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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The XX International Grassland Congress took place in Ireland and the UK in June-July 2005. The main congress took place in Dublin from 26 June to 1 July and was followed by post congress satellite workshops in Aberystwyth, Belfast, Cork, Glasgow and Oxford. The meeting was hosted by the Irish Grassland Association and the British Grassland Society.

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Keywords: grassland management systems, suckler cow

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

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

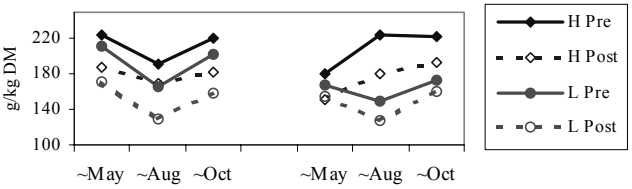

Figure 1 Pre- and post-grazing herbage crude protein for systems H and L in years 1 and 3

Management of pasture quality for sheep on New Zealand hill country

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Keywords: decision-making, farmer knowledge, feed budgeting, planning, tactical management

Introduction The control of pasture quality over spring is central to the achievement of high levels of sheep performance on hill country. Despite this, with the exception of the work of Lambert *et al*. (2000), little is known about how farmers actually manage pasture quality. The purpose of this research was to describe how a high performing hill country farmer manages pasture quality on their sheep area over spring and from this develop a framework that will assist other farmers improve their pasture management.

Method and materials The case study farmer (647 ha, 7,770 s.u.) was selected because of his high levels of performance for the district and expertise in tactical feed management. Data collection was primarily through monthly semi-structured interviews supported by field observations. Interview data were transcribed verbatim and analysed using qualitative techniques to develop a model of the farmer's decision-making processes.

Results and discussion The control of sheep pasture quality requires farmers to make important strategic and tactical decisions (Figure 1). Strategic decisions aim to match feed supply with pasture growth over the spring and maintains grazing pressure so that average pasture cover (APC) levels do not exceed 1200 kg DM/ha. Key decisions in this area include lambing date, stocking rate, sheep performance levels, pasture cover at set-stocking, stock purchase and sale dates, shearing policy and weaning date. Equally important are the tactical decisions to minimise within- and between-block variation in pasture cover levels (≈ 1200 kg DM/ha) during mid- to late-spring. Key tactical decision areas include: (1) ensuring the correct distribution of pasture cover at set-stocking, (2) setting stocking rate and pasture cover levels at set-stocking for the different sheep mobs that best match feed demand to pasture growth, (3) integrating cattle to help control the steeper contour sheep paddocks and (4) using fortnightly monitoring and micro-budgeting to match feed demand with feed supply.

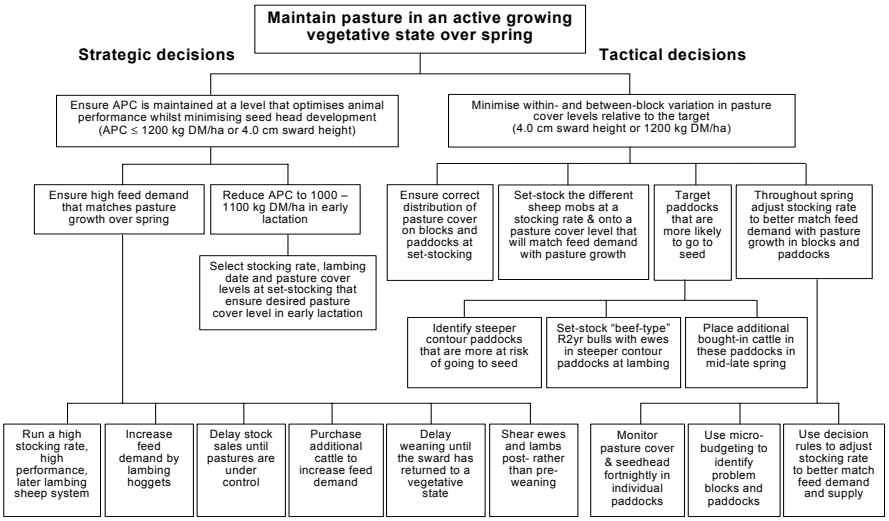

Figure 1 Methods used by the case farmer to manage pasture quality on his sheep area

Conclusions This study highlights that the control of pasture quality on hill country is complex, requiring farmers to make a range of important strategic and tactical decisions. The model presented in this paper provides a framework that other farmers can use to improve their management of pasture quality on hill country.

References

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