

Effect of restricted access time to pasture in spring on the performance of autumn- and spring-calving beef suckler cows and their progeny

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Introduction: Extending the grazing season via earlier turnout to pasture in spring can lead to greater profitability in grass-based suckler beef systems by reducing slurry handling and feed costs (Crosson *et al.*, 2009). This is not easily achievable under adverse weather and soil conditions. O'Riordan *et al.* (1996) showed that allowing yearling steers restricted access time to grazed pasture daily was an alternative strategy, that may be applicable in poor grazing circumstances. Two experiments were carried out to determine the effect of early turnout to pasture in spring via restricted access time daily on the performance of lactating autumn- (Experiment 1) and spring- (Experiment 2) calving suckler cows and their calves.

Materials and methods: In Experiment 1, thirty two lactating autumn-calving suckler cows were blocked by genotype, weight, calf gender and calving date and from within block, randomly allocated to one of two dietary treatments: (i) grass silage ad libitum plus 2 kg of concentrate daily or (ii) 0.2 total grass silage dry matter intake plus 6 hours access to pasture daily. Calves remained indoors and were offered grass silage ad libitum and had twice-daily access to their dams for suckling. The dietary treatments lasted from 3rd March until 1st April. Similarly, in Experiment 2, twenty four lactating spring-calving suckler cows were allocated to one of two treatments: i) grass silage ad libitum or ii) 0.2 of total grass silage dry matter intake plus 6 hours access to pasture daily. Calves remained indoors and had twice-daily suckling access. The duration of the dietary treatments was from 26th March until 16th April. At the end of experiments all animals were turned out to pasture until weaning. Cow live weight, body condition score (BCS), ultrasonic fat and muscle depth, and milk yield (weigh-suckle-weigh procedure – Exp. 1 only) and, calf live weight was measured. To facilitate adjustments in gut fill to the grass diet, cows were weighed 14 and 7 days following turnout to pasture in Experiments 1 and 2, respectively. Data were statistically analysed using ANOVA.

Results: In Experiment 1, live weight gain to post-turnout was greater ($P < 0.01$), BCS gain to turnout was lower ($P < 0.05$) and milk yield was higher ($P < 0.05$) in cows turned out early than those turned out late (Table 1). During the dietary experimental period, calves of autumn-calved cows turned out early had significantly higher average daily gain (ADG) but ADG to weaning did not differ ($P > 0.05$) between treatments. In Experiment 2, cow performance was similar ($P > 0.05$) between treatments. Calves of spring-calved cows turned out early had higher ($P < 0.05$) ADG to turnout, but subsequent ADG did not differ ($P > 0.05$) between treatments.

Table 1 Performance of autumn- and spring-calving cows and growth of their calves

		Exp. 1: Autumn-calving				Exp. 2: Spring-calving				
		Early	Late	SEM	Sig.	Early	Late	SEM	Sig.	
Cow:	Initial live weight (kg)	623	632	5.2	NS	560	564	17.4	NS	
	Change to turnout	-36.6	-30.5	3.52	NS	-3.2	-3.8	5.19	NS	
	Change to post-turnout	18.7	1.0	3.47	**	4.1	-7.0	4.97	NS	
	Change to weaning	33.6	19.9	12.39	NS	39.5	7.0	17.14	NS	
	Initial body condition score (0-5)	3.1	3.1	0.05	NS	2.0	2.1	0.05	NS	
	Change to turnout	0.0	0.2	0.07	*	0.1	0.1	0.03	NS	
	Change to weaning	-0.6	-0.6	0.06	NS	0.1	0.0	0.06	NS	
	Ultrasonic measurement (mm):									
	Fat - 13 th rib	Initial	2.1	1.9	0.22	NS	1.6	1.5	0.31	NS
		Change to turnout	-0.1	0.3	0.29	NS	0.1	0.5	0.18	NS
	Fat - 3 rd lumbar	Initial	1.9	1.8	0.22	NS	1.4	1.7	0.37	NS
		Change to turnout	-0.2	0.2	0.32	NS	0.3	0.1	0.16	NS
	Fat - rump	Initial	5.2	4.9	0.32	NS	3.0	2.4	0.65	NS
	Change to turnout	1.7	2.8	0.54	NS	0.3	0.7	0.32	NS	
Muscle - 3 rd lumbar	Initial	58.9	63.4	1.55	NS	58.1	58.0	2.06	NS	
	Change to turnout	7.7	1.3	2.28	NS	-3.3	-7.0	2.06	NS	
Milk yield (kg/day)		9.4	7.5	0.48	*	-	-	-	-	
Calf:	Initial weight (kg)	200	199	4.22	NS	62	65	2.2	NS	
	ADG to turnout (g)	983	849	36.3	*	1138	898	66.0	*	
	ADG to post-turnout (g)	1136	923	33.8	***	847	822	54.3	NS	
	ADG to weaning (g)	1163	1122	36.3	NS	934	979	38.4	NS	
	ADG post-turnout to weaning (g)	1175	1205	47.7	NS	950	1005	40.8	NS	

Conclusion Results suggested that allowing beef suckler cows restricted access time to grazed pasture daily is a strategy to permit early-spring grazing.

References

- Crosson, P., McGee, M., Drennan, M.J. 2009. Agricultural Research Forum, 68.
 O'Riordan, E.G., Keane, M.G., Drennan, M.J. 1996. Agricultural Research Forum, 47-48.