, to more detailed records of date, age, weight and cause of death. This data enables farmers to benchmark farm performance year on year and carry out detailed analysis for every ewe in the flock, for example to work out the kilograms of lambs reared per ewe. Discussing these records with your vet or livestock consultant can help to identify issues and any remedial action necessary to help improve flock productivity and performance.

With the majority of ewes now electronically tagged, EID can facilitate records for measuring and monitoring flock performance more accurately. Particularly recording the daily live weight gain (DLWG) of growing lambs, monitoring performance of the progeny of different rams, assessing the effect of different treatments and selecting specific maternal and neonatal lamb traits (e.g. lambing ease, mothering ability). EID can also be effectively used to record medicines or treatments given to individual animals. More specific animal details (e.g. weight, condition score, health status) can be used to help select high performing animals for replacements and also to identify underperforming animals and other health issues.



# Step 1 - Getting Prepared

## Setting targets

All flocks should aim for less than 15% lamb losses and the top performing flocks are achieving closer to 10%.

### Targets for reducing lamb losses:

- Less than 5% from scanning to lambing
- Less than 5% during lambing and the first week of life
- Less than 2% from the first week to weaning
- Less than 2% from weaning to sale or retention

### Further investigation is required if:

- Ewe losses are over 3%
- Lamb losses are over 15%
- Barren ewes are more than 2% at scanning

It is essential that all health issues and losses are recorded in detail to help identify the cause.

## Ewe and ram losses

Ewe and ram losses at more than 2-3% may suggest an underlying health problem and further investigation would be worthwhile. High numbers of ewe deaths could suggest significant health issues, sub-optimal nutrition, or that ewes are being retained on the farm for too long.

If more than 2% of the ewes are barren at scanning, consider blood testing for abortion (particularly Toxoplasmosis). A number of other factors could be responsible for high barren rates, such as ram fertility, trace element imbalances, lack of good quality grazing for flushing, parasitism and/or lameness. Poor scanning

results and low body condition of barren ewes may suggest sub-optimal nutrition and specific health issues such as fluke.

If more than 2% of ewes lose their lambs between scanning and lambing, a number of lambs are born dead, or a number of weakly lambs are born, you could consider testing for abortion.

Prolapse and hypocalcaemia can be responsible for a large number of ewe and lamb losses pre lambing. Monitoring condition score and formulating a correct ration can reduce the incidence.

## Step 1 - Getting Prepared

# Are you ready for lambing to start?



Being well prepared is essential for a successful lambing season. Here are some **top tips** to consider before the newborns arrive...

### 1. Prepare an action plan



Lambing is a busy period and there may be occasions when more than one person is responsible for managing the lambing shed. Make sure that there is enough skilled labour available (minimum 1 person/250 ewes) and agree an action plan with the whole lambing team to help the lambing period run smoothly. Some farmers prepare lambing protocols for all possible eventualities and have a meeting with all staff before the start of lambing. This helps ensure that everyone understands their role and responsibilities and that procedures are routinely followed and recorded.

### 2. Get your housing facilities ready



**Lambing sheds:** should be clean, drained and well ventilated but draught free. Ensure there is adequate lying area for ewes (1.3m<sup>2</sup>) and easy access to water and feed.

**Lambing pens:** Each pen should be a minimum size of 2m x 1m. You should provide a hay rack, feed bucket and water bucket in each pen. Every pen should be cleaned and disinfected and new bedding provided between each ewe.

**Hospital facilities:** organise an intensive care unit for weak lambs. The hospital area should be away from the main lambing area, with access to hot water and a power supply. Lambs which are to be artificially reared should be healthy and not therefore kept in the hospital area.

**Isolation pens:** isolation pens are essential in any flock. By isolating sick animals from healthy ones, some protection is given against the spread of infectious disease.



## Step 1 - Getting Prepared



### 3. Check the lambing toolkit

The lambing toolkit needs to be well stocked and all equipment should be clean and accessible. Useful items include: lubricant, disposable gloves, disinfectant, markers/tags, iodine solution, glucose solution, electrolytes, infra-red lamps, a warming box, prolapse harnesses and lambing ropes. You'll need to speak to your vet about appropriate drug use, but do make sure that sterile needles, sterile syringes, antibiotics, and anti-inflammatories are in your lambing kit.



