Register of Australian Herbage Plant Cultivars

B. Legumes
11. Serradella
a. *Ornithopus compressus* L. (yellow serradella)

cv. Avila
Reg. No. B-11a-4
Registered October 1987

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Origin

Avila (CPI 67994A) was collected in 1973 by J.S. Gladstones, Western Australia Department of Agriculture, 75km WSW from Avila, on highway N110 to El Barco, Spain. Collector's number GS 046.1. The collection site had an altitude of 1200 m, an annual average rainfall of approximately 600 mm and an acid, well-drained, light brown, gritty loamy sand, derived from granite. This population was widespread in fallow fields and on roadsides. It had been lightly grazed and some stands may have been sown.

Avila was selected by T.P. Drew, New South Wales Department of Agriculture, Trangie, from a set of 99 lines in five species of *Ornithopus*, supplied by the Western Australian Department of Agriculture in 1982 (Gladstone 1984). Thirteen of these lines were sufficiently promising in initial trials at Balladoran, N.S.W., to re-test at nine sites throughout New South Wales. Of these, Avila was consistently the most vigorous and productive in the late-maturing group.

Submitted by the New South Wales Department of Agriculture and recommended for registration by the New South Wales Herbage Plant Liaison Committee. The New South Wales Department of Agriculture will maintain breeders' seed. Registered October 1987.

Morphological description

This cultivar differs from Pitman in having a more erect habit, more vigorous growth (both as a seedling and as a mature sward) and higher seed yield of slightly smaller seeds. Avila is semi-erect, 40-60 cm high in ungrazed stands. Pods with constrictions and abscission layers between seeds. Mature pods remain intact, unless mechanically stressed, whereas the pods of Pitman fall from plant and break up spontaneously into single-seed segments soon after maturity. Seeds are yellow, oblong, about 2.5 mm long and l.8 mm wide, flattened. Numbers of seed/kg are approximately 377 000 (unhulled) or 207 000 (hulled).

Agronomic characters

Avila is late-maturing like Pitman, but it makes more vigorous growth as a seedling. This improved plant vigour is maintained throughout the growing season and is consistent across varying environments (New South Wales: Grafton, Moss Vale, Balladoran, Binnaway) and as a consequence dry matter production is higher. Avila is one of the most productive serradella lines tested in southern Victoria (Clark and Hamilton 1985), and in South Australia (Craig 1987).

Seed yields, assessed visually appear to be higher than Pitman's under most conditions. The pods of Avila shatter during grazing, but not spontaneously at maturity. This characteristic would be a benefit in the commercial production of seed but should have little effect on re-establishment under grazing. A small amount of seed may be eaten during grazing, but some of this is excreted in a viable form.

Regeneration of this cultivar has been excellent at all sites. This ability to regenerate in both grazed (Binnaway) and ungrazed swards (Balladron, Moss Vale and Grafton) may be due to the greater seed production of this cultivar, relative to Pitman and other late lines.

In a gravel culture experiment, Avila was more tolerant to aluminium than Pitman, Tauro and most of the other 31 *Ornithopus* lines tested (T.P. Drew and B.J. Scott, unpublished). Its total dry matter

production was greater at all levels of aluminium tested and its root growth was only slightly stunted by an aluminium concentration of 15 ppm; it survived at 20 ppm. By comparison, Northam and Seaton park sub clovers were less tolerant of high levels of aluminium than Avila, Tauro or Pitman under the same conditions.

Avila has performed well on strongly acid soils, e.g. at Balladoran on a gravelly sand of pH 3.9 (1:2 soil: 0.01M $CaCl_2$ solution) in which aluminium constitutes 60% of the exchange bases.

Herbage samples of Avila have indicated relatively high levels of crude protein (29.2% early vegetative and 21.7% full bloom), low levels of acid detergent fibre (18.8-23.1%) and high levels of metabolisable energy (11.2-12.0 MJ). These values are consistent with values recorded fro Pitman and Tauro.

It is expected that Avila will replace Pitman on well-drained acid sands and loams in the higher rainfall Tableland regions of New South Wales and Victoria, where it will be usefull for both grazing and hay production.

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References

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