

Extended grazing ewes this winter

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Introduction

Data from the National Farm Survey show that the mean stocking rate on lowland sheep farms is 7.5 ewes per hectare. As winter approaches, producers need to decide how to manage their ewes during mid and late pregnancy. On farms with a lower stocking rate consideration could be given to extending the grazing season thus reducing, or eliminating the need to house the flock. On the contrary, flocks managed at a high stocking rate will need to be housed to allow grass to accumulate for grazing post-lambing next spring.

My aim in this article, the sixth in the current series, is to present data based on studies undertaken at Athenry on the effects of extended grazing on the performance of ewes and their progeny.

Extended grazing

Extended grazing involves allowing herbage to accumulate for grazing during the winter period. This involves removing stock from paddocks in September and early October, thus enabling herbage accumulation for grazing from mid-December onwards. The extent of area of the farm from which stock need to be removed to enable herbage accumulation depends, firstly, on the stocking rate, and thus the number of ewes. And secondly, on the period of time it is proposed to extend-graze the flock, i.e., during mid-pregnancy or late pregnancy or both. During extended grazing herbage is frequently allocated to the flock and electric fences are placed in front of, and behind, the ewes thus preventing them from going back onto areas already grazed.

The feed value of the herbage depends on the growth interval, i.e., the time between closing the paddock, to accumulate herbage, and grazing. The effects of date of grazing on herbage feed value are presented in Table 1. As the date of extended grazing is delayed the proportion of dead herbage increases and herbage feed value, as determined by DMD (dry matter digestibility), declines. Also herbage dry matter (DM) yield declines after a period due to leaf senescence and decay.

Ewe performance

A number of studies on the effects of extended grazing on the performance of ewes and their progeny have been completed at Athenry. In these studies some ewes were extended-grazed either during mid-pregnancy or during both mid- and late-pregnancy while other ewes were kept indoors and offered medium feed value grass silage. The results of one of these studies are presented in Table 2. Relative to ewes that were housed and unshorn, extended grazing increased lamb birth weight and growth rate from birth to weaning and, thus, increased weaning weight. Various studies at Athenry have shown that each 0.5 kg increase in lamb birth weight results in an increase in weaning weight of about 1.5 kg. Extended grazing throughout mid- and late-pregnancy resulted in a greater response than extended grazing during mid-pregnancy only. However, when compared to ewes that were shorn at housing, extended grazing had no beneficial effect on ewe or lamb performance.

Herbage allowance

One of the major factors determining the proportion of the farm that needs to be closed in autumn for extended grazing is the daily grass allowance which will be offered to the ewes in mid- and late-pregnancy. The effects of herbage allowance offered to ewes during mid-pregnancy (early December to 4 weeks prior to lambing) on the performance of their lambs were evaluated in two studies at Athenry; the results are presented in Table 3. Increasing herbage DM allowance by 0.8 kg/day increased daily forage DM intake by 0.19 kg per ewe. Thus, only 24% of the additional allocated herbage was consumed by the ewes. Lambs from ewes on the higher grass allowance were heavier at birth (+0.33 kg) and at weaning (+0.8 kg) and grew faster from birth to weaning (+6 g/day).

During mid-pregnancy, and where there is a good utilization rate of herbage, an allowance of 1.3 kg herbage DM should suffice. Higher herbage allowances result in reduced utilization

rate and a requirement for a greater area of the farm to be closed in autumn to accumulate herbage for extended grazing during mid and late pregnancy.

Frequency of herbage allocation

One of the advantages often quoted for extended grazing is the reduced labour requirement relative to feeding housed ewes. Herbage is normally allocated daily, which can be time consuming (particularly for large flocks) as fences (temporary electric fencing) need to be erected ahead of the ewes and the back fences have to be moved up. In order to evaluate if labour input can be reduced, the effect of frequency of herbage allocation to ewes in mid pregnancy on the performance of their lambs was evaluated at Athenry (Table 4). In these studies the ewes were extended-grazed from mid-December to 4 weeks prior to lambing, at which stage they were housed and offered a total of 19 kg concentrate prior to lambing. During extended grazing the ewes were allocated herbage either daily or twice weekly. Frequency of herbage allocation had no effect on lamb birth or weaning weight, or on lamb growth rate from birth to weaning.

Management of herbage allocation

Data from the National Farm Survey show that the national average weaning rate is only about 1.3 lambs per ewe put to the ram. Consequently, most flocks comprise ewes that produce only singles or twins. As many sheep producers have their flocks scanned in mid-pregnancy they can group ewes according to litter size. An on-farm study was undertaken by Teagasc to evaluate the effects of allocating herbage daily to single and twin bearing ewes in late pregnancy, either grouped separately (according to litter size) or in a leader-follower system (twin-bearing ewes were leaders while the single-bearing ewes were the followers). The daily herbage DM allowances per ewe for weeks 7 to 6, 5 to 4, 3 to 2 and prior to “spread out” for lambing were as follows: 1.3, 1.4, 1.6 and 1.6 kg for single-bearing ewes grazed separately; 1.4, 1.6, 1.9 and 2.7 for twin-bearing ewes grazed separately; 2.7, 3.0, 3.5 and 4.3 for the twin-bearing ewes that were followed by single-bearing ewes in the leader-follower system. The ewes in this study did not receive any concentrate supplementation. Allocating grass daily to the single- and twin-bearing ewes separately or in the leader-follower system did not affect lamb birth weight, growth rate or weaning weight (Table 5).

