

# Spring calving suckler beef systems: influence of grassland management system on herbage availability, utilisation, quality and cow and calf performance to weaning

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**Introduction** Suckler beef systems in Ireland are primarily based on grass. Suckler systems vary in intensity but many operate low input systems and participate in REPS (Rural Environmental Protection Scheme). As there is a considerable cost associated with second-cut silage this research compared a two-cut system with a simplified low input one-cut system.

**Materials and methods** Data were collected over three consecutive years from two, rotationally grazed (mid-April to Oct./Nov.) systems using a total of 188 spring-calving Limousin × Friesian and Simmental × (Limousin × Friesian) cows and their progeny to weaning. The systems were (i) High (H); stocking rate (SR) of 0.77 ha/cow unit, 206 kg/ha nitrogen (N), two silage cuts and (ii) Low (L); SR of 0.95 ha/cow unit, 102 kg/ha N and one silage cut. Pre- and post-grazing sward heights and mass were measured using a rising plate meter and cutting (4 cm stubble height) and weighing strips (0.54 m x 4.5 to 5 m) of grass, respectively. Herbage yield and grass crude protein (CP) and dry matter digestibility (DMD) were determined in years 1 and 3.

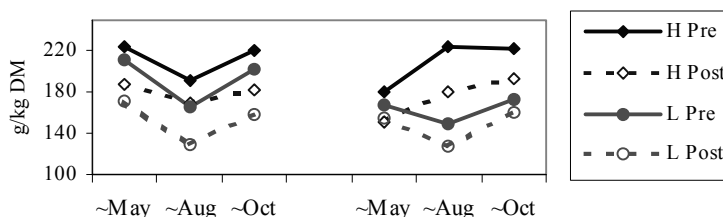
**Results** There was no significant effect of grazing system on cow liveweight or body condition score changes or calf liveweight gains at pasture over the entire grazing season in any of the three years (Table 1). Pre-grazing heights were similar for both systems in the three years, but post-grazing heights (and yield) were lower ( $P < 0.05$ ) for H than L in year 1. There was no significant difference between systems in herbage DMD either pre- or post-grazing. In year 1 herbage CP was lower pre-grazing (n.s.) and post-grazing ( $P < 0.01$ ) and, in year 3 lower ( $P < 0.001$ ) both pre- and post-grazing for L than H (Figure 1).

**Table 1** Cow liveweight and body condition score changes, calf liveweight gains and, herbage availability and *in vitro* digestibility for the High (H) and Low (L) grazing systems over three years

System	Year 1			Year 2			Year 3		
	H	L	s.e.	H	L	s.e.	H	L	s.e.
<b>Cow weight gain (kg)</b>									
Turnout – June	26.8	33.4	9.6	58 <sup>a</sup>	45 <sup>b</sup>	4.3	46	58	5.4
June – housing	31.0	31.5	8.7	26 <sup>a</sup>	41 <sup>b</sup>	4.2	37	36	3.4
Turnout – housing	57.8	65.4	11.4	84	86	6.0	83	94	5.4
<b>Cow body condition score change</b>									
Turnout - housing (units)	-0.02	-0.19	0.14	0.44	0.47	0.12	0.41	0.59	0.09
<b>Calf weight gain (kg)</b>									
Turnout - housing	252	256	6.8	237	234	3.6	238	241	3.8
<b>Grazing heights (cm)</b>									
Pre	12.1	12.6	0.48	11.4	11.4	0.22	11.6	10.9	0.24
Post	5.7 <sup>a</sup>	6.3 <sup>b</sup>	0.17	5.6	5.8	0.10	6.3	6.2	0.11
<b>Grazing mass (kg)</b>									
Pre	2022	2369	163.0	-	-	-	2325	2541	140.0
Post	424 <sup>a</sup>	555 <sup>b</sup>	33.0	-	-	-	1005	1003	72.7
<b><i>In vitro</i> dry matter digestibility (g/kg)</b>									
Pre	750	764	10.4	-	-	-	761	747	5.7
Post	674	655	14.0	-	-	-	640	641	7.3

\* Columns, within year with different superscripts are significantly different,  $P < 0.05$

**Conclusions** Cow and calf performance at pasture was similar between the management systems. Grass DMD did not differ between the systems but CP levels were lower for L than H reflecting the lower N fertiliser application.



**Figure 1** Pre- and post-grazing herbage crude protein for systems H and L in years 1 and 3