

## A survey of seed reserves of subterranean clover pastures on southern tablelands of New South Wales

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Although subterranean clover has been grown on the Southern Tablelands of N.S.W. for over 50 years, there are no figures available on the size of seed reserves in pastures. Following the drought from 1979 to 1983, there was concern that subterranean clover seed reserves had declined to levels from which they could not recover. A survey similar to that used by Carter (1) in South Australia was therefore undertaken to measure the seed reserves of pastures selected by district agronomists in the Cooma, Braidwood and Goulburn areas as representative of the "better" pastures in their districts. These pastures would set the upper limit to seed reserves that could be expected in the region. For comparison purposes, several grazed trial plots of subterranean clover were also measured.

### Methods

Twenty six pasture sites and seven trial areas were selected. Three strips of soil, 2 m long x 12 cm wide x 5 cm deep were removed in January 1983 from a representative area of each paddock or trial site. The number of seedlings were counted in autumn.

### Results and Discussion

**Table 1: The results of the paddock survey.**

Seed Reserve (Jan '83) kg/ha	Status	Seedlings March '83 plants/m <sup>2</sup>	Mean Seed Wt. mg	Mean Pasture Age Years	Number of sites	%
0-5	very poor	15	56	24.5	4	15
6-10	poor	331	64	20.0	3	12
11-50	fair	957	53	30.7	7	27
51-100	good	1107	59	25.0	5	19
101-300	very good	1483	63	21.5	6	23
>300	excellent	2122	83	11.0	1	4

**Table 2: Seed reserves, seedling density and seed size at the trial sites.**

Cultivar	Seed Reserve (Jan. 83) kg/ha	Seedlings (March 83) plants/m <sup>2</sup>	Mean Seed Wt. mg
Daliak	526	2611	73
Seaton Park	291	2791	66
Woogenellup	135	1152	79
Mount Barker	107	867	64

Seed reserves measured by the sampling technique were found to be a reliable estimate of seedlings germinating in autumn ( $r = .78$ ). Our survey indicated that 54% of the "better" pastures in the region had seed reserves of less than 50 kg/ha and could be expected to have less than 1000 plants/m<sup>2</sup> present in autumn. The seed reserves of "average" pastures could be expected to be much lower. Comparing the survey findings with the trial site data suggests that seed reserves and plant density in autumn could be improved by sowing cultivars with a higher hard seed content.

1. Carter, E.D. 1982. Proc. 2nd. Aust. Agron. Conf., Wagga Wagga, p 180.

