

The effects of offering grass or maize silages to in-lamb ewes on body weight and condition changes, colostrum yield and quality

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Keywords: grass, maize, ewe, colostrum

Introduction Hay and more recently grass silage (GS) have been the traditional feeds for sheep in Ireland over the winter period. Alternatives such as maize silage (MS) are becoming increasingly important as winter forage sources especially for cattle. This study sought to evaluate grass silage and maize silage when offered to pregnant ewes.

Materials and methods Sixty four oestrus synchronised, Suffolk-cross, twin-bearing ewes were individually penned and offered either grass silage or maize silage at the rate of 1.1 times the previous day's intake. The forage diet was supplemented from d 98 of gestation with 400g/d of a barley (35.2%), molassed beet pulp (35.1%), soyabean meal (22.2%) based concentrate. Ewes were weighed and body condition scored at the beginning and end of the experiment. Following lambing, the ewe's udder was covered for 24-h, to prevent suckling by the lambs, and the ewes were hand milked at 1-h, 10-h and 18-h. At each milking measured quantities of colostrum were fed to each lamb. The lambs were blood sampled at 24-h and analysis carried out for immunoglobulins level in the colostrum (Fahey & McKelvey, 1965) and blood (McEwan, *et al.*, 1970).

Results The feed analysis and ewe performance data are presented in Tables 1 and 2 respectively. The forages offered were high quality and well preserved. The higher dry matter (DM) maize silage gave a 16.8% increase in silage DMI compared with grass silage. The lower CP in the maize was partially offset by the higher DMI to give similar levels of crude protein intake. Reflecting the higher DMI with the maize silage, these ewes gained more weight and lost least condition. The higher DMI with maize silage was not reflected in higher colostrum or IgG yields or in the efficiency of IgG absorption.

Table 1 Analysis of silages and concentrate

	Grass Silage	Maize Silage	Concentrate
Dry Matter (%)	24.4	27.1	86.5
pH	3.6	3.7	-
Composition (g/kg DM)			
Crude protein	112	81	208
Crude fibre	356	261	85
NDF	587	572	-
Ash	74	40	59
Ether extract	26	29	12
Starch	-	280	215
Buffering Capacity (mEq/kg DM)	1023	695	-
%DMD (in vitro)	69.7	66.2	94.3
ME (MJ/kg DM)	10.1	9.7	13.8

Table 2 Effect of diet on ewe and lamb performance

	Grass Silage	Maize Silage	SEM	sig
Silage DMI (kg/d)	0.95	1.11	0.041	**
Total DMI (kg/d)	1.29	1.47	0.037	**
Total MEI (MJ/d)	14.3	15.6	0.40	*
CPI (g/d)	178	169	3.2	*
Weight change (kg)	10.9	12.9	0.66	*
Body score change	-0.22	-0.08	0.043	*
Gestation length (d)	148.4	146.4	0.34	***
Litter weight (kg)	9.87	9.53	0.237	ns
Colostrum: (ml)				
1-h	525	510	60.9	ns
10-h	618	654	40.6	ns
18-h	596	566	31.8	ns
IgG yield to 18-h (g)	79	75	3.9	ns
IgG absorption (%)	14.7	13.3	1.92	ns

Conclusions The ewes on maize silage were closer to their energy requirements as reflected in their lower losses in body condition score and higher liveweight gain in late pregnancy. For the commercial producer, supplementing maize silage with 400g/hd per d of concentrates at a flat rate over the last seven weeks of pregnancy may result in the body reserves of well-fleshed ewes not being fully utilised. Consequently, it may be possible to reduce the level of concentrate supplementation given to the ewes in late pregnancy when maize silage rather than grass silage is used, provided the protein content of the supplement is increased.

References

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