### 4. Stock up the feeding equipment

Ensure you have spare colostrum and good quality milk replacer on stand-by for orphan lambs and poor doers. Colostrum can be fresh or frozen ewe's colostrum, cow's colostrum or a colostrum substitute. Teated bottles or an automatic milk machine will be required for feeding milk. Stomach tubes may be required for weaker lambs. Scales, a thermometer and a whisk are essential for preparing milk replacer accurately. All feeding equipment should be cleaned daily and disinfected twice weekly.



### 5. Keep a record

Recording books and white boards are valuable tools at lambing time.

Good record keeping ensures that everyone knows how individual animals have been treated and what actions need to be taken, when the team changes shifts. It is a good idea to record numbers of all lambs born, alive and dead, to build up a picture of where lamb losses are occurring. Try to record the number of ewes that abort or do not lamb and also the number that die between scanning and lambing.

Where possible, record the causes of these deaths. All of this information is highly valuable for benchmarking flock performance and identifying areas for future intervention and improvement.



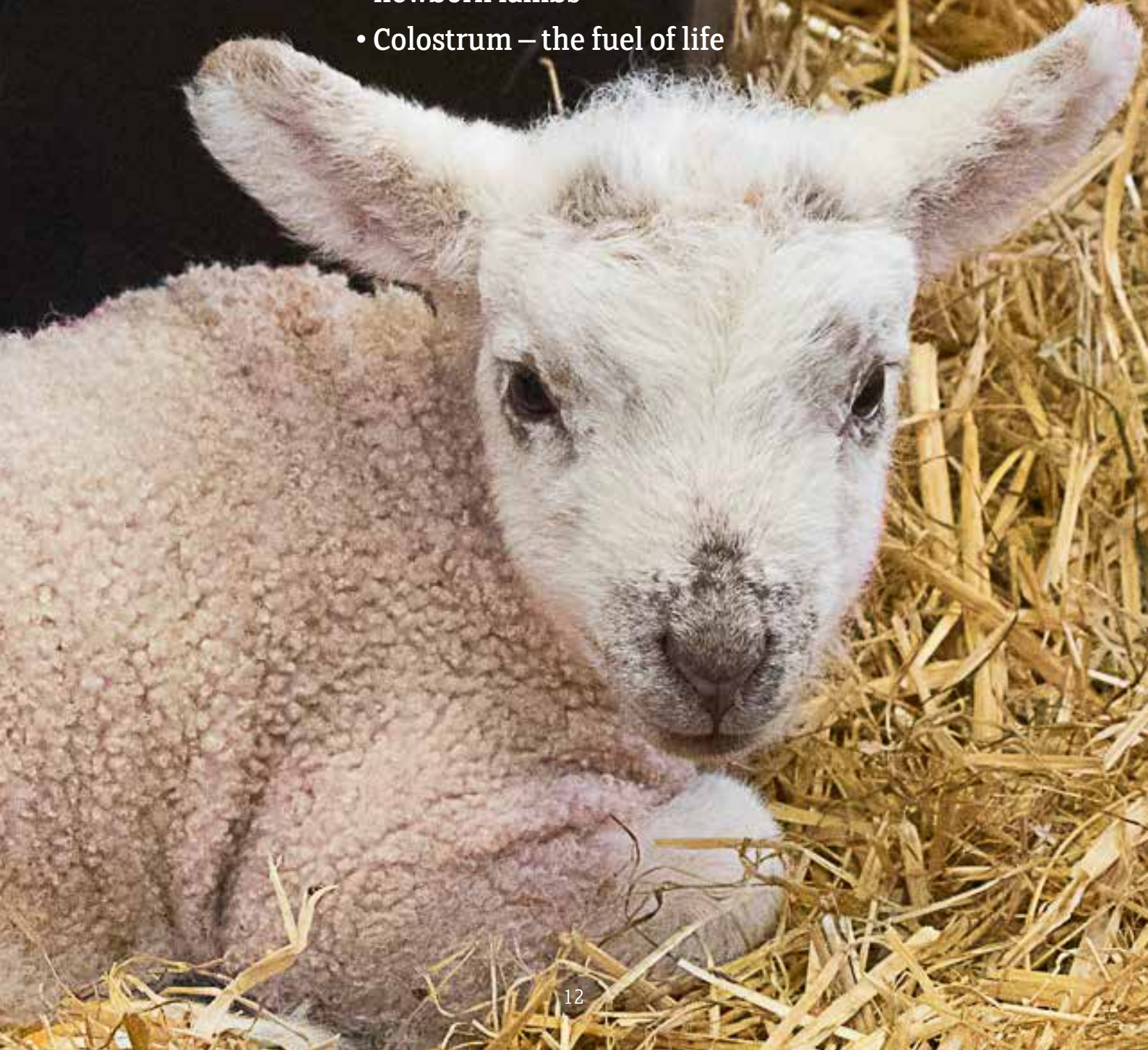




## Step 2

# Newborn lambs

- Housing
- The golden hours: managing newborn lambs
- Colostrum – the fuel of life



## Step 2 - New Born Lambs

### Housing

#### When to house ewes

Housing ewes for less than 3 weeks before lambing should be avoided as any sudden changes in diet in the final stages of pregnancy, unless managed carefully, can induce metabolic disorders such as hypocalcaemia or twin lamb disease.

Be aware that housing ewes for an extended period (more than a month) requires careful management as it can lead to a build-up of disease such as lameness. It will also add considerable bedding costs.

#### Stocking rate

Good pen and trough layout is essential to ensure ewes receive a fair allocation of concentrates and unlimited access to forage. Ideally the group size should be no more than 50 ewes per pen.

**Table 1:** Floor space requirements for housed pregnant ewes

	Floor space
Lowland ewes (60kg to 90kg live weight)	1.2m <sup>2</sup> – 1.4m <sup>2</sup> per ewe during pregnancy
