Register of Australian Herbage Plant Cultivars

B. Legumes
1. Clover
Trifolium subterraneum ssp. *brachycalycinum* (Katzn. *et* Morley) Zohary and Heller (sub clover) cv. Rosedale

Reg. No. B-1d-26
Registered January 1988

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Origin

Rosedale was collected in Turkey in 1974, 8km from Karsiyaka on the road to Yamanlar Dagi, by C.M. Francis of the Western Australian Department of Agriculture, and W.J. Collins of the University of Western Australia. The collection site was at latitude 38°N, altitude 450m, with a soil pH of 8.5 (in water). Rosedale was introduced into Australia as CPI 70124 from which 70124B was selected.

Attention was first drawn to 70124B in 1978 by W.J. Collins and J.S. Gladstones who believed it offered the best combination of earliness, hardseededness, clover scorch tolerance and grazing type habit within ssp. *brachycalycinum*. It was selected by P.E. Beale and submitted by the South Australian Department of Agriculture, which will maintain breeders' seed. Recommended for registration by the South Australian Herbage Plant Liaison Committee. Registered January 1988.

Morphological description

Rosedale is typical of the ssp. *brachycalycinum* (D. Cooke, pers comm., S.A. Department of Agriculture), except for its more prostrate growth habit and cream coloured seeds. Rosedale is easily distinguished from Clare by the leaf marking, which is a pale green band running almost across the entire width of the leaf. This pale green band is faint at times, but prominent following cool weather. The leaves are usually smaller and the petioles shorter than those of Clare. Seeds are cream coloured, somewhat smaller than Clare, with 120,000 per kg.

Agronomic characters

At six widely separated sites on red brown earth soils in Lower, Mid and Upper North districts of South Australia, Rosedale averaged 24kg/ha of seed in the soil following a cereal crop in a three year pasture-cereal-pasture rotation, some 50% higher than Clare. The plant density of 59 plants/m^2 of Rosedale from self-regeneration in the third year was over 60% greater than that for Clare. In the same trials the seed reserves of Nungarin and Daliak were on average only 85 and 76% respectively of Rosedale following cropping, and in the third year produced plant densities of 46% (Daliak) and 35% (Nungarin) of the density of Rosedale.

Winter growth of Rosedale was generally scored lower than Clare, but spring growth scores were similar over the six sites. At Turretfield Research Centre, near Rosedale, South Australia (450mm annual rainfall), dry matter production of Rosedale over a two-year period was 95% of that of Clare and similar to Seaton Park. Simlar relative dry matter yields were obtained from Rosedale and Clare over a three year period in northern New South Wales (Archer 1988).

At six sites in South Australia, seed yields of Rosedale in the establishment year averaged 250kg/ha, which was 21% higher than Clare. At Turretfield after two pasture years, seed reserves of Rosedale were 850kg/ha, some 70% higher than those of Clare.

Rosedale flowers 9 days earlier than Clare at Turretfield.

Rosedale has more hardseeds at harvest than Clare (83% compared with 62% in one test in Western Australia), and a slower rate of hardseed breakdown (W.J. Collins and J.S. Gladstones, pers. comm.). After three months in an alternating temperature cabinet (15/60°C), 64% of the initial hardseed in Rosedale was still hard, comapred to 19% in Clare. Archer (1988) also found that Rosedale had an average of about 60% more residual hard seeds than Clare, in the year after establishment, in trials in northern New South Wales.

Rosedale has good resistance to clover scorch, *Kabatiella caulivora* (Kirchn) Karak (D.L. Chatel and D.M. Francis, pers. comm.). Limited screening indicated that Rosedale had good resistance to the spotted alfalfa aphid (*Therioaphis trifolii* (Monell) f. *maculata*), but has low resistance to the blue-green aphid (*Acyrthosiphon kondoi*

Shinji) and cowpea aphid (*Aphis craccivora* Koch) (A.H.W. Lake and J. Howie, pers comm.). Rosedale nodulates satisfactorily with WU 95 strain of *Rhizobium* (J. Brockwell, pers. comm.) and is low in formononetin.

Rosedale is a supplementary cultivar to Clare on neutral to slightly alkaline red brown earth soils in areas receiving 400-500mm annual rainfall. The earlier maturity of Rosedale allows greater persistence than Clare in the 400-500mm rainfall areas. It is seen as a replacement for Clare in all cropping areas where Clare is the traditional pasture legume, as its higher hardseededness provides greater persistence than Clare throughout cropping years.

Acknowledgments

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Reference

Archer, K.A. (1988). Subterranean clovers for northern New South Wales 2. Potential of *Trifolium subterraneum* var. *brachycalycinum*. Proceedings National Subterranean Clover Workshop, Wagga Wagga, N.S.W. (Eds. B.S. Dear and W.J. Collins.) p. 112. (Australian Wool Corporation/Western Australian Department of Agriculture/New South Wales Department of Agriculture: Wagga Wagga, N.S.W.)