

# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 1. Clover

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

Reg. No. B-1d-23

Registered April 1985

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### Origin

Junee originated as an F4-derived selection from the cross Howard/Midland B/Daliak, made in 1973 at the University of Western Australia Field Station, Shenton Park, as part of the National Subterranean Clover Improvement Programme (6,15). It was field tested under the code name DA20.19.2.1. The Howard/Midland B parent was H20, selected by CSIRO Division of Plant Industry, Canberra, for resistance to clover stunt virus, from among a series of crossbreds developed by the University of Western Australia from a cross made in 1967 (13). Breeding was by J.S. Gladstones and C.M. Francis, 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 (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 Departments of Agriculture of New South Wales and Western Australia and the University of Western Australia, and recommended for registration by the New South Wales and Western Australian Herbage Plant Liaison Committees. The Western Australian Department of Agriculture will maintain breeders' seed. Registered April, 1985.

### Morphological description (8,16)

Junee has a broad triangular, moderately indented leaflet and leaflet crescent marking similar to that of cv. Tallarook (1, p.126;3), derived from that cultivar via cv. Howard (1, p.131;3). The crescent has only slight curvature, and in early leaves consists of a small central light green area with variable and sometimes faint whitish arms at either side. Late in the growing season, often only the white arms are visible. In winter and under certain other conditions conducive to slow growth there is usually some purple-red flecking in the vicinity of the leaf midrib and occasional flecks elsewhere, together with brownish purple flushing mainly of the area below the crescent. Stipule and calyx light green. Corolla white with pinkish-red veins. Leaflet upper surfaces sparsely to moderately appressed-hairy. Petioles and stems sparsely hairy and peduncles more or less hairless. Stems relatively slender, with slight to moderate purplish brown pigmentation where exposed to the sun. Growth prostrate in the early stages, changing to semi-erect post flowering. Seeds small, black, approximately 150,000 per kg. Seedlings prostrate, relatively small and fine; unifoliate leaf moderately hairy with a small central crescent spot and narrow white arms curving down to the leaf lower margin. In reproductive phase Junee can be distinguished from cv. Howard, despite similar leaf and calyx markings, by the lesser hairiness of its leaves, petioles, stems, and especially peduncles, which are nearly glabrous as opposed to the densely hairy peduncles of Howard.

Junee can be distinguished from previously registered cultivars by its seed isozyme patterns (2,4).

### Agronomic characters (5,10,12,16)

Junee flowers in early midseason, about a week earlier than cv. Woogenellup in New South Wales and in the inland and southern districts of Western Australia (12,16). At Perth it flowers at about the same time as Woogenellup (c. 128 days with early May sowing). Seed development and maturation are faster than in Woogenellup and final maturity is a week or more earlier, comparable to that of cv. Esperance. Formononetin content is low about 0.10%. Hardseededness is high for its maturity, approaching that of cv. Dinninup, higher than that of cvv. Green Range, Esperance and Seaton Park, and much higher than that of cvv. Karridale and

Woogenellup (9,11,16). Burr burial in New South Wales has been rated as superior to that of Woogenellup and similar to that of Seaton Park (5,10); and in Western Australia, as intermediate between the two (12).

Junee has good resistance to clover scorch (*Kabatiella caulivora* (Kirchn.) Karak (7,12). In Western Australian field tests over four years it has been consistently as tolerant to the *Pythium*, *Rhizoctonia* and *Fusarium* root rot complex as the present most tolerant cultivars, Daliak and Dinninup (8). Junee is not tolerant to root rot where the predominant pathogen is *Phytophthora* (16). In some experimental plots Junee has been observed to be very susceptible to powdery mildew (*Erysiphe polygoni* DC) (12,16). However, the observations to date have not suggested that this will be a significant practical problem in the areas for which it is likely to be recommended. Junee is moderately susceptible to blue-green aphids (*Acyrtosiphon kondoi* Shinji).

Junee is not conspicuously vigorous or productive in the first year, but autumn/winter production relative to other cultivars is high in later years because of the high seedling density that results from the accumulation of a good seed bank in the soil (12,16). This has been especially so under conditions of intermittent failure of seed production, due to drought or other factors (16). Nodulation has been regularly satisfactory in field trials. Junee is compatible with present strains of *Rhizobium* (14). Junee is suited to areas where Woogenellup and Esperance are grown. It is expected to be more persistent than Woogenellup and possibly Green Range, especially where summer rainfall is substantial and rainfall variability is high, or where cropping is relatively frequent. Because of high hardseededness for its maturity, it may be able to extend into some areas of shorter or less reliable growing season where cv. Seaton Park is now grown.

## References

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