Creep Feeding Concentrate to Lambs at Pasture – Does it Pay?

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The objective in mid-season prime lamb production is to achieve high levels of lamb performance in a cost effective manner. High levels of lamb performance can be achieved from well managed grazed grass offered as the sole diet. However, many producers supplement lambs with concentrate to increase lamb performance. In the past year the price of concentrates have increased dramatically, with some straights having increased by over €100/t. The aim of this paper is to present information on the effects of concentrate supplementation on lamb performance. Furthermore, the effects of concentrate supplementation on projected financial margins, during the last 3 seasons, based on lamb drafting at Athenry and on a commercial farm are also presented.

Athenry Study

The lamb performance response to concentrate supplementation depends on grass supply and digestibility and on the level of concentrate offered. A 4-year study at Athenry involved evaluating the effect of grass supply and concentrate feed level on lamb performance. The ewes used in the study were predominantly rearing twins as the number of lambs reared per ewe ranged from 1.7 to 1.9 during the 4 years of the study. The effects of the level of concentrate offered and grass availability, as determined by residual sward height in a set-stocked grazing system, are presented in Table 1.

Table 1. The effects of concentrate feed levels and grass availability on lamb performance from birth to slaughter

	Creep feed (g/lamb per day)					
	Low sward height (5 cm)				**High sward height (6 cm)**	
	0	**300**	**600**		**0**	**300**	**600**
Weaning weight (kg)	31.4	34.3	36.9		33.7	36.7	37.5
Drafted at weaning (%)	7.3	20.7	42.8		20.4	41.2	53.7
Age at sale (days)	167	140	125		154	126	118
Creep intake (kg)	0	32.5	52.9		0	27.5	46.0

Grennan & McNamara, 2005

The data presented in Table 1 clearly show that high levels of lamb performance were achieved from grazed grass as the sole diet in a set-stocked grazing system. Increasing concentrate feed level increased lamb performance and reduced the age at slaughter, regardless of sward height.

Teagasc data shows that creep feeding concentrate increases lamb performance and reduces age at slaughter by 28 days but may not improve margins

Lambs offered up to a maximum of 300 g or 600 g creep/day consumed 30 kg and 50 kg concentrate, respectively, from birth to slaughter. Feeding 300 g concentrate per lamb daily on the low sward resulted in the same level of lamb performance pre-weaning as lambs grazing the high sward without concentrate supplementation. Therefore, concentrate feeding replaced good grassland management. Concentrate feeding reduced the age to slaughter by 28 days. However, increasing grass height from 5 cm to 6 cm reduced the age at slaughter by 13 days, equivalent to feeding 16.3 kg concentrate per lamb from birth to slaughter. Previous studies at Athenry have shown that shearing ewes at housing increased subsequent lamb birth and weaning weights by 0.6 and 2.2 kg respectively which is equivalent to the response to feeding 22 kg concentrate per lamb from birth to weaning.

The data clearly shows that creep feeding concentrate increases lamb performance and reduces age at slaughter by 28 days. However, does concentrate feeding increase financial returns in a mid-season prime lamb production system as in Ireland most ewes lamb during March?

Financial Implication

The weekly price received per kg of lamb carcass (data supplied by Bord Bia) for the years 2007 to 2010 is presented in Figure 1. Whilst lamb carcass price declines as the season progresses most of the price decline has occurred by late June. To determine the potential financial implication of feeding concentrate it is essential to include the drafting information and individual carcass weight data for all lambs for the entire flock. The drafting data from flocks at Athenry and from a commercial flock for 2008, 2009 and 2010 are presented in Tables 2 and 3, respectively.

These flocks did not offer concentrate to lambs reared as singles or twins whilst lambs reared as triplets received up to 300 g concentrate daily until weaning. To estimate the effect of concentrate feeding on financial returns, the carcass value received and estimated carcass value had the lambs being offered up to 300 g concentrates daily and consequently slaughtered 4 weeks earlier (based on lamb prices supplied by Bord Bia) are presented in Tables 2 and 3. The mean carcass weights for the lambs from the Athenry flock were 19.0 kg, 19.1 kg and 20.6 kg, respectively for 2008, 2009 and 2010. The mean carcass weights for the lambs from the commercial flock were 21.8 kg, 21.1 kg and 21.7 kg, respectively, for 2008, 2009 and 2010.

