

# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 1. Clover

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

Reg. No. B-1d-25

Registered April 1985

*Published in the Journal of the Australian Institute of Agricultural Science 51(4):298-300, 1985.*

### Origin

Green Range originated as an F4-derived selection from the cross Midland B/Nangeela/Guildford D, made in 1974 at the University of Western Australia Field Station, Shenton Park, as part of the National Subterranean Clover Improvement Programme (6,14). The Midland B/Nangeela parent was one of a series of crossbreds developed at the University of Western Australia from a cross made in 1969. It was field tested under the code name GD 17.30.4.5. The Midland B/Nangeela parent was MN 17.1, one of a series of crossbreds developed at the University of Western Australia from a cross made in 1969. Breeding was by C.M. Francis and J.S. Gladstones, with field and glasshouse screening for disease and insect resistance by D.L. Chatel and D.J. Gillespie, all of the Western Australian Department of Agriculture. Field testing was by D.A. Nicholas (Western Australian Department of Agriculture), E.C. Wolfe and B.S. Dear (New South Wales Department of Agriculture), K.F.M. Reed (Victorian Department of Agriculture) and P.E. Beale (South Australian Department of Agriculture). Initial pure seed increase was by C.J.B. Sykes (Western Australian Department of Agriculture).

Submitted by the Western Australian Department of Agriculture and the University of Western Australia, and recommended for registration by the Western Australian Herbage Plant Liaison Committee. The Western Australian Department of Agriculture will maintain breeders' seed. Registered, April 1985.

### Morphological description (8)

Green Range has slightly indented leaflets together with prominent leaflet crescent markings inherited from its Nangeela grandparent (1,4). The crescent is angular and comprises a yellow-green central area, rising to a point close to the leaflet margin, with strong white arms on either side descending to the base of the leaflet. In winter or under some other conditions restricting growth, coarse purplish-red flecking is variably prominent, especially just above and below the crescent, together occasionally with purplish-brown pigmentation outlining the crescent or forming a partial bar along the midrib below the crescent. The stipules have strong, bright purplish-red pigmentation over much of their surface, especially towards the base of runners. Leaflet upper surfaces sparsely to moderately hairy. Petioles and stems sparsely to moderately hairy, peduncles moderately hairy; all with weak to moderate purplish-brown pigmentation where exposed to the sun. Growth vigorous, prostrate early in spaced plants, but erect post flowering. Calyx green apart from occasional light purplish-brown pigmentation of the teeth. Corolla white with fine pink veins. Seeds medium sized, about 130,000 per kg., black. Seedlings semi-erect, unifoliate leaf hairy, with a small inconstant pale crescent spot in the centre. Green Range is very similar to cv. Karridale (2), but differs in the following visible characters when grown at Perth under the same conditions: 1. Flowering 6-9 days earlier; 2. Leaflets are less rounded and more indented, and the crescent more angular, with the central spot rising to a sharper point closer to the leaflet margin; 3. The stipules are a little more strongly pigmented; 4. The leaflet upper surfaces are more strongly and constantly hairy; 5. Growth of spaced plants is often a little more prostrate.

Seed isozyme patterns differ between Green Range and all other previously registered cultivars (3,5), including cvv. Nangeela and Karridale, which are morphologically similar to it.

### Agronomic characters (11,15)

Green Range flowers and matures in early mid season, at about the same time as cv. Woogenellup (c. 128 days at Perth with early May sowing). Formononetin content is very low, less than 0.1%. Hardseededness in Western Australia has been moderately high, equal to or a little higher than that of cvv. Seaton Park and Esperance and clearly higher than that of cv. Woogenellup (11); in New South Wales tests it has only been similar to that of cv. Woogenellup (15). Burr burial approximates that of cv. Woogenellup (11,15).

Green Range has a very good resistance to clover scorch *Kabatiella caulivora* (Kirch.) Karak (7,11). Among subterranean clovers it has a reasonable tolerance to blue-green aphids (*Acyrtosiphon kondoi* Shinji) (7) and possibly resistance to or escape from subterranean clover mosaic virus (10); but it is highly susceptible to rust, *Uromyces trifolii-repentis* (Hedw. f.) Lev (11,12). Tolerance to the predominant clover root rot organisms in Western Australia, *Pythium*, *Rhizoctonia* and *Fusarium*, is intermediate; inferior to that of cvv. Daliak, Dinninup and Junee, slightly inferior to that of cv. Karridale, but substantially better than that of cvv. Woogenellup and Mt. Barker (7). Nodulation in field trials has been regularly satisfactory. Controlled tests of nitrogen fixation (13) have shown that Green Range is compatible with present commercial strains of *Rhizobium*. Green Range is moderately robust and showy in its growth, and in Western Australian trials (10) has shown good winter and spring production and good persistence. It should be a suitable scorch resistant replacement for cv. Woogenellup over much of that cultivar's range in Western Australia, excepting perhaps the wetter fringe and coastal areas where cv. Karridale may be better suited.

## References

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