Hill ewes (45kg to 65kg live weight)	1.0m <sup>2</sup> – 1.2m <sup>2</sup> per ewe during pregnancy

**Table 2:** Recommended trough space for housed pregnant ewes

	Trough space/ewe
Ad-lib forage	15 cm
Rationed concentrates	45 cm

Floor feeding can provide a very good alternative to using troughs, but make sure bedding is clean and dry.

#### Grouping

Ewes should be grouped according to their feeding needs, taking into account body condition score and scanned litter size. To avoid bullying, younger ewes (2 year olds) should be penned together and not mixed with older ewes. These younger ewes may also require training to encourage them to eat concentrates and this should be started at grass before housing.

Using housing facilities correctly will help to reduce stress and minimise disease, explains ADAS sheep consultant Kate Phillips.





## Step 2 - New Born Lambs



### Lambing pens

Lambing pens should be set up on a dry, well drained site. By making them easily accessible you will reduce the time spent moving ewes. Likewise, ensuring pre-lambing pens have easy access to the individual post-lambing pens will also save valuable time at feeding. Lambing pens should be a minimum size of 2m x 1m, with 13 small pens allocated per 100 ewes. If you have synchronised your ewes, then there will be a considerable increase in the number of pens required – up to 3 times as many.

As soon as a ewe lambs in the group pens, they should be moved into an individual lambing pen. The lamb's navel must be treated with iodine as soon as possible to minimise disease issues. Check the ewe's udder and give lambs colostrum if required.

Avoid lambing ewes in small pens to keep bedding as clean and dry as possible. Any obvious wet straw and afterbirth should be cleaned out and fresh clean straw provided between ewes to reduce mis-mothering and disease issues. Putting lime in the bottom of pens can also help keep them dry and minimise disease.

A hay rack, feed bucket and water bucket should be provided for each pen, but avoid using large water buckets as there is always a chance that a newborn lamb could drown.

### Turn out

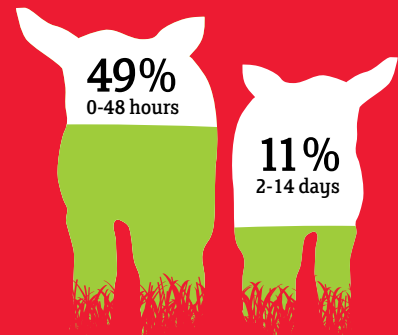
If ewes and lambs are fit and healthy they should be turned out 24-48 hours post-lambing. Keeping animals housed longer than needed increases the risk of disease.





