

Season of Shearing Impacts on Flock Profitability

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During the past year the margins from sheep production have increased primarily due to increased lamb carcass price. Also during this period the value of wool has nearly trebled (although from a low base price). For animal welfare reasons ewes must be shorn at least once per year. Many ewes, particularly from lowland flocks, are housed from mid December until lambing. Time of year at which sheep are shorn impacts on ewe performance and the growth rate of the subsequent offspring, and consequently, on flock profitability. The aim of this paper is to highlight, from recent studies at Athenry, how shearing at housing effects subsequent animal performance and flock profitability.

Shearing at Housing

Three studies have been undertaken at Athenry in recent years which have evaluated the effects of shearing ewes at housing on subsequent lamb performance until weaning. In each of these studies ewes were housed either unshorn, or shorn in mid December and offered grass silage *ad libitum*. For the six weeks prior to lambing ewes carrying singles, twins and triplets each received a total of 12, 20 and 25 kg concentrate, respectively. Ewes rearing singles and twins, and their lambs, were grazed as one flock post lambing, without concentrate supplementation. Ewes rearing triplets were grazed as a separate flock and received 0.5 kg concentrate daily for 5 weeks post lambing, whilst lambs reared as triplets received up to 300 g concentrate daily until weaning.

Effects on Animal Performance

The effects of shearing ewes at housing on subsequent lamb performance are presented in Table 1. Shearing ewes at housing did not affect the condition score of the ewes at lambing. However, lambs born from ewes which had been shorn at housing were 0.6 kg heavier at birth and 1.9 kg heavier at weaning and subsequently were approximately 2 weeks younger at slaughter. Whilst shearing at housing increased lamb birth weight, it did not effect the incidence of lambing difficulty.

Previous studies at Athenry have shown that each 1 kg increase in lamb birth weight increases weaning weight by 3.2 kg which is similar to the response in the present studies due to winter shearing. The increased birth weight of the lambs from the ewes which were shorn at housing was due to increased silage dry matter intake which was partly a reflection of cold stress immediately

post shearing, and more importantly, a reflection of reduced heat stress in late pregnancy. Shearing at housing also increased ewe gestation length by 1.5 days.

Table 1. Effect of shearing ewes at housing on subsequent lamb performance

	Shearing date	
	May	Mid December
Ewe condition score at lambing	3.5	3.4
Lamb birth weight (kg)	4.1	4.7
Lamb weaning weight (kg)	31.5	33.4

(Keady and Hanrahan 2008, 2009a; Keady et al. 2007)

The increase in lamb weight at weaning (+1.9 kg) obtained due to shearing ewes at housing is the same response as would be expected from providing 19 kg of creep concentrate to each lamb prior to weaning, which is equivalent to a cost of approximately €6/lamb. Shearing at housing (cost €2.50/ewe) is equivalent to a saving in creep concentrate of approximately €10/ewe for ewes rearing 1.7 lambs.



Winter shearing increases lamb birth weight by 0.6 kg and reduces lamb age at slaughter by approximately 2 weeks

Effects on Fleece Weight

The value of wool has trebled in the past 15 months (although from a low base level). The effect of season of shearing on fleece weight is presented in Table 2. Shearing ewes at housing increased the weight of wool harvested by 0.3 kg/ewe relative to shearing in May.

Table 2. Effect of shearing ewes at housing on fleece weight

	Shearing date		
	May	September	December
Fleece weight (kg)	2.8	3.1	3.1

(Keady and Hanrahan 2009b)

Other Advantages of Shearing at Housing

Shearing ewes at housing enables more ewes to be housed in a given area. For example, if housed in straw bedded pens 70 kg unshorn ewes require 1.2 m² floor space. However, shorn ewes require less floor space. Consequently if ewes are shorn at housing approximately 15% more ewes may be over wintered in the sheep house. Shearing during December occurs during a period of low labour demand for flock management, consequently spreads the work load. Furthermore, shearing during May or June requires the additional task of separating lambs from the ewes.



Winter shearing enables approximately 15% more ewes to be housed in a given area

Shearing at Other Times

Shearing at other times (than early summer or at housing) may enable the total flock to be assembled, without lambs at foot and during good weather conditions. Two studies were undertaken, one at Athenry and the second on a large commercial farm, to evaluate shearing either

four weeks prior to mating (September) or at housing relative to shearing conventionally in early summer. All ewes at each site were kept in one flock throughout the grazing and mating seasons and were housed in mid December and offered the same diet. The effects of time of shearing on subsequent ewe and lamb performance are presented in Table 3.

Table 3. The effects of time of shearing on lamb birth weight

	Time of Shearing		
	June	September	December
Lamb birth weight (kg)	4.3	4.6	4.8

(Keady and Hanrahan 2008,2009b)

The heaviest lambs were produced from ewes which were shorn at housing whilst the lightest lambs were produced from ewes shorn in June. The mean litter size and weaning rate were 2.03 lambs and 1.87 lambs per ewe put to the ram, respectively, and were not significantly influenced by the time of shearing. Furthermore, shearing the ewes prior to mating did not reduce the number of barren ewes relative to shearing at housing. Relative to shearing at housing, shearing prior to mating reduces fleece weight by 0.5 kg. The results of these studies indicate that September shearing (about 4 weeks prior to mating) provides an alternative strategy whilst achieving approximately 50% of the benefits on lamb birth weight as shearing at housing (December).

Effect of Shearing at Housing on Flock Gross Margin

To determine the effect of season of shearing at housing on gross margin per ewe it is assumed that:

- (a) each ewe rears 1.7 lambs
- (b) mean lamb carcass weight is 20 kg
- (c) each 1 week earlier lambs are sold increases mean carcass price (for the total flock) by 4c/kg. Shearing prior to mating or at housing reduces the age at slaughter by 1 and 2 weeks, respectively.
- (d) the opportunity cost of grazed grass is 5c/kg grass dry matter
- (e) the value of wool is €1.40/kg

Based on these parameters, relative to shearing in May, shearing ewes prior to mating or at housing increases profitability per ewe by €2.10 and €5.10, respectively, due to a combination of increased lamb carcass value, change in fleece value and opportunity the value of grass not consumed. This increase in margin due to shearing prior to mating or at housing is equivalent to an increase in lamb carcass value of 11 and 26c/kg, respectively.

Summary

1) Shearing ewes at housing

- a) increases lamb birth weight by 0.6 kg
- b) has no impact on lambing difficulty
- c) increases lamb weaning weight by 1.9 kg
- d) reduces lamb age at slaughter by approximately 2 weeks
- e) increases fleece weight by 0.3 kg
- f) enables approximately 15% more ewes to be housed in a given area
- g) increases gross margin by approximately €5.10/ewe

2) Shearing prior to mating in September

- a) maintains some of the benefits of winter shearing
- b) increases gross margin by approximately €2.10/ewe.

References

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