

Invertebrate pests associated with annual medic pastures in South Australia

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Redlegged earth mite (RLEM), *Halotydeus destructor*, lucerne flea (LF), *Sminthurus viridus* and bluegreen aphid (BGA), *Acyrtosiphon kondoi* are considered major pests of pastures in southern Australia (1). These pests are thought to influence the productivity and persistence of annual medics by lowering seedling densities during establishment, net herbage production throughout the growing season, and by reducing seed yields in spring. However, few experiments have attempted to quantify these losses. The aim of this study was to measure the seed yield losses caused by these pests and to determine if medic cultivar influences the level of seed yield loss.

Methods

In September 1991, experiments were carried out in grazed medic pastures growing in loamy mallee soils on the northern Adelaide Plains and Yorke Peninsula. At each site 20 paired plots (2x2 m) were selected, and one plot of each pair was sprayed with insecticide to control pests. Pest densities were assessed every 10-14 days. After plant senescence pods were harvested by vacuum extractor. Samples were machine cleaned and where possible handsorted into different medic cultivars. Material from each cultivar was threshed and weighed.

Results and discussion

Seed yield losses occurred at all sites and to all four annual medic species. There were significant differences in losses between medic cultivars within a site. Site 1 showed differences between cv. Paraponto, barrel and burr medic ($P < 0.05$). There were no significant differences at Site 2. Site 3 showed differences between barrel and burr ($P < 0.05$) and cv. Harbinger and burr ($p < 0.001$). This shows the potential for these pests to influence the botanical composition of pastures containing several medic cultivars.

Table 1. Seed yields of medic cultivars with (1+) and without (1-) insecticide.

Site	Cultivar	Seed yield (kg/ha)		Seed yield loss (%)	Predominant pests
		1+	1-		
1	Paraponto	43	31	28*	RLEM/BGA
	Barrel ^a	284	82	71***	
	Burr ^b	223	137	39***	
2	Harbinger	596	322	44***	BGA
	Jemalong	34	29	41***	
	Burr +	25	19	25*	
3	Harbinger	23	16	30*	LF/BGA
	Jemalong	50	29	42**	
	Burr +	183	162	11 n.s.	

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

^a mixture of cv. Hannaford, cv. Cyprus and cv. Paraggio; ^b naturalised burr medic

References

1. Carter E.D., Wolfe E.C. and Francis C.M. 1982. Proc. 2nd Aust. Agron. Conf., Wagga Wagga. pp. 68-82.

