OPPORTUNITIES FOR IMPROVEMENT IN SHEEP AND BEEF CATTLE PRODUCTION IN THE SOUTH EAST OF SOUTH AUSTRALIA

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SUMMARY

A random sample of 300 farms in the South East of South Australia was surveyed to determine current management practices and to identify areas where farm profitability could be improved. Eighty one percent of sheep flocks lambed during February - May, and 81% joined ewes for more than 8 weeks. Lambs were weaned more than 14 weeks after lambing in 62% of Merino flocks and more than 17 weeks after lambing in 43% of other breed flocks. No flocks were considered to have adequate worm control. Nearly all beef herds calved during January - May and 78% joined heifers and 83% joined cows for 12 weeks or longer. Less than 25% of herds monitored growth rates or pregnancy status. In most cattle herds worm drenching was excessive in adults and inefficient in yearlings. A conclusion from the survey is that reproductive management and worm control practices of both sheep and cattle can be improved in most flocks and herds. Altering management to a shorter joining, later lambing and earlier weaning in sheep would improve the efficiency of sheep production. For cattle, shorter mating periods for cows and heifers, earlier age of joining for heifers, and the joining of heifers 3-4 weeks earlier than cows would be widely beneficial.

INTRODUCTION

The South East of South Australia has 420,000 (45%) of the cattle and 5 million (29%) of the States sheep population. The region covers 1.1 million hectares (3%) of the area of rural establishments in the State (ABS 1987/88). No survey of sheep and cattle production has previously been undertaken. The aim of this survey was to determine current breeding management practices and evaluate worm control strategies on sheep and beef cattle farms in the South East region. This information is necessary to assess opportunities for improving animal health and production in the region.

MATERIALS AND METHODS

In June 1989 survey questionnaires *were* mailed to 300 farmers in the South East of South Australia. Survey participants were randomly selected from the current cattle tail tag register which identified properties with cattle or cattle and sheep enterprises. A second questionnaire was sent after four weeks to those farmers who had not responded. All questions were closed multiple choice except where specific quantities or dates *were* requested. Areas covered by the questionnaire included property size, numbers of stock, time and length of joining, age at weaning, extent of crossbreeding, weighing and pregnancy testing in cattle herds, and adoption of recommended worm control strategies.

From the 161 (54% response rate) completed questionnaires received, 107 sheep enterprises with at least 300 DSE (dry sheep equivalents) of sheep, and 133 cattle enterprises with at least 200 DSE of cattle *were* analysed. These numbers represented 5% of sheep and 7% cattle enterprises in the region; Not all respondents answered all questions. To estimate flock and herd size, Merino wethers and hoggets were rated at 1 DSE; Merino breeding ewes at 1.7 DSE; Merino rams at 2 DSE; other breeds of sheep at 1.2 times Merino DSE estimates; breeding cows at 12 DSE; bulls, steers and heifers at 10 DSE; and weaners at 6 DSE (White and Bowman 1981).

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RESULTS

Sheep enterprises

The average stocking rate across all farms was 7.3 DSE/ha (standard deviation 3.2). Merinos were the main sheep breed on 76% (n,denominator=107) of farms. In 86% (n=65) of Merino flocks and 76% (n=70) of other breed flocks, ewes were joined to lamb during February-May. The duration of joining and age at weaning for sheep flocks are set out in Table 1 and Table 2.

Table 1 Duration of joining in flocks with Merino or other breeds of sheep

Duration of joining (weeks)	Merino* (n=64)	Other breeds* (n=70)
<7	8	1
7–8	22	9
9–10	31	29
>10	39	61

* All values are expressed as a percentage of total flocks for each breed.

Table 2 Age at weaning in flocks with Merino or other breeds of sheep

Age (weeks)	Merino* (n=62)	Other breeds* (n=70)
<12	3	0
12–14	35	14
15–17	39	43
>17	23	43

* All values are expressed as a percentage of total flocks for each breed

Two summer drenches were given to all sheep during November – February in 18% (n=62) of flocks. Faecal egg count reduction tests (Vizard and Wallace 1987) had been performed in 18% (n=105) of flocks, with drench resistance detected in 52% of these flocks. Only 5% of flocks did both of the above as well as drench lambs at weaning. A 'low worm risk' paddock was reserved for weaners on less than 28% (n=101) of sheep farms. While 67% (n=105) of farms drenched introduced sheep, only 29% (n=70) of these used Ivomec^{R} or combined levamisole and benzimidazole drenches to prevent the introduction of drench resistant worms.

