

Register of Australian Herbage Plant Cultivars

B. Legumes

9. Annual Medics

a. *Medicago truncatula* Gaertn. var. *truncatula* (barrel medic)

cv. Hannaford

Reg. No. B-9a-1

Registered prior to December 1971

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Origin

The circumstances of the introduction of the species into Australia are unknown but it had become naturalised in areas in South Australia, Victoria, and New South Wales before 1920 (1). In small plot trials at the Waite Agriculture Research Institute, Adelaide, in 1937, it performed better than any other medic (14). Seed for larger field trials was collected by Mr. Alf. Hannaford, who, in conjunction with Dr. H.C. Trumble, selected an area on the property of Mr. J. Robinson of Noarlunga, for this purpose because the ecotypes developed there had short-spined pods (9, 14). Portion of these seed was sown at Pallamana, where it yielded well in a trial conducted by the Department of Agriculture in 1938 (14). The remainder was distributed commercially to farmers. A good deal of selection by Alf. Hannaford & Co. Ltd., for types with short-spined pods accompanied the early commercial harvests and distribution of seed (9).

This line was known as South Australian barrel medic until renamed Hannaford barrel medic in 1966 by the South Australian Herbage Plant Liaison Committee.

Morphological description (3, 10, 15, *et al.*)

A semi-prostrate annual normally 15-30 cm high. Spaced plants produce numerous primary, secondary, and tertiary runners covering an area of up to 1 sq m in diameter under favourable conditions.

Leaflets 8-20 mm long, cuneate to obovate, truncate, margins serrate towards distal end, hairy on both upper and lower surfaces; leaflet marking, none or a few purple flecks that disappear during spring. Stipules green, hairy on lower surface, and deeply serrated. Flowers; spaced plants established during April at Canberra flower at fourth and sixth node during August/September (3). Mostly two florets per raceme but towards end of flowering season racemes may have three to four florets; calyx teeth slender, exceeding tube in length, green to purple-green; corolla yellow and sometimes marked with purple lines, less than twice as long as calyx. Pods cylindrical or barrel-shaped consisting of mainly clockwise but some anti-clockwise spirals of 4-6 strongly adpressed coils hardening at maturity and containing 8-10 seeds; they bear short, almost straight unhooked spines, and at maturity change colour from green to grey and then to black at which stage they drop off the plant. Seeds creamy white, subreniform, flat, from 2 to 3.5 mm long and approximately 320 000/kg. Chromosome number $2n = 16$ (1).

Differs from unselected *Medicago truncatula* var. *truncatula* mainly in predominance of short unhooked spines on pods; other characters such as time of flowering, leaf and stem pigmentation, etc., vary as in the species (3).

Agronomic characters (2, 12-14)

Adapted to a Mediterranean-type climate with a 250-500 mm rainfall of predominantly winter incidence. Seeds germinate with the autumn rains and a dense sward is developed during winter and early spring. Some three months or more are taken from germination to the commencement of flowering which occurs in late August to early September, some 7-10 days after cv. Dwalganup sub clover.

It is best suited to medium to light alkaline soils with a high lime content and of medium to high fertility (6). On hard-setting light-textured soils emergence is sometimes poor, and when the soil is moderately acid seedlings are susceptible to attack by damping-off fungi (11). It is unsuitable for heavy-textured and waterlogged soils but is moderately tolerant of high salinity (8).

It requires inoculation with specific strains of *Rhizobium*, as native bacteria are not generally effective (4) except in South Australia (12). It nodulates satisfactorily with *Rhizobium* strains U45 and SU47 which are contained in Australian commercial inoculant 'A'.

It is self-fertile but some out-crossing may occur. A high proportion of seeds are impermeable or hard at maturity and they soften over a period of some years. Good regeneration is dependent on frequent cultivation, as in short rotation.

It provides good herbage and a large amount of edible pods which will sustain sheep over dry periods. Pods do not adhere to wool and are thus not a troublesome contaminant in the fleeces. A substantial coumestan (especially methoxy-coumestrol) content has been shown to occur under certain conditions in the pods of Hannaford and other annual medics (7): this indicates the need for observation for possible deleterious effects in ewe performance especially on dry medic pastures.

The Sitona weevil (*Sitona humeralis*) has become widespread in South Australia and has caused substantial damage to this cultivar and also to other annual medic varieties (5). Hannaford is somewhat susceptible to attack by red-legged earth mites and lucerne fleas (4).

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