Register of Australian Herbage Plant Cultivars

B. Legumes
1. Clover
Trifolium subterraneum ssp. *subterraneum* (Katzn. *et* Morley) Zohary and Heller (sub clover) cv. Enfield

Reg. No. B-1d-21
Registered October 1982

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Origin

This sub clover was one of a collection made in 1973 by members of the Faculty of Agriculture and Forestry, University of Melbourne, under the direction of Mr. G.M. Halloran. It was collected from the roadside near Kilmore on the Kilmore-Bendigo road. Seed was obtained by the Victorian Department of Agriculture in 1975 when the program to replace Woogenellup with subclovers resistant to clover scorch, caused by the fungus *Kabatiella caulivora* (Kirchn) Karak, was commenced. Subsequent testing showed this line to have good tolerance to clover scorch and to produce a high yield of herbage when grown at several locations.

Submitted for registration by the Victorian Department of Agriculture, which will maintain breeders' seed. Registered October 1982.

Morphological description

Enfield is prostrate in habit with fine, hairy stems which are reddish brown when exposed to sunlight. The petioles are relatively short, hairy and reddish brown when exposed. The leaves are dark green and moderately hairy with more hairs on the lower surface than on the upper. The first leaves have a light green crescent and if conditions are cold the rest of the leaf, above and below the crescent, can be heavily pigmented with anthocyanin. As the plant develops to the rosette stage, the colour fades leaving a few purple flecks and the light green, arrow-head shaped crescent, which usually does not extend to the edge of the leaflet. The stipules are highly pigmented if exposed but in a dense sward only the veins are red. The calyx tube is green but the lobes have some anthocyanin. The flowers are white with purple veins in the standard. In a sward the flowers develop close to the ground and are therefor much less visible from above than in other varieties. The seeds are purple-black and small.

Agronomic characters (1,2,3)

Enfield flowers at about the same time as Woogenellup but matures a little earlier. It forms a great number of burrs per unit area and a greater number of seeds per burr than Woogenellup does. This results in a large number of small seeds. On average the seeds are about two thirds the weight of those of Woogenellup and the number of seeds per unit area can be almost twice that of Woogenellup. Most of the seed is formed above ground. In one measurement on a hard setting soil only 7% was buried – the same as for Woogenellup and Trikkala.

Enfield sets more soft seed than Woogenellup and the seed germinates readily with early autumn rains to give a very dense stand of seedlings. The subsequent sward is highly productive in the autumn-winter period, but its spring growth is sometimes more, sometimes less than Woogenellup. It has been tested in small swards at 10 sites in Victoria and grows well in a range of environments from clay-loam soils with 450mm rainfall and deep sands with 900mm.

It is more tolerant to clover scorch than Woogenellup but is slightly less tolerant than Daliak and Esperance. It shows symptoms of the disease but there are fewer lesions per petiole than with Woogenellup and the sward suffers less damage. It is expected that Enfield will be grown in those areas where Woogenellup suffers severe damage from clover scorch.

In glasshouse tests it is tolerant to the spotted alfalfa aphid, semi-tolerant to the blue-green and very susceptible to the pea aphid (2).

Enfield grown at Werribee, Victoria, contained a low level of formononetin in its herbage (0.06 – 0.16% of dry weight), about the same as Bacchus Marsh,but in 5 tests in herbage grown at Shenton Park, W.A. from 1977 to 1981, Enfield averaged 0.18% formononetin (range 0.07 – 0.31%), whereas Bacchus Marh averaged 0.03% (range 0.01 – 0.06%) (3).

References

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2. Matheson, M.J., and Lake, A. (1982). Personal communication. S.A. Dep. Agric., Northfield.
3. Collins, W.J. (1982). Personal communication. Univ. W.A., Nedlands.