

Replacement Policy and Management

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On average 20% of the ewe flock is replaced annually. Replacement cost is a substantial cost in sheep production and in the 2010 e – Profit Monitor flocks (Table 1) the average replacement cost was estimated at €17 per ewe. However, there is a huge variation between farms.

Table 1 2009 e-Profit Monitor replacement costs

	Top1/3	Average	Bottom1/3
Replacement cost per ewe	€6	€17	€27

Replacement Options.

Sheep farmers have a number of options to acquire flock replacements including:

- (a) Purchasing ewe hoggets at 18 months of age.
- (b) Rearing their own ewe lambs or purchasing ewe lambs and mating them as hoggets at 18 months of age (Dry Hogget).
- (c) Breeding ewe lambs in their first season.

The estimates of the cost associated with each of the 3 systems are set out in Table 2.

Table 2. Replacement Costs.

	(a)Hogget Purchased	(b)Dry Hogget	©Ewe Lamb Mated
Ewe lamb value		€5	€15
Purchase value of hogget	€90		
Feed Costs		€8	€2
Veterinary & other Costs	€ 5	€7	€5
Total Costs	€195	€140	€192
Cull ewe and lamb value	€ 85	€85	€160
Nett Replacement Cost	€ 110	€55	€32
Annual replacement cost / mature ewe	€22	€13.75	€8.00

Advantages and disadvantages

The advantages and disadvantages of different options are outline below

Purchasing hogget replacements.

Advantages

- All lambs are from mature ewes (2+ years) and more lambs are sold per ewe kept with tighter drafting.
- Simplifies flock management and allows the flock owner to concentrate on producing lambs for slaughter with terminal sires.
- The flock managed as one unit makes grassland and flock management easier.
- Suitable system for small to medium sized flocks; in these flocks small sub flocks make grassland and general flock management more difficult.

Disadvantages

- Significant disease and bio-security risk unless they come from a reliable source.
- Flock owner has no control of selecting animals with improved genetics for increasing productivity and flock health.
- High annual capital outlay on purchasing replacements.

Dry Hoggets.

Advantages

- Both a low labour and low cost system.
- All lambs are from mature ewes resulting in higher growth rates and more compact lamb drafting.
- Allows later born or light ewe lambs (e.g. lambs from hill breeds) to grow and reach target weights for mating at 18 months.
- In closed flocks, facilitates selection of replacements with good maternal traits at weaning.
- Dry hoggets can be used to maintain grass quality for the lambed ewe flock.

Disadvantages

- Lower life time performance when run as dry hoggets in first season.
- Lighter lambs may be selected as replacements. Research shows that slow growing animals that are under nourished pre weaning are less prolific during their later productive life time.
- Fewer lambs sold as 20% of the flock is not bred.



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Breeding Ewe Lambs.

The increased lamb prices and the high cost of replacements in recent years have prompted increased interest in breeding ewe lambs. A number of key targets must be achieved to ensure successful breeding of ewe lambs. The advantages /disadvantages of breeding ewe lambs are outlined below.

Advantages

- Ewe's lifetime production is increased by up to 20%.
- Hoggets are easier to manage in the second year.
- Allows for faster genetic gain when selecting within a closed flock.
- It increases profits by reducing replacement costs

Disadvantages

- Higher labour requirement especially at lambing.
- Extended and later lambing period.
- Lower lamb output from ewe lambs.
- Must be managed as a separate flock.
- Not achieving live weight targets at 1.5 years can result in lower lambing % in the second season and fewer lambs over the ewe's lifetime.

Puberty and Oestrus in Ewe Lambs

There are numerous interacting animal and environmental factors that affect timing of puberty and onset of oestrous cycles in ewe lambs. The more important ones are briefly summarised below.

- Day length and season.

Ewe lambs are more likely to reach puberty and commence oestrous cycles and at lower live weight with shortening day length e.g. Suffolks will reach puberty at 44 kg live weight in early October and at 33 kg in early December.

- Breed differences.