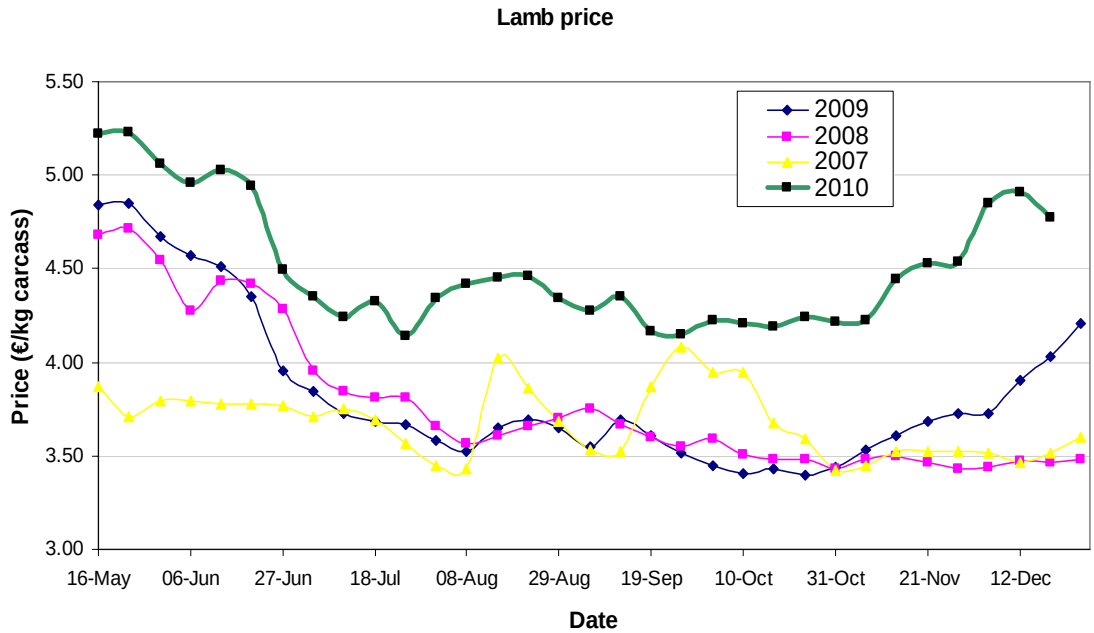

Figure 1. Lamb carcass price (€/kg) during the seasons 2007 to 2010

The drafting data for the Athenry flock presented in Table 2 clearly show that if concentrate had been offered, the price received per kilogram of lamb carcass for the first and second draft of lambs would have been increased significantly. However, when the increased price which would have been received due to earlier drafting as a result of concentrate feeding was calculated accross the

whole flock, the increase in average carcass price was 17, 9 and 1 c per kilogram in 2008, 2009 and 2010, respectively.

To improve financial margins producers should focus on improving grassland management

Table 2. The effects of concentrate feeding on lamb carcass value for the Athenry flock 2008, 2009 and 2010 ((Keady, 2010))

Year	No concentrate		Price (€/kg) at sale		
	Date	% Sold	No conc. offered	If offered concentrate**	Difference (c/kg carcass)
2008	25 June	21	4.28	4.54	+26
	25 July	44	3.80	4.28	+46
	8 Sept	69	3.66	3.60	-6
	6 Oct	87	3.50	3.66	+16
	4 Nov	100	3.50	3.59	+9
		Average	***3.73***	***3.90***	***+17***
2009	22 June	11	3.95	4.67	+72
	29 July	24	3.58	3.85	+27
	18 Aug	34	3.69	3.67	-2
	8 Sept	61	3.69	3.65	-4
	29 Sept	75	3.45	3.54	+9
	29 Oct	89	3.44	3.45	+1
	26 Nov	100	3.68	3.44	-24
		Average	***3.63***	***3.72***	***+9***
2010	17 June	4	4.94	5.23	+29
	1 July	6	4.36	4.97	+61
	20 July	13	4.14	4.41	+1
	12 Aug	25	4.46	4.32	-14
	12 Sept	55	4.26	4.46	+20
	30 Sept	70	4.23	4.28	+5
	4 Nov	84	4.22	4.21	-1
	7 Dec[$]	100	4.90	4.44	-46
		Average	***4.40***	***4.41***	**+1**

