

Subterranean clover seed yields of pastures in the Hamilton district

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Measuring the subterranean clover seed yield in farm paddocks has played little part in the investigation of the subterranean clover decline problem in South Eastern Australia despite its clear significance in the survival and productivity of subterranean clover (1). This paper reports seed yields measured on 27 paddocks within 80km of Hamilton (av. ann. rainfall 660mm).

Method

Yields were measured in March-April 1986, before the seasonal break, in 21 paddocks where Mt. Barker was the main cultivar. The paddocks were considered to be 'average' clover paddocks by the farmers and had not been cut for hay in 1985. Six paddocks in which Yarloop was the main cultivar were sampled. These paddocks are notable for their consistently higher clover content and carrying capacity than Mt. Barker predominant pastures. The farms surveyed were selected non-randomly. They were all known to the author.

Three soil cores (8 cm diameter) to 5 cm depth were collected from 50 locations in each paddock. Cores were sampled at each end and in the centre of a 75 cm long peg which was thrown 5-10 m ahead of the sampler. Other work (Schroder unpubl.) found that this sampling intensity estimated a seed yield of 300 kg/ha to within +63 kg/ha.

Seed was removed from the samples by hand rubbing the soil through a stainless steel mesh with a nominal aperture of 0.56 mm (no clover seed passes through this sized opening). The samples were then washed in Geneklene N industrial solvent (density 1.35 kg/l) to remove gravel and then thrashed.

Results and Discussion

Seed yields from the Mt. Barker paddocks ranged from 167 to 666 kg/ha and averaged 447 kg/ha. Only one paddock was below 200 kg/ha, the minimum considered necessary for the satisfactory growth and survival of subterranean clover (3). On almost half the paddocks seed yields were above 500 kg/ha.

The Yarloop paddocks averaged 1071 kg seed/ha and ranged from 187 to 1918 kg/ha. The amount of black subterranean clover seed in the samples averaged 209 kg/ha (range 32-345 kg/ha).

In view of the seed levels measured, poor subterranean clover growth in 1986 was unlikely to be due to low seed levels on 25 of the 27 paddocks sampled.

Clover growth was generally very good in spring 1985 and so the seed yields measured may be higher than in normal seasons. For example, in 1984 and 1985, seed yields from 13 experimental and demonstration areas in the Hamilton district averaged 150 kg/ha (range 41-470 kg/ha) and likewise reported yields for paddocks on the Southern Tablelands of N.S.W. (2) and dairy pastures in the Adelaide Hills (3) are less. The higher seed yields on the Yarloop paddocks, compared with Mt. Barker, was expected (4).

1. Carter, E.D., Wolfe, E.C. & Francis, C.M. 1982 Proc 2nd Aust Agron Conf., Wagga Wagga. 68-82.
2. Dear, B.S., & Loveland, B. 1985 Proc 3rd Aust Agron Conf, Hobart. 214
3. Carter, E.D., & Cochrane, M.J. 1985 Proc 3rd Aust Agron Conf, Hobart. 217
4. Rossiter, R.C. 1966 Aust. J. Agric. Res. 17: 425-46.