Research shows there are breed differences in the age at start of cycling:

The maternal breeds will reach puberty and show oestrus at a younger age than terminal sire breeds. e.g. Suffolk crosses 240 days vs Finn crosses 189 days.

- Age.

Compared to mature ewes, ewe lambs begin oestrous cycles later in the breeding season. Furthermore, their breeding season is also shorter. Conception rate is low if ewe lambs are under 7/8 months of age at time of breeding. A target ewe lamb mating weight should be 60% of mature body weight for that breed type and these are summarised in Table 3 for some breed types.

- Ram effect

Introducing teaser rams for a 2 week period in October/early November will advance onset of puberty and will result in more compact mating and subsequent lambing.



A ewe's lifetime production is increased by up to 20% when initially bred as a ewe lamb. Mating ewe lambs can increase farm output, but requires extra management to ensure subsequent performance is not compromised

Table 3. Target ewe lamb mating weight and mature ewe body weight.

Breed	Mature Body Weight (kg)	Weight at mating as ewe lamb (kg)
Lleyn	65	40
Mule/Greyface/ Belclare cross	75	45
Suffolk/Continental cross	80	48

Shearing

Trials by ADAS (UK) 1995 showed a response to shearing where ewe lambs were shorn in Mid September and exposed to rams for 3 cycles from Mid October (Table 4).

Table 4. Effect of shearing ewe lambs on % barren and % producing twins

	<i>Shorn</i>	<i>Unshorn</i>
Barren (%)	10	30
Twins (%)	27	19

Shearing increased the % of ewe lambs that subsequently lambed and also the % that produced twins.

Mating Management

Farmers planning to breed ewe lambs should introduce fertile ram(s) to the ewe lambs 2 weeks after ram introduction to the mature ewe flock. Ideally, introduce teaser rams 17 days before entire rams. The teasers will induce oestrus so more ewe lambs will mate in the first 17days after fertile ram introduction. It is preferable to mate ewe lambs separately and use one mature ram per 25 ewe lambs. Use easy lambing breeds or select rams with high easy lambing breeding values (Lambplus performance records) or a record of easy lambing. Limit the breeding period to 35 days. The combined lower ovulation rates and higher embryo mortality in ewe lambs compared to mature ewes, will result in up to 20% of ewe lambs failing to become pregnant. The target litter size for ewe lambs becoming pregnant is 1.25 – 1.3 lambs thus giving an expected weaning rate of .8 to 1 lamb per ewe lamb joined with rams.



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Limit the breeding period to 35 days.**

Pregnancy Management

Ewe lambs differ from mature ewes in that they need to continue to grow throughout pregnancy and at the same time produce a viable healthy lamb. They need to be treated and managed as a separate flock from the time they are mated as ewe lambs until they are re-mated the following year as one and half year old hoggets.

Maintain ewe lambs on a high plane of nutrition (good quality autumn grass) during and for a month post mating. In the second and third month of pregnancy a diet from winter grazing or good quality silage is sufficient to give a weight gain of .6 kg per week. Scan at 80 days from ram introduction and base the feeding programme for the last eight weeks of pregnancy on litter size. Feed meals to single bearing ewe lambs from 8 weeks pre lambing at the rate of 0.25 kg/day. Concentrate levels should be increased to 0.5 kg/day for twin bearing ewe lambs. Frequently check for body condition score and adjust feed levels accordingly.

Post Lambing

Ewe lambs (now hoggets) rearing lambs should be managed separately after turn out in spring and fed 0.5kg of concentrates daily for a few weeks post turn out. Introduce creep feed to their lambs from turnout and feed 300 gm per head daily up to weaning. Wean when lambs are 12/13 weeks of age. This allows weaned hoggets regain body condition and achieve a target body weight of 80% of mature body weight (65 kg) at second mating. Increasing the group size by mixing hoggets with triplet rearing ewes will facilitate better grassland management.

Ewe lambs fail to develop immunity to gastro intestinal parasites (stomach worms) during pregnancy and first lactation. The parasite burden should be monitored through taking faecal samples at 4/6 week intervals and dosing when faecal egg counts indicate a high parasite burden.