# The golden hours: managing newborn lambs

Results from the Hybu Cig Cymru (HCC) lambing survey, conducted on 70 flocks in Wales during the 2010/11 breeding season, demonstrated that 49% of total lamb losses occur at lambing (0-48hrs), with a further 11% occurring 2-14 days post-lambing.



## Why are newborn lambs so vulnerable?

- There is no transfer of antibodies across the placenta in ruminants. This means lambs are born with no protection against disease and are reliant on colostrum for passive immunity.
- Newborn lambs have a very permeable gut lining that can allow any ingested bacteria and toxins into the blood stream. Slow gut movements during the first day of life give ingested bacteria more time to establish and multiply.
- They have limited energy reserves. All lambs are born with a finite amount of brown fat within their bodies, which acts as a stopgap between birth and the time when a lamb is able to feed.
- Newborn lambs have a large surface area to body weight ratio which makes them susceptible to heat loss. This means they lose heat at a much higher rate when they are wet than when they are dry.

## Survival

The ability to survive is largely dependent on the response of the lamb to the climatic environment into which it is born. Lambs are born wet, often into cold or wet conditions and with limited energy reserves. There is a high energy demand to maintain body temperature, and this must be supplied by efficient metabolism of their brown fat and by the ability of the lamb to stand and suckle to obtain milk.

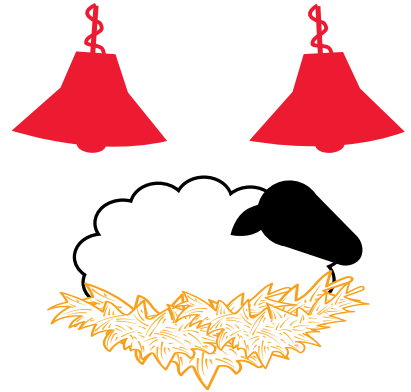
Any lambs that do not feed within the first few hours after birth will soon run out of energy reserves to keep warm, and will die very rapidly if there is no intervention, no matter what environment they are born into.



## Step 2 - New Born Lambs

### Hypothermia and starvation

Hypothermia and starvation are the two principal causes of early lamb mortality. To maintain its body temperature, the newborn lamb must produce as much heat as it is losing to the environment. If the lamb cannot do this, its body temperature will start to fall. Hypothermia (chilling) is a condition where the lamb's body temperature drops below that required for normal metabolism and body function (below 38.5°C). If not remedied, it can lead to death. In newborn lambs, hypothermia usually results from exposure. In lambs over 24 hours old, hypothermia is usually a result of starvation.



Starvation can be caused by many factors such as inadequate intake of colostrum, rejection by the ewe, mastitis, inadequate milk production, injury or illness and/or a difficult birth. Careful and regular shepherding is crucial to ensure that lambs have received adequate food and to spot lambs in difficulty early and treat them as needed.



### Top tips to give your lambs the best start:

1

Make sure the lamb can be identified with its mother and is well bonded.

2

Check the lamb is dry.

3

Treat the navel cord within 15 minutes of birth.

4

Check the lamb has suckled and ingested sufficient colostrum.

5

Check the ewe has an adequate milk supply.

6

Avoid unnecessary interference.

7

Ensure good hygiene.

## Step 2 - New Born Lambs

### Colostrum – the fuel for life

Colostrum is the first feed for the newborn lamb and the key to survival. It is a highly nutritious energy source which helps the lamb to maintain body temperature and survive; it also contains antibodies which are vital to help protect the newborn lamb against disease.

The feeding of sufficient good quality colostrum immediately after birth will reduce losses from both hypothermia and disease.

