

Register of Australian Herbage Plant Cultivars

B. Legumes

1. Clover

Trifolium subterraneum ssp. *subterraneum* (Katzn. et Morley) Zohary and Heller (sub clover) cv. Esperance

Reg. No. B-1d-19

Registered February 1978

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Origin

Esperance was selected for resistance to clover scorch disease, *Kabatiella caulivora*, by Dr C.M. Francis and Dr D.L. Chatel of the Western Australian Department of Agriculture from segregating F3 lines of a Bacchus Marsh x Daliak cross. These lines came from the collection established as part of the joint subterranean clover breeding program being conducted by the Department of Agriculture and the Institute of Agriculture, University of Western Australia.

Submitted for registration by the Department of Agriculture, South Perth, Western Australia, and recommended for registration by the Western Australian Herbage Plant Liaison Committee. Breeders' seed is being maintained by the Western Australian Department of Agriculture. Registered, February 1978.

Morphological description

In general, the growth form of Esperance resembles Daliak more closely than Bacchus Marsh. It is prostrate with medium-short pubescent petioles and internodes. The leaflets are pubescent on both surfaces and normally have no crescent, although at some stages of growth, particularly during the early winter, a pale green central spot may be apparent. Occasionally leaves with 4-5 leaflets occur. Anthocyanin flecking may occur on both leaf surfaces, but is less conspicuous than in Daliak. Stipules are broad with pink flush and veins red pigmented rather than purple-red as in Daliak. The calyx tube has a distinct red pigmentation on the upper three quarters. The corolla is white with pink venation and the seeds are ovoid and black. There are 130,000 seeds per kg.

Agronomic characters (1,2,3,4,5)

Esperance has shown a marked degree of resistance to clover scorch in a series of glasshouse and field tests and appears to derive its resistance from the Daliak parent (1,2). Being prostrate with relatively short, fine petioles, it produces a dense sward like Daliak, but is normally somewhat higher. Near Perth from a late April germination it flowers after about 127 days, at least three weeks after Daliak. Flowering at Denmark, near Albany on the south coast, from a similar germination date was four weeks later and close to that of Dinninup and 25 days after Daliak. A slightly slower rate of seed maturation causes Esperance to mature its seed about one month later than Daliak under similar conditions of adequate moisture. In general terms it will require a minimum of a 5.5 month growing season, and under Western Australian conditions a rainfall between 500 mm and 700 mm. It is an alternative to scorch resistant cultivars Seaton Park, Dinninup, and Woogenellup.

It has high seed yielding characteristics. In trials at Denmark Esperance has greatly exceeded both Woogenellup and Seaton Park in seed production under conditions of mild clover scorch infection (means of two years - Esperance 646 kg/ha, Woogenellup 297 kg/ha, Seaton Park 148 kg/ha) (3).

Dry matter production in the same experiments equalled Woogenellup and exceeded Seaton Park. It has similar hard seed characteristics to Daliak.

Formononetin in Esperance ranges from 0.45 per cent of the dry weight in the winter, to 0.22 or less in the spring. Such levels are similar to values found in Daliak and Woogenellup. At these levels any effects on sheep fertility will be very slight.

Information on rhizobial requirements is limited. Nodulation and growth on a new land site with strains WU95 and CC2480a was good. TA1 was slightly inferior (4).

It appears to have better tolerance to root rot (*Pythium* spp.) than cultivars Seaton Park, Woogenellup and Mt. Barker (5).

References

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2. Chatel, D.L., and Francis, C.M. (1974). The reaction of varieties of subterranean clover to the clover scorch disease (*Kabatiella caulivora*) at three sites in Western Australia. W.A. Dep. Agric. Tech. Bull. No. 25.
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4. Chatel, D.L., personal communication.
5. Gillespie, D.J. (1977). Plant Research Division, Report, W.A. Dep. Agric.