

## CAN VULPIA IN PASTURES BE CONTROLLED WITHOUT USING HERBICIDES?

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*Vulpia* (mostly *Vulpia bromoides* and *V. myuros*) is widely regarded as a weed of Australian temperate pastures. Chemical control using spraytopping and winter-cleaning techniques provide only short-term benefit. Longer term control requires integration of other management inputs such as superphosphate (9.1% P, 11.5% S) application or introduction of competitive species. Pasture composition can be manipulated towards more desirable species by grazing sheep at sensitive stages of development of the target species e.g. at seed production for annual grasses. This approach has been successful for reducing barley grass incidence in pasture (1), but there is little information on the comparative effectiveness of grazing and cultural practices in reducing vulpia seed production and regeneration.

### MATERIALS AND METHODS

Five experiments which commenced in 1995 near Orange in Central-western NSW, aimed to examine the effectiveness of different treatments for reducing seed production of vulpia in a phalaris based pasture. Cutting for silage and hay, spraytopping, and winter-cleaning were compared with grazings by sheep (continuous, strategic), and nil grazing. The strategic grazings aimed to remove 70-90% of available plant material within 5-7 days, at various stages of vulpia development (25%, 50%, 90% tiller elongation; and 50% peeping (seedhead visible)). The spring treatments were evaluated from the number of seedlings germinating on soil cores (7.5 cm diam.) collected during the autumn of 1995.

### RESULTS AND DISCUSSION

Grazing reduced regeneration of vulpia, with no differences found between the strategic grazings and continuous grazing; probably because the continuous stocking rate of 7.5 dse/ha imposed high grazing pressure during drought conditions. Cutting the pasture for hay, storing, and returning the plant material to the same plots in late summer maximised seed set and resulted in the highest regeneration of vulpia. Seed production of vulpia was reduced by 88% (relative to the hay treatment) by grazing at 90% tiller elongation, while regeneration of subterranean clover, and % phalaris were unaffected. The remaining 12% of seedlings would undoubtedly be self-sustaining (1), but strategic grazings as part of an ongoing vulpia management program does look promising. However, the approach needs evaluation in more favourable seasons when the dormant seed fraction is less likely to dominate the seedling dynamics.

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