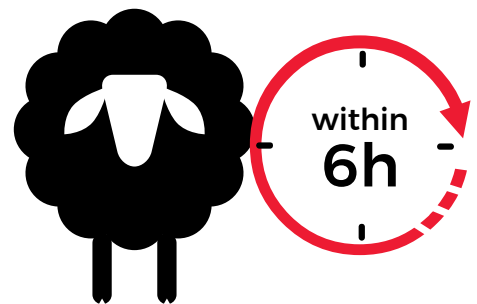
Careful feeding of the in-lamb ewe is critical to stimulate the production of quality colostrum and ensures that lambs get the best start in life.

**Remember  
the 3Q rule:**

**Quickly  
Quantity  
Quality**

#### Quickly

- Feed colostrum as soon as possible after birth – preferably within the first 6 hours. This is when the gut wall is most permeable, allowing for the large antibody molecules to be absorbed directly into the bloodstream.
- Provide small frequent feeds during the first 24 hours.



#### Quantity

- 50ml/kg live weight per feed
- Minimum 210ml/kg live weight within the first 24 hours

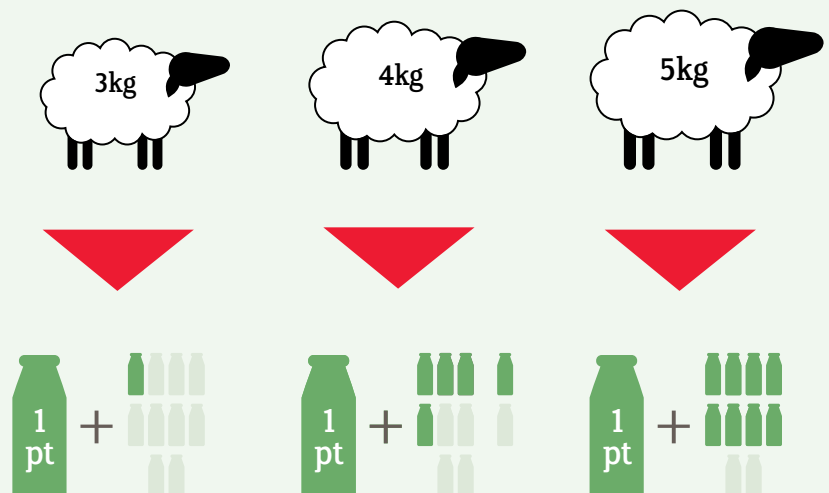
#### Daily intake:

3kg lamb = 1.1 pints (630ml)

4kg lamb = 1.5 pints (840ml)

5kg lamb = 1.8 pints (1050ml)

For lambs born and raised outdoors, increase the colostrum allowance by 15-20%.





## Step 2 - New Born Lambs

### Quality

The quality of colostrum will determine the level of antibodies present in the colostrum.

The quality is affected by:

- **Ewe condition:** body condition score 3 at tupping and vaccinate against infectious abortion and clostridial disease.
- **Ewe parity:** the number of previous lambings.
- **Ewe health:** healthy, well-nourished ewes are able to develop a healthy placenta which reaches its optimum size around day 90 of pregnancy when the placenta releases hormones which stimulate the lactating cells in the udder and colostrum starts developing three to five weeks before lambing.

While mothers' colostrum is preferable, if ewe colostrum is unavailable, in short supply or of poor quality; then colostrum must be fed quickly from another source. Options include fresh or frozen colostrum from another ewe, or a high quality natural alternative such as Volac's Lamb Volostrum.

Colostrum should be fed warm (39°C). It should be warmed by standing in a bowl of warm water. Do not microwave colostrum or heat it directly. Temperatures above 45°C can damage the sensitive proteins within colostrum.



### Volac Lamb Volostrum

Volac Lamb Volostrum is an ideal alternative or supplement when ewe's colostrum is not available or is in short supply. This could be due to multiple births, a sick ewe or a lamb being orphaned. Volostrum is made from high quality whey proteins which have been carefully processed to retain protein quality. It also contains a highly digestible source of energy. Independent trials have shown that lambs fed Volostrum were as healthy and perform equally as well as those that suckled ewes or were fed artificially on ewe's colostrum.



