

Improving annual pastures in the South Australian cereal belt

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Demonstrations of the benefits associated with both grass control and insect pest control have been conducted in the cereal belt of South Australia over the past few years (1, 2). The objective of maintaining annual legumes in a pasture is to provide feed of high quality for the production of specified animal products and to improve soil fertility for the benefit of subsequent cereal crops. Pasture management influences the persistence and production of a legume sward to a greater extent than the characteristics of a particular legume cultivar. Three of the reasons identified as contributing to the decline in the quality of annual legume pastures are poor insect pest control, poor grass control and apathy on the part of the farmer with respect to the value of a legume-dominant pasture (1). This paper describes the benefits of insect pest control and grass control in annual pastures.

Methods

In 1991, a site was established at Jamestown to demonstrate the benefits of grass control on pasture. Two herbicides (Roundup CT² at 120mL/ha and Targa² at 250 mL/ha) were applied in the first week of August and subsequent changes in botanical composition, pasture availability and legume seed production of the treated areas were monitored and compared to an untreated control. In 1992, Le mat² insecticide was applied at 50mUha and Fusilade² at 350mUha with a surfactant (Howet² 250mL/100L water) on 31 May to sites at Tarlee, Clare, Spalding and Jamestown. All sites consisted of four plots each allocated one of the four possible treatment combinations (+/- Insecticide, +/- Herbicide). Botanical composition, herbage availability and legume seed production were monitored. All sites were maintained under normal farm grazing conditions.

Results and discussion

The application of herbicides in 1991 decreased pasture production, however, the herbicides increased the legume component of the sward, reduced the incidence of the less-desirable species and significantly increased the legume seed production compared to the control (Table 1).

Table 1 . The effects of grass control on weed-infested pasture.

Treatment	Botanical composition (%) (mid-October)			Pasture availability (mid-October) (kg DM/ha)	Legume seed yield (mid-December) (kg/ha)
	Legume	Grass	Other		
Control	38.6	21.1	40.3	4898	146
Roundup	83.1	2.2	14.7	3536	530
Targa	63.4	2.0	34.6	4130	866

In 1992, the main impact of the grass herbicide was to increase the legume percentage from 44% to 63%, while percentage grass only decreased from 52% to 30%. The exceptionally wet season may have contributed to the relative ineffective grass control. While grass-selective herbicides decreased total pasture availability, the insecticide significantly increased pasture availability.

The visual impact of these demonstrations on farmers' paddocks provide an excellent focus for technology transfer of information to farmers. By demonstrating to farmers the benefits of an early-season application of insecticide, as well as grass control early in the growing season, such practices have a greater chance of being adopted. These studies are continuing.

References

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