

Register of Australian Herbage Plant Cultivars

B. Legumes

9. Annual Medics

e. Medicago polymorpha L. (burr medic)

cv. Serena

Reg. No. B-9e-1

Registered November 1976

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Origin

Serena was derived from a cross between two accessions of *Medicago polymorpha*, a spineless-burred parent *M. polymorpha* L. var. *brevispina* (Benth.) Heyn (University of Western Australia Accession No. 5326) obtained from the W.A. Department of Agriculture, originally from Coolgardie, and an early flowering, spiny-burred parent *M. polymorpha* L. var. *polymorpha* collected from La Serena, Chile, by E. Bailey (CSIRO) in 1958 (CPI 25578). The lines were crossed in 1971 by J.A. McComb (University of Western Australia) and the progeny analysed from the F₁ to the F₅ generations.

Selection was carried out for spineless burrs, early flowering, high burr and seed yield, low coumestrol, high winter and spring herbage yield, and ability to continue to grow into early summer if water is available.

Submitted for registration by the Institute of Agriculture, University of Western Australia, and recommended for registration by the Western Australian Herbage Plant Liaison Committee.

Breeder's seed is being maintained by the Institute of Agriculture, University of Western Australia, Nedlands, Western Australia. Registered November 1976.

Morphological description (1, 2, 3)

Annual herb, prostrate or semi-erect up to 20 cm depending on plant density. Stems exposed to the sun may develop a purple anthocyanin flush. Stems petioles and peduncles glabrous or with sparse hairs on peduncle. Leaflets cuneate or obovate, apex spiculate, margin almost entire or with upper half serrate, upper and lower surfaces glabrous. Leaves with very rare purple flecks and rare development of a basal purple mark at the junctions of the petiole and the lamina. Stipules incised and glabrous on both sides. Peduncle usually shorter but sometimes longer than the subtending petiole, 3 flowers, 1-2 fruits per peduncle. Flowers pale yellow, standard about 4 mm long, wings longer than the keel. Fruit coiling is anti-clockwise; the young fruit is contracted and protudes sideways from the calyx; young fruits are sparsely hairy, mature fruits glabrous; spineless with 4-4.5 coils forming a small cylinder or truncated cone. Many (15-20 per coil) radial veins strongly curved, anastomosing into a net and joining a lateral vein which is separated from the wide dorsal suture by a narrow groove. Five seeds per burr, separated by thin partitions. Seeds are yellow-brown with a dull gloss, subreniform to oval, 270 000 seeds/kg.

Agronomic characters

Serena flowers about 70 days after a May planting which is 10 days earlier than Cyprus barrel medic and some 4 weeks earlier than Tornafield disc medic growing under the same conditions. It combines the earliness of the spiny parent with the smooth burrs of the spineless parent. Burrs of Serena have a higher proportion of seed (by weight) than do species such as barrel and disc medics which have thick-walled burrs. The seed yield of Serena was higher than that of Cyprus barrel medic or Harbinger strand medic and comparable to that of Tornafield disc medic in sward trials at Perth.

In an experiment at Perth involving mowings between week 7 and 18 after planting, Serena, Cyprus and Tornafield gave comparable dry matter yields, although less than Harbinger. However, the reduction in burr and seed yield in mown compared with unmown plots was less in Serena than in Cyprus or Harbinger. The later flowering Tornafield was least affected. It produced the most growth and flowers after cessation of mowing.

The coumestrol level of Serena is satisfactory, being intermediate between Harbinger and Cyprus.

References

1. Barnard, C. (1969). Herbage Plant Species. Div. Plant Ind., CSIRO, Misl. Publ.
2. Heyn, C.C. (1963). The annual species of *Medicago*. *Scripta Hierosolymintana* **12**, 1-149. (Hebrew University Press: Jerusalem)
3. Quinlivan, B.J., McComb, J.A., and Devitt, A.C. (1975). Annual medics of Western Australia. W.A. Dep. Agric. Bull. No. 3874.