

The pasture legume status of cereal farms in the central region of South Australia

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During recent years there has been widespread concern at the decline of pasture quality in the cereal-livestock zone of southern Australia. This paper summarises data from on-farm studies of pasture legume status in the Central Region of South Australia.

Methods

The pasture legume status was assessed using Methods based on the ring emergence technique (2, 3). Ring emergence counts done in February-March, by measuring levels of readily germinable (soft) seed, indicated potential pasture legume density. Actual pasture legume density in the naturally regenerated pasture was measured following the autumn rains. Soil cores were also used to provide a measure of the total pasture legume seed reserve in the top 50mm of soil, giving a guide to the long-term regenerative potential of the pasture.

Results and discussion

The results highlight two common characteristics of the current state of pastures in the cereal-livestock zone of southern Australia: (i) There is a great range of pasture quality (legume status) with some very good and very poor pastures in each region (Table 1), and (ii) the status of pasture legumes is generally poor (Table 2) according to the scale established by Carter (1).

Table 1. The pasture legume status in the Central Region measured by total pasture legume seed reserves and seedling emergence.

	Range	Mean	% Below Mean
Seed Reserves in 0 - 5 cm soil (kg/ha)	1 - 878	102	75
Ring Emergence after watering (plants/m ²)	31 - 2746	524	63
Natural Regeneration after rain (plants/m ²)	1 - 1763	396	64

Table 2. The state of pasture legumes on cereal farms in the Central Region of South Australia.

	Legume status ^a		
	Inadequate	Adequate	Good
Seed reserve (kg/ha)	<200	200 - 400	>400
Percentage of sites	89	5	6
Ring emergence (plants/m ²)	<500	500 - 1000	>1000
Percentage of sites	64	20	16
Natural regeneration (plants/m ²)	<500	500 - 1000	>1000
Percentage of sites	72	17	11

^a Some latitude in these classifications is required to account for the differences in seed size and levels of hard-seededness of the specific pasture legumes.

Acknowledgements

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References

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