To watch a video on how to mix visit [www.volac.com/Lambvolostrum](http://www.volac.com/Lambvolostrum)



## Step 3 Feeding

- Managing surplus lambs
- Milk feeding systems
- Weaning





### Managing surplus lambs

Every flock will have some lambs that either need to be adopted onto another ewe or be artificially reared. Deciding which route to take will depend on the availability of a suitable foster mother and the physical condition of the foster lamb. Fostering will only be successful if the lamb is fit and healthy, has had adequate colostrum, and is fostered onto a healthy ewe with plenty of milk and good maternal instincts.

Lambs can be successfully reared artificially without the problems of fostering onto an unwilling ewe. There are several methods available. With any system though, combining a good quality milk replacer, with good husbandry and good organisation can save hours and produce quality lambs.

### Key pointers for artificially rearing lambs:

#### Colostrum:

Ensure lambs receive a sufficient colostrum feed within 6 hours of birth.



#### Choose your feeding system:

There are three main systems available – bottle, ad-lib or machine feeding. The method you choose will often depend on the number of lambs you are rearing and the facilities that you have available.

#### Feed milk replacer:

Milk replacer is designed to be a complete diet providing the lamb with all the energy and nutrients it requires.

## Step 3 - Feeding

### How to mix milk replacer:

Mix 200 grams of **Volac Lamlac** with water to make up 1 litre of mixed milk (20% concentration).

**E.g. 200g Volac Lamlac + 800ml water = 1L mixed milk.**

**If feeding warm:** mix and feed at 39°C/102°F.

Don't use hot water (above 45°C) to mix the milk replacer as this may damage the sensitive proteins which are essential to lamb performance.

**If feeding cold:** mix and feed cold. Do not mix warm and allow to cool.



Watch video - how to mix Lamlac  
visit [www.volac.com/lamlac](http://www.volac.com/lamlac)



**Train lambs to suckle the teat:** be patient! Remove the lamb from the ewe at 24hrs (48hrs max). Leave the lamb for a few hours to become hungry. Introduce to the teat gently.

**Teat height:** teats should be positioned 12-15 inches from the ground.

**Number of teats:** Ensure a maximum of 10 lambs per teat for ad-lib systems – 6-8 is ideal.

**Water:** provide access to fresh, clean water at a height which is easily accessible to lambs at all times.

**Dry Feed:** top quality creep feed should be offered fresh at least once a day, with refusals being fed to older stock (e.g. ewes).

**Roughage:** do not feed ad-lib roughage (e.g. hay) during milk feeding as this can depress concentrate intake and delay weaning.

**Group size:** have a maximum of 25 lambs per pen. Keep similar age and size together.

**Environment:** a clean, dry straw-bedded lying area should be provided which is well ventilated, but draught-free.

**Hygiene:** all feeding equipment should be thoroughly cleaned each day and disinfected twice weekly.

**Inspection:** check the lambs at least twice a day.



# Milk feeding systems

There are 3 main systems available for artificially rearing lambs, each of which requires a high level of hygiene to ensure success.

## 1. Bottle feeding

Bottle feeding is ideal for a few lambs. The amount of milk replacer used is approximately 9-10kg per lamb.



### Pros:

- Individual attention to detail
- Ensures an appropriate, controlled volume of milk replacer

### Cons:

- Labour intensive
- Reduced growth rates: restricted feeding
- Increased risk of digestive upsets

Days in Unit	Number of feeds per day	Maximum intake per day
1-3	At least 4	1 litre
4-7	4	1 litre
7-weaning	4 feeds initially – reducing to 2 feeds by weaning	1.5 litres

## Step 3 - Feeding

### 2. Ad-lib feeding

#### Pros:

- Faster growth
- No limit to how much or when lambs can drink
- Several lambs can feed at once
- Milk can be fed warm or cold
- Milk consumed 'little and often' meaning less risk of digestive upsets
- Less labour intensive as the milk is made up in bigger volumes
- Relatively low set up costs

#### Cons:

- Disease can spread more easily through shared teats – hygiene is critical



### Teated bucket or trough

Milk can be fed cold ad-lib using a teated bucket or trough.

