

Rosedale - a new brachycalycinum subclover

M.L. Stanley, G.J. Mitchell and M.J. Cooper

S.A. Department of Agriculture G.P.O. Box 1671, Adelaide, S.A. 5001

Annual pasture legumes often do not persist well on the red-brown earths (RBE) in the northern agricultural areas of S.A. This is attributed to:

- the hardsetting nature of these soils which prevents effective burr burial and seedset of many subclovers,
- the wide variation in soil pH, even within paddocks within the range 5.5 to 8.7 (in water), and
- the practice of intermittent cereal cropping over much of this area which depletes soil seed reserves of soft-seeded pasture legumes.

An evaluation programme was set up by Dr. P. Beale to select a suitable sub clover from n to hard-setting soils burying burrs in cracks or under surface debris (1). They also tolerate variation in soil pH within the range mentioned. Clare, previously the only n well on these soils but is too soft-seeded to persist through cropping years. Its maturity also limits it to areas averaging at least 450 mm rainfall per annum.

Methods

Brachycalycinum lines were screened for growth and persistence through cropping in six field trials. Trials involved plots 1.5 m x 1.5 m with four replicates. They were subjected to a pasture-crop-pasture rotation, and persistence was measured as clover plant density in the third year.

The maturity of lines was measured as days to flower and was collected from trials in S.A., W.A. and N.S.W. (2,3). In separate tests seed of experimental lines were tested for hard-seededness three months after maturity.

Results and discussion

Cv. Rosedale (previously CPI:70124B) was selected on the basis of higher hard-seededness and earlier maturity relative to Clare. These two features should allow Rosedale to be a more persistent pasture legume on RBE soils where intermittent cropping is practiced. In the field trial at Turretfield seed production of Rosedale and Clare was comparable, but Rosedale regenerated significantly better after cropping (Table 1).

Table 1 Days to flower, hard-seededness and persistence data for Rosedale and Clare

Cultivar	Rosedale	Clare	LSD (5%)
Days to flower (mean of six trials)	111	124	-
Hard-seededness (%) three months after maturity	78	48	6
Plant density (no./m ²) after cropping			
(Turretfield site)	173	57	98
(Mean of all sites)	59	36	-

1. Katznelson J. 1970. Proc. IXth Int. Grass Congress, 192-196.

2. Archer K.A. 1987. Proc. Nat. Sub Clover Workshop, 112-115.

3. Bolland M.D.A. 1987. Aust. J. Exp. Ag., 27, 539-544.