

## Importance of sampling time in assessing Germinability of burr medic

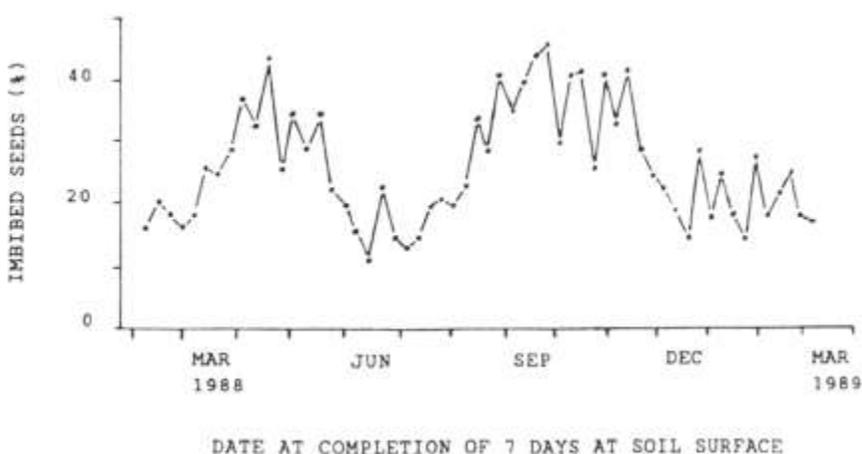
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Laboratory measurement of the numbers of germinable burr medic (*Medicago polymorpha*) seeds sampled in autumn can, in my experience, seriously under-estimate potential plant densities in regenerating pastures. It appears that a significant proportion of burr medic seeds can soften rapidly during late autumn, presumably under the influence of specific environmental conditions experienced after the heat of summer. The year-round incidence of conditions conducive to this rapid softening phase has been investigated.

### Methods

Burrs of cv. Serena grown at Merredin in 1986 were collected on 25 March, 1987. Seeds were removed from the burrs by hand and stored in a laboratory cupboard. On 9 February, 1988 a paper packet containing 100 seeds was placed under a flywire strip on the bare soil surface at Perth. A week later the seeds were returned to the laboratory for testing and replaced with fresh seeds. This treatment sequence was continued for 56 weeks. The treated seeds were soaked on moist paper for 14 days at 20°C.



### Results and Discussion

The proportion of seeds which imbibed showed marked seasonality with high proportions (>40%) in late autumn and throughout spring, and low proportions (down to 11%) in winter and summer. Under these conditions field sampling before late April would have resulted in substantial underestimates of potentially germinable seeds. In the normal course of seasonal events most of the potential soft seeds would become permeable in late autumn and germinate at the break of season, making germination in spring unlikely, though not impossible in the event of abnormal conditions at the break of season.

The available evidence suggests that the seed softening process in burr medic is analogous with the two-stage process which has been described for subterranean clover (1), but with a more restricted range of environmental conditions needed to produce the final stage of softening. Laboratory studies are under way to define the environmental conditions necessary for this final softening process.

I. Taylor, G.B. (1981), *Aust. J. Plant Physiol.* 8, 547-558.