

Register of Australian Herbage Plant Cultivars

B. Legumes

11. Serradella

a. *Ornithopus compressus* L. (yellow serradella)

cv. Elgara

Reg. No. B-11a-7

Registered June 1988

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Origin

Elgara (CPI 65291B) was collected in 1973 by J.S. Gladstones, Western Australian Department of Agriculture, near El Khatouat, 40 km SSW of Rommani in the Zaer-Zayan region, south of Rabat, Morocco. The collection site has an altitude of 600 m and an annual average rainfall of approximately 500 mm. Soil type is a well-drained gritty brown loamy-sand, pH about 6.5, derived from granite. This line was common in uncultivated natural pasture among cork oaks, under apparently moderate grazing. The main associate legume was *Trifolium cherleri*. Tested throughout Australia under the collector's code number GMO65.2. One of four slightly differing strains separated out of GMO65.

Elgara was selected by T.P. Drew, NSW Agriculture & Fisheries, Trangie, from a set of 99 lines in 5 species of *Ornithopus* supplied by the Western Australian Department of Agriculture in 1982 (Gladstones 1984). Thirteen lines were sufficiently promising in initial trials at Balladoran to retest at 9 sites throughout New South Wales. Of these, Elgara was consistently the most vigorous and productive of the early maturing group at the drier sites, and was selected for release by R.D. Freebairn and T.P. Drew.

Submitted by the NSW Department of Agriculture & Fisheries and recommended for registration by the New South Wales Herbage Plant Liaison Committee. The NSW Agriculture & Fisheries will maintain breeders' seed. Registered June 1988.

Morphological description

Elgara has slightly broader leaflets than cvv. Pitman and Avila, particularly in the early stages of growth. Elgara is erect in growth habit reaching a height of 25-45 cm in ungrazed swards in which Pitman was 15-30 cm high. Pods are 25-45mm by 2.0-3.5mm, slightly to strongly curved with constrictions and weak abscission layers between segments. Mature pods fall from the plant more readily than those of Avila; pods remain intact, unless strongly stressed mechanically, whereas the pods of Pitman fall from the plant and break up spontaneously into single-seeded segments soon after maturity.

Seeds are yellow, oblong, about 3.0 mm long by 2.0 mm wide, and flattened. Number of seeds/kg is approximately 306 000.

Agronomic characters

Elgara flowers approximately 105 days after sowing at Perth (126 at Balladoran and 137 at Coonabarabran, N.S.W.), which is about 1 week earlier than Tauro and 3 weeks earlier than Avila and Pitman. It is more erect, and has more vigorous growth than either Pitman and Avila, particularly as a seedling.

In the north and central areas of New South Wales with hot, dry, spring weather, particularly on the infertile sands of the Pilliga region and around Coonabarabran and Gilgandra, Elgara has been more productive and persistent than all other serradella lines tested, including Pitman, Avila, Tauro, Eneabba and a sister line of Madeira, MC1. Uniserra and Madeira were not included.

At Narrabri in 1986, favourable conditions ensured that all lines became established. Elgara produced 3150 kg/ha of dry matter by mid-September, whereas the next more productive line was DP6 (2430 kg/ha). Avila, Eneabba and Tauro yielded 2200, 2100 and 2010 kg/ha, respectively. The yield

of Pitman (1670 kg/ha) was only half that of Elgara. Weather conditions in 1987 were hotter and drier and GT046 (1570 kg/ha), produced more dry matter by early October than the next highest yielding lines, DP6 (430 kg/ha) and Pitman (220 kg/ha).

Seed pods are less segmented and less susceptible to spontaneous shattering than Pitman and yet regeneration in lightly grazed plots has been excellent. Re-establishment data at Purlewaugh, and early season plot ratings for many sites throughout New South Wales, have indicated that Elgara has amongst the highest number of seedlings/m² of the lines under evaluation. Purlewaugh seedling densities were: GTO46 150/m²; Elgara and Eneabba, 130/m²; Avila and Pitman, 110/m²; Tauro, 100/m²; DP6, 70/m² and MC1, 30/m².

In a gravel culture experiment, Elgara was as tolerant of aluminium as Tauro (T.P. Drew and B.J. Scott, unpubl. data).

There were no significant differences between Elgara, Avila, Pitman and Tauro in the protein content or dry matter digestibility at the vegetative stage in September, or at full bloom in November.

Herbage yield ratings taken in several environments and seasons indicate that Elgara is well suited to most districts with deep, acid sandy soils between the 450 and 600 mm isohyets in north-western New South Wales.

Acknowledgments

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Reference

1. Gladstones, J.S. (1984). Section of serradella genotypes for Australian agriculture. *Australian Plant Breeding and Genetics Newsletter* **34**, 58-62.