

Mixed fattening of steers and lambs on improved grasslands in Uruguay: II. animal performance and productivity

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Introduction In cow-calf operations in Uruguay, mixed cattle and sheep grazing on rangelands is predominant, while fattening is a specialised process. Within certain limits of the lamb/steer ratio and stocking rate, a complementary grazing effect occurs under mixed grazing, improving net results (Nolan & Connolly, 1977; Risso *et al.*, 2002). These trials characterise animal performance under such management.

Materials and methods Two types of pasture improvement (IT), *Trifolium repens* cv. Zapicán (WCL) and *Lotus subbiflorus* cv. El Rincón (LR) were studied, together with three lamb/steer ratios (LSR, 1.5:1, 4:1 and 7:1), for 265 d for three years (see Part 1). Average stocking rate was 470 kg live weight (LW)/ha although this varied between years as a result of different LSR (524, 563 and 356 kg LW/ha.). Twenty-eight steers (initial LW 326 kg) and 72 lambs (during 2000) or 148 lambs (2001 and 2002) were used. There were two cycles of lamb fattening (autumn-winter, C1, and early-late spring, C2) each year except that in 2002, only the low LSR was used in C2. Animals were weighed every 28 d and regression analyses were performed to estimate daily gains (DG). Live weight and wool/ha were calculated using DG, stocking rate and period length. The experimental design was a complete randomised block (two replicates), with a factorial arrangement combining IT and LSR.

Results Steer DG was high in all cases (Table 1). There was no consistent significant effect of LSR on DG, with the exception of year 2001. The highest DG in 2000 derived from the lower LSR in that year as well as from an intermediate stocking rate. The small difference in DG between the last two years, was caused by lower forage availabilities (see Part I). Lambs in C1 had a significantly ($P<0.05$) higher DG (89 g/d) on WCL, than on LR (74 g/d). In addition, low LSR resulted in significantly ($P<0.05$) better DG than high LSR (88 vs. 76 g/d), probably as a result of intraspecific competition with the higher number of lambs. Lambs of C2, had a significantly ($P<0.05$) lower DG on WCL. The DG averages for the three years were 164 and 173 g/d for WCL and LR respectively, probably resulting from the higher legume percentage with LR (see Part I). As in C1, low LSR resulted in better DG than high LSR (178 vs. 165 g/d), for the two years. A consistent tendency for higher production in WCL at the lower LSR

Table 1 Daily gain (g/d) of steers according to treatment and year

Treatment	2000	2001	2002
WCL-H	979	763a	772
WCL-L	938	684b	773
LR-H	915	736ab	735
LR-L	896	695ab	723

*Different letters within columns, are significantly different ($P<0.05$)
 Note: L (Low LSR) and H (High LSR)

occurred, probably due to the higher steer density (Figure 1). The decrease in animal production with a higher stocking rate was associated with lower DG.

Conclusions Both IT resulted in good production in mixed fattening production systems, with no consistent effect of the ration of lambs to steers over the range studied.

References

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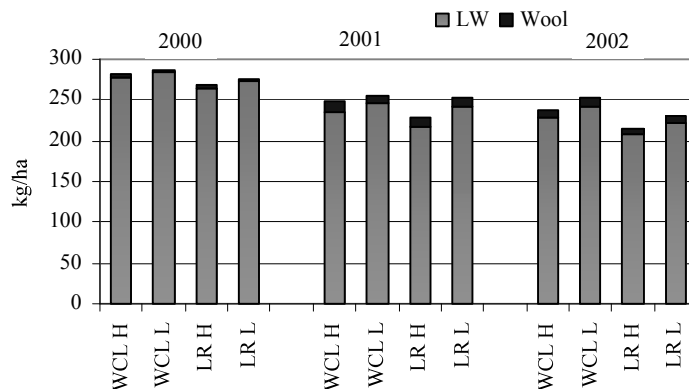


Figure 1. Live weight wool production (kg/ha) due to IT and LSR per year