

# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 9. Annual Medics

#### a. *Medicago rugosa* Desr. (gama medic)

#### cv. Paragosa

Reg. No. B-9c-1

Registered prior to December 1971

*Published in the 2<sup>nd</sup> ed. of the Register of Australian Herbage Plant Cultivars, 1972.*

#### Origin

Derived from an introduction (C.P.I 7791) made by CSIRO in 1939, from the Institute of Agronomy, Lisbon, Portugal. The introduction material was mass selected through several generations (4) and distributed to various organizations for further trial. The Department of agriculture of South Australia received some of this material in 1951 as *Medicago rugosa* (4) and developed the cultivar Paragosa from it. It was released by the Herbage Plant Liaison Committee of South Australia in 1966 and certified by the Department of Agriculture of South Australian in 1967. The Herbage Plant Liaison Committee of South Australia gave the name 'gama medic' to the species.

#### Morphological description (1, 3)

An ascending or procumbent, freely branching, self-pollinating annual. The leaflets are obovate, 1-1.5 cm long, 0.75-1 cm wide, terminating in a small tooth; glabrous on upper surface with small glandular hairs on lower surface; upper third of leaflet usually serrated, sometimes deeply serrated. Stipule markedly toothed and open. Peduncle with 2-5 flowers, shorter than the subtending petiole. Flowers yellow, small. Pod flat, disc-shaped, 7-10 mm in diameter with conspicuous radiating veins, spineless with anti-clockwise whorls, usually two-seeded, rarely three or four. Seed dark yellow, curved to almost hooked, one per coil, approximately 160 00/kg. The sides of the seed are rounded compared with the relatively flat sides of *Medicago truncatula*. Chromosome number  $2n = 32$ .

#### Agronomic characters (1, 3, *et al.*)

Paragosa is a highly productive annual legume capable of setting large amounts of seed. A growing season of at least 5 months with a mean annual rainfall of 350 mm is required. It produces most herbage on heavy alkaline soils and its superiority over other annual legume species on the grey and brown soils of heavy texture of the lower northern cereal districts of South Australia has been demonstrated (1).

Flowering occurs earlier than in Hannaford barrel medic, and the bulk of its seed matures before either Hannaford barrel medic or *Medicago scutellata* (L.) Wild. In established pastures the proportion of hard seed which softens during the summer months is greater than in Hannaford barrel medic but less than in Dwalganup, Yarloop, Clare and Bacchus Marsh sub clovers (3). Up to 20% of seed softened by mid February, may germinate with a summer thunderstorm and the seedlings die if no further rain is received (3). There is usually enough hard seed to enable satisfactory regeneration after one year cropping or a seasonal failure to set seed. It produces a greater proportion of seed to pod plus seed (41%) than Hannaford barrel medic (27%). Under grazing it appears no less palatable than Hannaford barrel medic or snail medic (*Medicago scutellata*) (1). Coumestrol content of Paragosa is low (6).

*Medicago rugosa* is more specific in its rhizobial requirements than barrel and strand medics; with strains U45 and SU47 it forms nodules but does not fix nitrogen. *Rhizobium* strains WA16/1, CC131, and W118 are effective (2). A peat culture containing the last strain is commercially available (3).

Early seasonal vigour, high seed-yielding ability, and comparatively high degree of hard seed breakdown all contribute to Paragosa's excellent production and more assured re-establishment than Hannaford barrel medic (3). Pods are easily threshed. Pests reported in South Australia are: *Smynturus viridis* (lucerne flea), *Halotydeus destructor* (red-legged earth mite), *Telogyllus commodus* (cricket), *Etiella behrii* (lucerne pod borer (3)), and *Sitona humeralis* (Sitona weevil (5)).

#### References

1. Banyer, R.J. (1966). Paragosa: a superior medic for heavy black soils. *J. Dep. Agric. S. Aust.* **70**, 35-9.
2. Brockwell, J, and Hely, F.W. (1966). Symbiotic characteristics of *Rhizobium meliloti*; and appraisal of the systematic treatment of nodulation and nitrogen fixation interactions between hosts and rhizobia of diverse origins. *Aust. J. Agric. Res.* **17**, 885-99.
3. Crawford, E.J. (1971). Personal communication. S. Aust. Dep. Agric., Adelaide.
4. Hely, F.W. (1966). Personal communication. CSIRO. Div. Plant. Ind., Canberra.
5. Mathison, M.J. (1971). Personal communication. S. Aust. Dep. Agric., Adelaide.
6. Millington, A.J. (1966). Personal communication. Inst. Agric., Univ. West. Aust., Nedlands.