### Volac Ewe 2 and Ewe 2 Plus



To watch a video of the assembly of the Ewe2 Feeder visit [www.volac.com/Ewe2feeder](http://www.volac.com/Ewe2feeder)

Milk can be fed warm using a thermostat controlled feeder such as the Volac Ewe 2 nest bucket which can rear up to 20 lambs, or the Volac Ewe 2 Plus, which can rear up to 40 lambs. It is recommended that newborn lambs are started on milk at 30°C, but once they are trained and drinking well, the temperature can be reduced to 18-20°C. The amount of milk replacer used is approximately 11-12kg per lamb. The Ewe 2 sits outside the pen, ensuring optimum safety and avoiding spillages.



Days in Unit	Number of feeds per day	Maximum intake per day
1-3	At least 4	1 litre (restricted)
4-7	2-4	1 litre (restricted)
7-weaning	Ad lib	Ad lib

## Step 3 - Feeding

### ECO Feeder

The ECO feeder automatically mixes a precise volume of powder to a consistent, specified temperature.

- Hopper capacity of 35kg
- Up to 8 stations on one machine
- 20-30 lambs on each feeding station
- Feeds up to 240 lambs
- Electronic heating regulator: ensures the feed is always at the correct temperature
- Easy cleaning: suction hose cleaning system



### CASE STUDY

“ We decided to invest in the ECO feeder for the 2013 lambing season, and as well as requiring minimal labour, it's introduced additional benefits.

We used to wet adopt a lamb from each ewe from the 12% of the flock carrying triplets, it was time consuming and we would still have to turn out 4% of these ewes with three lambs at foot which meant we were feeding four mouths – ewes received supplementary concentrate to ensure sufficient milk, and the lambs were fed creep.

The feeder has changed all that. This season we'll once again be able to introduce all our surplus lambs after their first two good feeds of colostrum, leaving ewes to rear a strong set of twin lambs off grass alone.



We found the artificially reared lambs drink little and often throughout the day – there's no gorging, we weighed them weekly, weaned at an average four weeks of age and 13kg and reared indoors to 17kg target deadweight at between 12 to 16 weeks. Apart from being ethically sound, the system left a margin of approximately £15 per lamb. ”

Neil Perkins, Dinas Island, Newport, Pembroke – 1,600 ewes

## Step 3 - Feeding

### Weaning

The speed of this development is not controlled by the lamb's age or weight, but rather by the diet it is fed and the physical and chemical processes associated with its digestion. It is therefore essential that alongside the milk feed, the lamb has access to fresh water at all times and a top quality creep feed should be offered fresh at least once each day.

Effective development of the digestive system, specifically the rumen, will ensure that when the lamb is weaned and the milk portion of its diet is removed, it will be able to match its energy requirement through the intake of solid feed alone. This will prevent any set back in growth or performance.

Lambs are born with an immature digestive system, so in early life they cannot digest anything but milk. The lamb's digestive system must undergo considerable development in order to cope as it gradually moves from a predominantly milk-based diet to a more complex, grass-based diet.



**For successful weaning, lambs should be:**

A minimum of 2.5 times  
their birth weight  
(9-10kg)

A minimum of  
35 days old

Consuming 250g  
of solid feed per day

Weaning is most successfully achieved when Lam-lac is withdrawn abruptly, provided that lambs are old enough and that the intake of solid feed is adequate. Lambs should have been eating solid feed for at least 10 days and be making use of the drinking water supply.

#### Weaning from restricted feeding:

Weaning from restricted feeding can be done by gradually reducing the milk given over the last week, by reducing the number of feeds per day and/or reducing the volume of milk per feed.

#### Weaning from an automatic or ad-lib feeding system (e.g. Ewe 2):

- Reduce the temperature to feed cold
- Do not dilute the milk as this will increase intakes and urine production
- Reduce the number of teats available
- Ensure plenty of fresh solid feed and water is available