Cattle enterprises

Sixty eight percent (n=98) of herds used crossbreeding in either part or the whole herd. The herd size (n=101) ranged between 20 and 100 breeders in 53% of herds and exceeded 100 breeders in 35% of herds. Breeding cows were drenched for worm control in 67% (n=98) of herds. Yearlings were given an effective summer drench to remove hypobiotic work larvae in 31% (n=95) of herds. Cattle were weighed in 23% (n=112) of herds but half of these herds only used scales prior to sale. Heifers were pregnancy tested in 15% (n=66) and cows in 23% (n=72) of herds. In herds with a defined period, 98% (n=49) joined heifers and 96% (n=71) joined cows to calve during January – May. Only 8% (n=59) of herds joined heifers before cows. Heifers were first joined to calve by two years of age in 41% (n=78) of herds. The duration of joining in herds is shown in Table 3.

Table 3 Duration of joining in herds with heifers or cows

Duration of joining (weeks)	Heifers* (n=60)	Cows* (n=86)
<7	2	1
7–11	20	15
12–16	30	31
>16 & <52	30	31
52	18	21

* All values are expressed as a percentage of total herds with heifers or cows

DISCUSSION

Eighty six percent of Merino flocks joined ewes in October-January and 70% for longer than 8 weeks. Ewes were joined during March-April in only 3% of flocks and this concurs with'the 10% of prime lamb ewes reported by Dunstan *et al.* (1983) to lamb in spring in this region. Using a computer model of a self-replacing wool producing flock (Merino3b, Morley, pers. comm.), I estimate that farm *gross* margin in this region could be increased by $17 (19%) per hectare by changing the time of lambing from autumn to spring. Increased farm profits could be achieved through more sheep being able to be carried year-round and less use of supplementary feed. Higher conception rates and multiple births can be achieved within a six-week joining period in autumn compared to joining in spring or early summer (Dun *et al.* 1960; Watson 1953). A six-week joining will ensure a more condensed lambing and increased weaning weights. McLaughlin (1968) found spring lambing enabled faster lamb growth, higher ewe wool production and the potential for increasing ewe stocking rate.

Sixty two percent of Merino flocks delayed weaning beyond 14 weeks of age and the majority did not follow recommended worm control procedures. Revision of sheep reproductive management to ensure Merino lambs are weaned by 12 weeks of age, and worm control practices to include a double summer drench to all sheep, a drench resistance test, and a low worm risk paddock reserve for weaners will increase profits with little added costs. Barger (1982) reported penalties for failure to control worms of between 14 and 79% in liveweight gain and 9 to 31% in wool production in young sheep. Delayed weaning reduces wool production in lambs and weight gain as both lambs and hoggets (Geytenbeek *et al.* 1962).

The majority of beef herds had an extended joining (>12 weeks), 41% of herds joined heifers to calve by 2 y.o., and only 8% of producers joined heifers prior to cows. Reproductive efficiency could be improved at little extra cost by reducing calving spread, joining heifers at 14 months of age, and joining heifers three weeks earlier than cows. A six-week joining in heifers commencing three weeks before a nine-week joining in cows will produce a compact calving, easier management of cattle and pastures, and increased calf weaning weights (Mossman 1981). Less than 25% of herds weighed cattle or used pregnancy diagnosis. Monitoring body weight and pregnancy status will enable increased reproductive performance and productivity (Mossman and Hanley 1977). More efficient worm control could be achieved in most cattle herds by not drenching adult cattle and using the most appropriate drenches in yearlings. Excessive use of worm drench in adults and often ineffective treatment of young cattle for worms is consistent with findings of Michael *et al.* (1981).

Improved productivity on most farms in the South East of South Australia has been realised by the relatively costly undertaking of pasture improvement, as has been done in other areas of high rainfall southern Australia (Lloyd Davies and Myers 1985). This survey has revealed several opportunities to lift farm

productivity and profits by altering current animal health and management practices. In particular attention needs to be given to improving reproductive management in sheep and cattle, worm control practices in sheep, and heifer management in cattle. Changes in these areas can readily increase productivity at relatively little cost. These opportunities should be made known to farmers for the benefit of all in the region.

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