

# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 1. Clover

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

Reg. No. B-1d-18

Registered prior to November 1976

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#### Origin

An early maturing cultivar derived from a cross between two early flowering varieties, viz Daglish and Northam A2 originally collected in the vicinity of Perth and Northam respectively (3).

Nungarin was selected on the basis of maturity, seed dormancy (hardseededness), isoflavone content, burr burial characteristics and seed yield by Drs C.M. Francis, J.S. Gladstones and B.J. Quinlivan as part of a program for subterranean clover improvement conducted jointly by the Institute of Agriculture, University of Western Australia and the Western Australian Department of Agriculture. Submitted for registration by the Western Australian Department of Agriculture and the University Institute of Agriculture. Recommended for registration by the Western Australian Herbage Plant Liaison Committee.

Breeders seed is being maintained by the Department of Agriculture, Perth, W.A. Registered, November 1976.

#### Morphological description

Prostrate in growth habit, it otherwise fairly closely resembles its Northam A2 parent in many of its characteristics (3). Stems are hairy and red-brown pigmented particularly when exposed to sunlight. Petioles sparsely hairy, usually longer than Geraldton, equal or shorter than Northam A. Leaflets green, less hairy than Northam A or Geraldton in preflowering stages, but becoming hairy as plants mature. A pale green crescent in the form of a band extends across the leaflets from margin to margin. This band is distinctly broader than that of either Northam A or Geraldton. Stipules green with red veins. Calyx, basal quarter green, upper three quarters and lobes red. Seeds black, size varies with location, in dry conditions at Merredin (300 mm) 160,000 per kg, to 108,000 per kg in wet conditions at Perth (800 mm). Depending on conditions, the seeds are from 17-50% larger than Geraldton.

#### Agronomic characters

A low oestrogen cultivar (formononetin 0.06-0.12% of dry weight) it has been developed and evaluated specifically for low rainfall conditions of 250-300 mm. At three locations over five seasons in the eastern and north-eastern wheatbelt of Western Australia, it has flowered an average of 13 days earlier than Geraldton and as such it is the earliest flowering of the cultivars registered to date.

Its rate of burr and seed development appears intermediate between those of cultivars like Geraldton which mature burrs and seeds rapidly and cultivars like Northam A which are relatively slow (4). Its burr burial characteristics are similar to those of Geraldton and Dwalganup.

Its autumn residual hard (impermeable) seed level, evaluated by standard laboratory techniques and field samples from wheatbelt seed yield trials has been double that of Geraldton (42% as compared to 20%). In five of seven field experiments it has exceeded the seed yield of Geraldton by 70% and has given an average yield of 315 kg per ha. The yield advantage over Northam A at the same sites was 94% (2).

Herbage yields were not a specific basis for selection during the program, but have been at least the equal of Geraldton under sward conditions.

## References

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4. Quinlivan, B.J. (Unpublished data.)
5. Quinlivan, B.J. (1968). Seed coat impermeability in common annual legume pasture species of Western Australia. *Aust. J. Exp. Agric. Anim. Husb.* **8**, 695.