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LEGUMES

Serradella

Ornithopus compressus L. (yellow serradella)

cv. Tauro

(Reg. No. B-11a-3)

Origin

Collected on June 6, 1968 beside the Autostrada near Gioia Tauro 11 km N of Palmi, Calabria, Italy. Latitude 38°26'N, longitude 15°55'E, altitude 25 m; annual rainfall approximately 900 mm; growing on a deep spillway deposit of coarse, yellow sand, pH approximately 6.0; little or no grazing. Indexed and tested under the code number CPI 47250.

Selected for field testing on the basis of nursery row observations at Perth between 1969 and 1976. Initial field testing, starting in 1979, was by the respective Departments of Agriculture/Primary Industries at Esperance (Western Australia), Toowoomba (Queensland), Coonabarabran (New South Wales), Bairnsdale (Victoria) and Kybybolite (South Australia). It was additionally included in a 1982 distribution of 100 serradella lines for winter testing across southern mainland Australia (Gladstones 1984).

Submitted by the Western Australian Department of Agriculture and recommended for registration by the Western Australian Herbage Plant Liaison Committee. The Western Australian Department of Agriculture will maintain breeders' seed. Registered March, 1986.

Morphological description

Tauro closely resembles cv. Pitman but early growth is usually a little more erect and darker green. Leaves on well-grown plants with up to 17 leaflet pairs, leaflets up to 12 × 7 mm; bracts with 5-7 leaflet pairs; peduncles 30-40 mm, inflorescence with 3-5 florets and pods; pods more or less straight, 30-40 × 3 mm, clearly segmented into up to 10 single-seeded segments. Seeds about 200 000 per kg in hull or 400 000 de-hulled.

Agronomic characters

Tauro is early midseason to midseason in maturity, flowering about 115 days after early or mid-May sowing at Perth, i.e. 12-14 days earlier than Pitman and 10 days

later than Uniserra. At Esperance, Western Australia, it flowers about 7 days earlier than Pitman and 7 days later than Uniserra with mid-May sowing (Bolland 1985); and at Dartmoor, south-western Victoria, about 5 days earlier than Pitman and 8 days later than Uniserra with early May sowing (Clark and Hamilton 1986). Winter growth usually appears more vigorous than that of Pitman.

In a glasshouse microward trial under non-limiting temperatures and moisture conditions (Rossiter, Collins and Klein 1985), herbage yield from cutting at 1.5 cm was greater than that for Pitman during the first 7 weeks from sowing but less than that of *Trifolium subterraneum* cv. Woogenellup; however Pitman had greater residue below 1.5 cm. Together with the field observations this suggests a response to grazing intermediate between those of the very prostrate cultivar Pitman and subterranean clover. Protein content of the cut material, averaged up to 9 weeks, was the same as for Pitman but *in vitro* digestibility of the organic matter was significantly lower (71.3 vs 75.9 per cent; Woogenellup 71.6 per cent).

The pods of Tauro break up fairly readily at maturing and full dryness into single-seeded segments, but less readily than those of cvv. Uniserra and Pitman. As a consequence they remain longer on the plants after maturity.

Hard-seededness as tested following laboratory storage is high, up to 90 per cent of Tauro seeds remaining impermeable after 4 months in controlled-temperature ovens with a diurnal range of 15-60°C, compared with 30 per cent or less for Pitman and Uniserra. Nevertheless field regeneration in the year after sowing has been generally good. There is some evidence (Bolland 1985; Cransberg 1987) that the hard-seededness of Tauro breaks down faster in the field than has been suggested by the laboratory storage data.

As assessed visually over 3 years or more in trials Tauro has performed consistently well across a wide range of southern Australian environments, both in herbage and seed production and with or without grazing or mowing. On the basis of these observations and its earlier maturity compared with Pitman, it is expected to succeed as a self-generating annual pasture legume in areas of southern Australia with non-calcareous sandy soils and an annual rainfall above 400-450 mm, especially in rotations with frequent cropping (Bolland and Gladstones 1986).

Acknowledgements

Tauro was evaluated as part of an interstate collaborative testing scheme for serradellas. The main field trials in Western Australia were conducted by M. D. A. Bolland (Esperance) and L. Cransberg (Albany); in South Australia by A. D. Craig (Kybybolite); in Victoria by S. G. Clarke (Hamilton) and L. J. Hamilton (Bairnsdale); in New South Wales by R. D. Freebairn (Coonabarabran) and T. P. Drew (Trangie); and in Queensland by D. L. Lloyd (Toowoomba).

Initial pure seed production was by T. O. Albertsen and J. S. Gladstones (Western Australian Department of Agriculture).

Collector and principal selector

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