Effect of grazing management on lamb growth rates on barley grass pastures in south-west NSW

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The naturalised cool season annual grass *Hordeum leporinum* (barley grass) is a productive component of many unimproved pastures from germination in autumn to flowering in spring. However, the seeds can damage the eyes and mouths of young sheep (Campbell *et al.* 1972) and penetrate the skin (Warr and Thompson 1976) causing reduced growth rates and carcase damage, and be a major component of vegetable fault in wool. Various management treatments can delay flowering and maintain feed quality (Campbell *et al.* 1972) and reduce the height of seed set (Burt 1966), but there is limited information on the application of these principles in a practical grazing situation.

Materials and Methods

The study area was 8 paddocks each of 1.6 ha of natural pastures at Hay in south-west NSW. The pasture was mainly cool season annuals, particularly Hordeum leporinum (barley grass), with summer-growing grasses and bushes. Four grazing treatments were imposed from 10/2/92 to 3/7/93: repeated sequences of grazing for 24 weeks at low grazing pressure, eight weeks at high (3x low) grazing pressure and 16 weeks with no grazing, to give an annual grazing pressure of 2.5 sheep/ha.

Pasture quality and quantity: In 1993, pasture samples were cut from eight 30 x 30 cm quadrats randomly thrown at equal intervals along diagonal transects across each paddock. The cut material was pooled, dried, weighed, subsampled, ground and analysed for nitrogen and acid detergent fibre.

Lamb growth rates: When the grazing treatments ended on 3/7/93 the dry ewes were replaced by four first-cross (BLxM) ewes and their Dorset sired lambs for study of growth rate over the next 15 weeks.

Results

Lamb growth rates: Average lamb growth from July to mid-October was 200 g/day (217 g/day prior to 23/8 and 182 g/day after 23/8). Before 23/8, lambs in paddocks heavily grazed in summer and early autumn and then rested in late autumn and winter grew faster (255 *versus* 179 g/day; $P<0.05$) than lambs in paddocks heavily grazed in winter and spring, and at similar rates (178 *versus* 187 g/day) after 23/8.

Pasture yield: Paddocks heavily grazed in autumn, and those grazed intensively as recently as 3/5/93 to 3/7/93, had low pasture availability in July. However, pasture increased markedly and by August all paddocks had at least 500 kgDM/ha of high quality forage (CP 17.5-20.6% ; ADF 20.7-24.1%) which only declined marginally in nutritive value while increasing further in quantity by September.

Discussion

Severe grazing in summer and autumn, followed by resting during autumn or winter, respectively, created a pasture which promoted very good growth rate in unweaned lambs, similar to that suggested by Robards and Leigh (1967). As this pasture was created by prolonged grazing and spelling with minimum stock movements, it appears to be a practical way of preparing paddocks for lactating ewes. The decline in rate of liveweight gain after barley grass flowering was probably due to grass seed irritation (Warr and Thompson 1976) and declining nutritive value, and is unlikely to be overcome by grazing management, but rather by providing pastures such as lucerne for late spring grazing of lambs.

References

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