Seedling vigour and seasonal growth of two hardseeded lines of persian clover in South West Victoria

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Persian clover (Trifolium resupinatum L.) cv Maral produces hay of high quality in southern Australia (1). It is adapted to a range of environments, but it must be resown each year because it is softseeded. Considerable genetic variation in hardseed content and growth habit has been recognised (2,3).

In this study, seedling vigour and seasonal growth of an early and late maturing hardseeded line of Persian clover were compared with Maral.

Methods

Equal numbers of inoculated and lime coated viable seed of SA5315 (flowers 26/10), SA7736 (flowers 27/11) and Maral (flowers 1/12) were sown at Hamilton and Mooralla on 1.5.85 and 2.5.85 respectively. Plots (approx. 3 m2) were fertilized with superphosphate (400 kg/ha) and potash (100 kg/ha). There were six replicates. Establishment was measured by counting seedlings in four (15 cm x 15 cm) quadrats/plot 5 weeks later. Seedling yield was determined for 15 plants/plot. Herbage yield was recorded by cutting two (20 cm x 20 cm) quadrats/plot; plots were then mown off.

Results and Discussion

Table 1. Seedling vigour and seasonal growth of two hardseeded lines of Persian clover

	Line of T. resupinatum	Establishment density plants/m^2	Seedling yield mg/plant	Herbage yield t/ha			
Date		13/6	30/7	3/10	19/11	2/1	Total
Mooralla†	SA5315	915b	66.7b	2.56ab	3.16b	0.40b	6.12c
	SA7736	1127a	64.4b	2.98a	4.39a	0.80b	8.17b
	Maral	1152a	86.4a	2.32b	4.06a	3.97a	10.35a
Date		7/6	29/7	28/8	25/10	23/12	
Hamilton‡	SA5315	1538b	33.0a	1.51b	2.53a	0.38b	4.42b
	SA7736	1625ab	32.0a	1.74ab	2.45a	0.69b	4.88b
	Maral	1766a	38.0a	1.94a	2.01a	5.46a	9.41a

† Mean of five lime rates ‡ Mean of two lime rates
Letters refer to Duncan's multiple range test (P<0.05)

Winter and early spring yield was similar for all lines but a marked differ-ence in yield occurred in late spring and early summer when both SA lines did not regrow after flowering. Maral continued to grow and flower after mid November. Total herbage production of Maral was greater (P<0.001) than the SA lines of Mooralla and it produced twice as much herbage (P<0.001) as the SA lines at Hamilton.

SA7736 was the latest maturing hardseeded line being tested in a selection program at Kybybolite (4). This hardseeded material is unsuited to the long growing season of the high rainfall region of southern Australia.

Acknowledgment

This work was funded from the Australian Wool Research Trust.

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