(** offered up to 300 g concentrate/lamb daily thus reducing age at slaughter by 28 days)
([$] Draft delayed due to extreme weather conditicions)

The drafting data for the commercial flock, presented in Table 3, clearly show that if concentrate had been offered, the price received per kilogram of lamb carcass was increased significantly for the first draft. However, when this increased price which would have been received due to the earlier drafting as a result of concentrate feeding was calculated accross the whole flock, the increase in average carcass price was 2, 10 and 22 c per kilogram in 2008, 2009 and 2010, respectively.

Table 3. The effects of concentrate feeding on lamb carcass value for a commercial flock in 2008, 2009 and 2010

Year	No concentrate		Price (€/kg) at sale		
	Date	% Sold	No conc. offered	If offered concentrate**	Difference (c/kg carcass)
2008	3 July	6	3.95	4.27	+32
	22 Aug	29	3.66	3.66	0
	12 Sept	45	3.66	3.60	-6
	21 Oct	70	3.48	3.55	+7
	11 Nov	90	3.50	3.48	-2
	4 Dec	100	3.50	3.50	0
		Average	***3.60***	***3.62***	***+2***
2009	9 July	12	3.72	4.51	+79
	17 Aug	38	3.69	3.67	-2
	10 Sept	69	3.69	3.67	-2
	12 Oct	83	3.43	3.61	+18
	27 Nov	100	3.44	3.45	+1
		Average	***3.62***	***3.72***	***+10***
2010	15 July	37	4.33	4.94	+61
	22 Aug	54	4.34	4.34	0
	13 Sept	79	4.17	4.46	+29
	27 Sept	89	4.23	4.28	+5
	27 Nov	100	4.53	4.22	-31
		Average	***4.30***	***4.52***	**+22**

(** offered up to 300 g concentrate/lamb daily thus reducing age at slaughter by 28 days)

The data presented in Tables 2 and 3 clearly illustrate that whilst concentrate feeding reduced the age of slaughter by 28 days it had relatively marginal effects on the average price received per kilogram of lamb carcass for the whole flock. Lambs that are offered 300 g concentrate daily consume 30 kg of concentrate prior to slaughter. The cost of concentrate consumed by lambs prior to slaughter is €7.00 or €9.00, when concentrate costs €250 and €300/t, respectively.

To recover the cost of concentrate, the break price at which concentrate would need to have been purchased was €108/t, €57/t, and €0/t for the Athenry flock and €0/t, €70/t and €144/t for the

commercial flock in 2008, 2009 and 2010, respectively. Therefore for the two flocks, in each of the last 3 years, feeding concentrate to lambs at pasture was not economically justifiable because it could not be purchased at less than the break even price.

In the costing exercise no economic value was attributed to the grass which is not consumed due to earlier sale of lambs offered concentrate because the opportunity value of the grass on a sheep farm in the summer is relatively low. However, no cost has been included for the price of the feeders or the labour to feed the concentrate daily.

The data in Tables 2 and 3 show that under market conditions which prevailed in 2008, 2009 and 2010, the extra carcass value received due to creep feeding in mid season prime lamb producing flocks did not even come close to covering the cost of concentrate offered. Therefore, to improve financial margins the majority of producers should focus on improving grassland management which is low cost, rather than trying to replace poor grassland management with concentrate which is an expensive solution and is guaranteed to reduce margins.

Summary

1. Concentrate supplementation at up to 300 g/lamb daily
    a. increases lamb performance
    b. reduces age at slaughter by 28 days
    c. increases price received for the first draft
    d. marginal effects on mean carcass price for the total flock
2. In mid-season lamb production systems, the increased carcass value due to concentrate feeding does not cover the cost of the concentrate.

References

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