FORAGE *for* PROFIT

Farm Advisory Service

National Advice Hub
T: 0300 323 0161
E: advice@fas.scot
W: www.fas.scot

The Forage for Profit Discussion Group are a group of beef and sheep producers based in South West Scotland with a common desire to improve business profitability through improved utilisation of grass and forage crops.

Nutrition of ewes throughout the year is arguably the largest factor the success of their ability to rear lambs, handle worm challenges, get in lamb in the autumn, cope with winter weather and deliver a healthy lamb with sufficient colostrum to give that lamb a good start to life. An 85kg in lamb ewe carrying multiple lambs can carry up to 16.5% of her own bodyweight so high quality feed is essential to ensure the energy and protein requirements of ewe and lamb are met whilst taking into account the limited rumen space as the pregnancy proceeds. Lamb birthweight has a direct correlation to survivability of lambs and this has a direct link with effective nutrition throughout pregnancy. Target birthweight is between 4-7 kg and apportioned depending on lamb crop size.

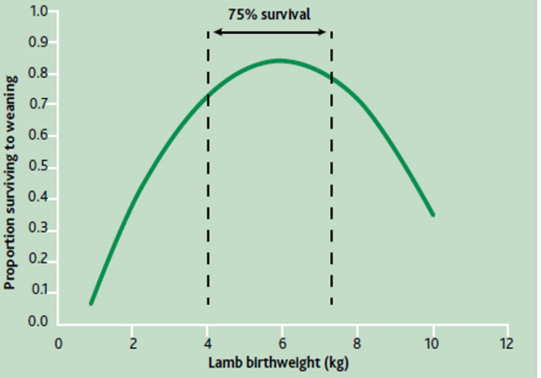
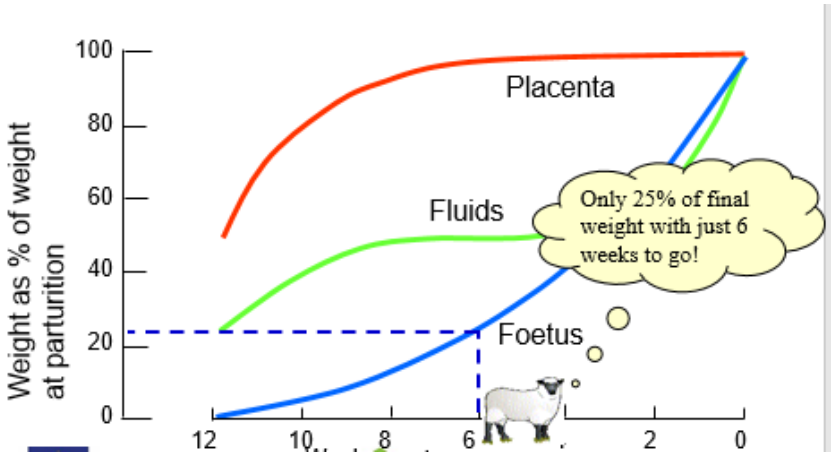


Figure 7. Effect of lamb birthweight on lamb survival to weaning

Fetal Development Phases

The chart below shows where a ewe directs her energy for foetal development during pregnancy.

- The 1st trimester is an essential time as this is when embryonic attachment occurs and organ development begins and any stress or sudden changes in diet can result in foetal death.
- The 2nd trimester sees further developmental of organs, muscle tissues and development of reproductive organs. It is preferred that ewes maintain condition throughout gestation but if ewes are overfat this is period of pregnancy when they can afford to lose a little condition, however it is far safer to address high condition scores after weaning.
- The 3rd trimester is a critical phase for lamb development. The lamb will do 75% of its growing in this final trimester and the ewes energy demands increase weekly whilst rumen space decreases. Compact feeds with adequate ME and CP are important to ensure the foetus can develop fully and high quality colostrum is produced. Inadequate nutrition and stress can be contributing factors to conditions such as twin lamb disease.



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FORAGE *for* PROFIT — Pre Lambing Nutrition

Winter Forage Crops

Using forage crops during the winter are a great way to get sheep off grass to build covers for lambing. Forage crops have good levels of ME and CP, mostly in the leaf—when choosing which forage crop to grow ensure you look at varieties with higher winter hardiness scores so that leaf is retained for feeding later in winter. It is important to monitor ewe intakes as a forage crop and supplementary silage or hay are bulky feeds and the ewe may not have the rumen space to meet her energy intake requirements in later pregnancy. Supplementary lick buckets or molasses can help supply this energy but body condition score should be monitored carefully for signs feed requirements are not being met.

	Fresh Yield (t/ha)	Dry Matter (%)	Crude Protein (%)	D value	Metabolise Energy (MJ/kg DM)
Leafy Crops					
Kale	60-75	14-16	16-17	70-75	10-11
Rape & Hybrids	24-35	12-13	19-20	65	10-11
Root Crops					
Stubble Turnip	40-50	8-9	17-18	68-70	11
Swedes	70-90	10-13	10-11	82	13
Fodder Beet	80-100	15-23	12-13	78	12.5-13

Dry Matter Intake Requirements.

The Table below shows a ewes dry matter intake requirements calculated as a % of her bodyweight

	% of bodyweight	E.g. For 70kg ewe (kg/day)
Dry, post weaning, early/mid pregnancy	1.5	1.05
Late pregnancy	2 – 2.5	1.45 – 1.75
Early lactation	3.5+	2.45

Calculating Diet Requirements

If feeding a good quality silage with 10.5ME and an intake requirement for 1.6% of bodyweight.

1.6% of 70kg = 1.12kg DM
1.12 x 10.5 = 11.8MJ

- At 7 weeks pre-lambing ewe needs 11MJ so no requirement for supplement
- At 5 weeks pre lambing ewe needs 13M. Ewe needs 1.2 MJ from conc.
  1.2/10.75* = 0.11kg conc.
- At 1 week pre lambing and appetite of 1.4% of bodyweight (70kg) needs 18MJ. Ewe needs 7.7MJ from conc.
  7.7/10.75* = 0.72kg conc.

(*A 12.5 ME compound feed as fed has a dry weight of 10.75MJ/kg)

The table below shows the increasing energy requirements (MJ/kg DM) for ewes in the run up to lambing for single and twin bearing pregnancies.

Ewe weight	Weeks before lambing			
	7	5	3	1
50kg				
Single	8	9	10	11
Twin	9	10	12	14
60kg				
Single	9	10	11	13
Twins	10	12	14	16
70kg				
Single	10	11	13	14
Twins	11	13	15	18