The leader-follower system reduced labour requirements by reducing the number of fences to be erected by 50%.

Impact on spring grazing

The effect of the date of extended-grazing on herbage yield during the early part of subsequent spring grazing was evaluated at Athenry. In that study swards were closed either on 5 December, 19 December, 2 January or 23 January. Each 1 day delay in grazing date reduced herbage DM yield by 21 and 35 kg/ha (Figure 1) when grazed on 3 April and 17 April which is equivalent to 7 and 12 ewe-grazing days, respectively. The data from this study clearly illustrated that delayed grazing had a major effect on herbage yield in the subsequent spring.

Impact on sward composition

Ewes are allocated relatively small areas of pasture in extended-grazing systems as typically the area involved has a heavy cover of herbage. A study was undertaken to evaluate the effects of method (clipping, grazing) and month (December, January, February) of herbage removal on sward botanical composition; the results are presented in Table 6. Delaying time of defoliation, either by grazing or clipping, resulted in a reduction in the perennial ryegrass content of the sward and the combined content of Cocksfoot, Timothy and Yorkshire Fog increased. The effect was the same whether herbage was harvested by grazing or clipping. Consequently, extended grazing has a negative impact on sward composition due to the effect of herbage mass per se rather than poaching during grazing. Therefore extended grazing will lead to a reduced reseeding interval.

Conclusions

1. Extended grazing provides an alternative system of managing ewes during mid or mid- to late-pregnancy pregnancy
2. On farms employing extended grazing, autumn is the most critical time for grass supply as paddocks need to be closed to accumulate herbage for extended grazing at a time when lambs need to be finished and the ewes need to be prepared for joining

3. Increasing the interval between autumn closing and subsequent grazing:
 - a) Increases the proportion of decayed herbage
 - b) Reduces herbage feed value
 - c) Reduces the proportion of perennial ryegrass in the sward
 - d) Delays subsequent herbage accumulation for spring grazing
4. Allocating herbage to ewes either daily or twice weekly makes no difference to the performance of their lambs
5. Each 1 day increase in the length of the interval between closing and extended grazing reduces herbage DM yield during the subsequent spring (depending on day of grazing) by up to 35 kg/ha; equivalent to 12 ewe-grazing days.

Table 1. Effect of date of grazing on herbage yield (above 4 cm) and feed value (sward closed on 1 Sept)

	Date of harvest		
	7 Dec	21 Dec	2 Feb
Herbage DM yield (t/ha)	2.06	1.84	1.50
Proportion of dead material	0.13	0.21	0.29
Dry matter digestibility (g/kg DM)	717	719	611

(O’Riordan 1995)

Table 2. Effect of extended-grazing ewes during mid, and mid and late pregnancy on the performance of their lambs

	Over-wintering system			
	Housed plus silage		Extended grazing	
	Unshorn	Shorn	Mid pregnancy	Mid+ late pregnancy
Lamb birth weight (kg)	4.2	4.8	4.4	4.9
Lamb growth birth to weaning (g/day)	288	307	299	312
Weaning weight (kg)	32.4	34.8	33.6	35.2

(Keady et al. 2007)

Table 3. The effects allowance of herbage offered to ewes during mid-pregnancy on the performance of their lambs

	Herbage DM allowance (kg/day)	
	1.0	1.8
Lamb birth weight (kg)	4.63	4.96
Lamb growth birth to weaning (g/day)	289	295
Weaning weight (kg)	33.1	33.9

(Keady and Hanrahan 2009, 2012)

Table 4. The effect of frequency of herbage allocation to ewes during mid-pregnancy on the performance of their lambs

	Frequency of allocation	
	Daily	Twice weekly
Lamb birth weight (kg)	4.7	4.9
Lamb growth rate to weaning (g/day)	294	290
Weaning weight (kg)	33.6	33.9

(Keady and Hanrahan, 2009, 2012)

Table 5. Effect of system of grass allocation to ewes during late pregnancy on the performance of their lambs

Grassland system	Litter size			
	Single		Twin	
	Separate	Follower	Separate	Leader
Lamb birth weight (kg)	5.97	5.80	4.80	4.95
Lamb growth rate to weaning (g/day)	266	269	224	228
Weaning weight (kg)	32.4	32.4	27.1	27.6

(Keady and Hanrahan 2010)

Table 6. Effect of method, and month, of defoliation on subsequent sward composition (%) in the subsequent spring

Grass species	Time of mowing		Date of grazing		
	Mid December	At Grazing	December	January	February
Perennial ryegrass	71	61	67	62	59
Cocksfoot, Timothy plus Yorkshire fog	31	37	32	37	40

Keady et al (2010)

Figure 1. The effects of grazing date on herbage yield early during the subsequent season

