

# Lamb Output from Two Pasture Systems: 1994 to 1997

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Pasture can provide a very economical source of feed for spring-lambing flocks. A trial was initiated in 1993 to examine the output of lamb from an old grass pasture managed under two distinct grazing systems: short duration rotational grazing and a modified continuous grazing system (see Table 1). The modified continuous system consisted of three areas that could be grazed separately or all at once depending on conditions. The pasture was over 10 years old and dominated by bluegrass, bromegrass, and quackgrass. The clover content was less than 5% and few weeds were present. Soil tests indicated that phosphorus and potassium levels were high.

**Table 1. Details of grazing systems under test.**

System	Total Area	Paddock # and Size	Period of Stay
Rotational (R)	1.32 ha (3.3 ac)	8 @ 0.165 ha (0.4 ac)	3 to 5 days
Modified Continuous (C)	1.92 ha (4.8 ac.)	4: Size varies from 0.4 ha (1 ac) to whole field.	Initially 10 to 20 days, continuous by late summer

The trial was conducted from 1994 to 1997. In 1994, ewes and lambs remained on the trial area all season (no weaning) with some animals being removed in July and August to ensure adequate forage availability. In the final 3 years of the study, lambs were weaned in mid to late July and left on the trial area while the dry ewes were weighed and removed from the trial. Thus, the trial area supplied enough forage for all lambs to remain on the trial until mid-September (Table 2).

**Table 2. Details of grazing systems from 1994 to 1997.**

Factor	System	1994	1995	1996	1997
Start Date	Both	June 7	May 25	May 24	May 23
End Date	Both	Sept. 14	Sept. 14	Sept. 12	Sept. 04
Grazing Days	Both	99	112	111	104
Weaning Date	Both	Sept. 14	Aug. 01	July 17	July 24
# of Ewes	Rotational	30	34	32	34
	Continuous	30	30	32	30
# of Lambs	Rotational	53	58	63	67
	Continuous	49	60	63	59

**Lamb Gain:** Averaged over four years, no significant difference in average daily gain per lamb occurred (Table 3). Lamb gains were satisfactory considering the high stocking rates used and the fact that the pastures had very little legume present. Gains in 1994 were much higher than in subsequent years; possibly because the lambs were not weaned (less stress) and additional land was grazed in late summer to ensure maximum intake of forage. Relatively poor gains on the rotationally grazed lambs in 1995 resulted from an outbreak of coccidiosis shortly after the start of the pasture season. Lamb gains were reasonably consistent over the final three years.

**Table 3. Animal performance per head and per hectare on two grazing systems 1994-1997.**

System*	Lamb Daily Gain (grams)		Ewe Daily Gain/Loss (grams)		% "A" Grade Lambs off Pasture		Lamb Gain per Hectare (kg)		Net Gain per Hectare (kg)	
	R	C	R	C	R	C	R	C	R	C
1994	250	253	-12	5	78	69	666	349	600	334
1995	160	180	-166	-174	38	10	789	619	524	433
1996	181	186	-93	-27	65	19	946	680	824	660
1997	189	187	-18	-32	64	51	912	594	886	562
Ave.	195	202	-72	-57	61	37	828	561	709	497

\* R=rotational; C=modified continuous

**Ewe Weight Change:** In 1994, rotationally grazed ewes had a small weight loss while those on the continuous system gained slightly (Table 3). From 1995 to 1997, ewes on both systems lost weight, with losses being greatest in 1995. During the latter three years, ewes were weighed off the trial at weaning (late July) when they tended to be relatively thin following lactation.

**Lamb Live Grade Off of Pasture:** The lambs that were rotationally grazed consistently had a higher percentage live-graded as "A" lambs directly off of pasture in September (Table 3). The percentage of "A" lambs was also much more consistent from year-to-year on the rotationally grazed treatment. On the continuous pastures, quality was often poor in July as the excess spring growth matured. After clipping, the regrowth was of high quality but the volume available for grazing was restricted which affected lamb growth and finishing. Analysis of pasture yield and quality data is ongoing.

**Lamb Gain per Hectare:** Rotational grazing consistently produced more lamb per hectare of pasture than continuous grazing (Table 3). The increase in output per hectare averaged 48% over four years. Where land costs are high, output per hectare of pasture is an important consideration.

**Net Gain per Hectare:** Net gain per hectare is the sum of lamb gains and ewe losses over the season. This gives a more accurate reflection of what the pasture produced since some of the lamb's weight gain came at the expense of weight loss in the ewes. In terms of net gain per hectare, rotational grazing provided higher output in each of the four years than the modified continuous system, with an average improvement of 43%.

**Summary:** Lambs grazed at high stocking rates on short duration rotational grazing had similar average daily gain as lambs grazing on a longer duration (continuous) system. The proportion of lambs considered "A" grade directly off of pasture was greater under rotational grazing. Total liveweight gain per hectare for lambs alone and ewes and lambs together was consistently greater under rotational grazing. Where one's land base is limited or land costs are high, short duration rotational grazing should be employed to increase lamb output per hectare. When intensive high-stocking rate systems are employed for young lambs, a high level of management must be practiced to control coccidia and other parasite problems.