

## The sub clover status of permanent pastures in the lower rainfall areas of Tasmania

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A survey of pastures ranging in age from five to twenty five years was conducted to assess the adequacy of sub clover seed reserves. The results should give an indication of the need to resow pastures and help develop strategies to introduce better cultivars into "old" pastures containing mainly Mt. Barker.

### Methods

Thirty-five paddocks were selected to represent the sub clover growing areas of Tasmania. Sixteen sites were sampled successively in 1986, 1987 and 1988. Total seed reserves of sub clover were determined by taking twelve 10 cm diameter soil cores to a depth of 5 cm along a 60 m transect in each paddock. Seedling counts were taken the following May along the same transects.

### Results and discussion

The average seed bank was 275 kg/ha, of which 15% germinated the following autumn. This represents about 500 seedlings/m<sup>2</sup>, an adequate number for our clover/perennial grass pastures.

Seedling numbers, as a percentage of the total seed bank, ranged from 7% in 1987 to 19% in 1988. Although good correlation between seed reserves and regeneration has been found elsewhere (1, 2), for Tasmanian conditions this relationship only exists within, but not between, districts and seasons. Based on the lowest percentage of seedling emergence, a seed reserve of 300 kg/ha is desirable to guarantee a good sub clover density (Table 1). Only 18% of the pastures surveyed had a poor sub clover population. The main sub clover component of Tasmanian pastures is Mt. Barker, the fact that some pastures were more than 20 years old shows how well adapted and persistent this cultivar is.

**Table 1: The sub clover status of pastures in relation to seedling populations in autumn with their corresponding seed banks in summer for 3 seasons**

| Status    | No. sites | 1986 Seeds         |       | No. sites | 1987 Seeds         |       | No. sites | 1988 Seeds         |       |
|-----------|-----------|--------------------|-------|-----------|--------------------|-------|-----------|--------------------|-------|
|           |           | sdl/m <sup>2</sup> | kg/ha |           | sdl/m <sup>2</sup> | kg/ha |           | sdl/m <sup>2</sup> | kg/ha |
| Poor      | 3         | 127                | 87    | 3         | 39                 | 194   | 3         | 49                 | 141   |
| Good      | 9         | 346                | 152   | 6         | 262                | 344   | 3         | 414                | 201   |
| Excellent | 4         | 591                | 228   | 7         | 824                | 485   | 14        | 908                | 335   |

Carter, E.D., and Cockrane, M.J. (1985). proc. 3rd Aust. Agr. Conf., 217.

Dear, B.S. and Loveland, B. (1985). Proc. 3rd Aust. Agr. Conf., 214.