# Lamb Trial Summary: Spring 2020

**Objective:** To generate lamb performance data for lambs reared on Lamlac milk replacer (24% crude protein, 24% fat).

<b>Trial Sites:</b>	<b>Site 1 – Harper Adams University (Newport, England)</b>	<b>Site 2 – Commercial unit (Lancashire, England)</b>
<b>Breed</b>	Suffolk Mule ewe x Texel tup	Aberfield/Mule Cross ewes
<b>Number of Lambs</b>	13 lambs fed & weighed	100 lambs fed - 51 lambs weighed
<b>Feeder Type</b>	Ewe2 Feeder	Eco Feeder
<b>Body Weight Measurements</b>	Weekly	Birth, 2 weeks & 5 weeks
<b>Milk Temperature</b>	Started at 25°C – when lambs had learnt to suckle reduced to 20°C for 1 week, then reduced to 15°C through to weaning	Started at 37°C - when lambs had learnt to suckle reduced to 20-22° C through to weaning

## Feed:

### Milk Replacer:

- Lamlac mixed at 200g powder + 800ml water = 1 litre of mixed milk
- Lambs fed on restricted milk from 24 hours of age until trained to feed from either Ewe 2 feeder or Eco feeder
- Once trained onto the feeder, Lamlac milk replacer provided ad-libitum via the feeder

### Water and Dry Feed:

- Fresh water, creep and forage (straw) feed was available ad-libitum (once in group pens on feeder).

### Weaning:

- Lambs weaned abruptly at **35 days** of age
- At weaning, target weight was a minimum of 10kg, and eating at least 250g creep per day

## Results:

**Growth Rate** - Lambs on both sites weighed a minimum of 10kg at weaning at 35 days of age, ranging from 10kg to 23kg (Table 1).

- On site 1 (HAU), lambs weighed on average 17.8kg at weaning, with an average daily live weight gain (DLWG) up to weaning of 0.38kg/d.
- On site 2 (commercial unit), lambs weighed on average 15.0kg at weaning, with an average DLWG up to weaning of 0.31kg/d

**Milk Intake** - On site 1 (HAU) milk intake was good, with lambs consuming approximately 1 litre of milk per day during the first week of life, increasing to 2.5 litres per day at weaning.



# Lamb Trial Summary: Spring 2020

**Table 1.**

Lamb body weight (kg) from birth to weaning at 5 weeks of age on site 1 (HAU, n=13) and site 2 (commercial unit, n=51)

	Site 1 (HAU)			Site 2 (commercial unit)		
	Mean	Min	Max	Mean	Min	Max
Birth	<b>4.37</b>	3.20	5.60	<b>4.23</b>	3.00	6.00
Week 1	<b>6.25</b>	4.50	8.40	-	-	-
Week 2	<b>8.68</b>	6.80	11.70	<b>8.75</b>	6.00	12.90
Week 3	<b>11.85</b>	9.50	15.50	-	-	-
Week 4	<b>15.32</b>	11.70	19.70	-	-	-
Week 5	<b>17.78</b>	13.30	23.00	<b>14.96</b>	10.40	21.60

**Table 2.**

Daily live weight gain (kg/d) from birth to weaning at 5 weeks of age on site 1 (HAU, n=13)

	Site 1 (HAU)		
	Mean	Min	Max
Birth – wk 1	<b>0.27</b>	0.13	0.40
wk 1 – wk 2	<b>0.35</b>	0.20	0.50
wk 2 – wk 3	<b>0.45</b>	0.31	0.63
wk 3 – wk 4	<b>0.50</b>	0.31	0.66
wk 4 – wk 5	<b>0.35</b>	0.11	0.47
Birth to weaning, kg/d	<b>0.38</b>	0.28	0.51

**Table 3.**

Daily live weight gain (kg/d) from birth to weaning at 5 weeks of age on site 1 (HAU, n=13) and site 2 (commercial unit, n=51)

	Site 1 (HAU)			Site 2 (commercial unit)		
	Mean	Min	Max	Mean	Min	Max
Birth – wk 2	<b>0.31</b>	0.21	0.44	<b>0.31</b>	0.17	0.49
wk 2 – weaning	<b>0.43</b>	0.30	0.55	<b>0.31</b>	0.18	0.45
Birth to weaning, kg/d	<b>0.38</b>	0.28	0.51	<b>0.31</b>	0.21	0.46

## Conclusion:

Lamb performance was good across the 2 sites demonstrating that with good farm practices, lambs can be successfully reared artificially on Lamlac, helping to maximise the number of lambs reared in flocks with a high prolificacy rate.

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