

# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 12. Stylo

#### a. *Stylosanthes guianensis* (Aubl.) Sw. var. *guianensis* (stylo)

##### cv. Graham

Reg. No. B-12a-5

Registered January 1980

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##### Origin

Derived from material collected, as CPI 40255, by R.J. Williams of the Division of Tropical Crops and Pastures, CSIRO, in 1965 from Muyurina, 48 km east of Santa Cruz, Bolivia (lat. 17°S., alt. 440 m). The specimens were growing on a loamy sand that had been cleared and sown to grass.

This cultivar has been widely grown in North and Central Queensland in trials by CSIRO and the Queensland Department of Primary Industries and has performed well in a wide range of edaphic conditions. With the breakdown of resistance to anthracnose in cv. Schofield owing to the advent of the type B race of *Colletotrichum gloeosporioides* Penz. & Sacc., Graham, although considerably earlier flowering, was chosen as a replacement cultivar.

Submitted by the Queensland Department of Primary Industries and recommended for registration by the Queensland Herbage Plant Liaison Committee. Breeders' seed will be maintained by the Queensland Department of Primary Industries. Registered January, 1980.

##### Morphological description (3, 9)

Graham is a typical form of *S. guianensis* var. *guianensis* differing only from the other registered cultivars in minor morphological traits. It is a robust perennial which may, when supported by adjacent plants, exceed 1 m in height. The habit may be erect or sprawling.

Graham flowers earlier than the other three var. *guianensis* cultivars. It has much narrower leaflets and much less red pigmentation in the stipules than Schofield. Its flowers also are a deeper yellow being mid way between those of Cook and those of Endeavour. It differs from Cook in being less coarsely hairy on the stems and generally much less pigmented. Its inflorescence clusters also tend to be smaller than those of Cook. Though much more similar morphologically to Endeavour, Graham lacks the coarse, sparse hairs on the stems and stipules. Like Endeavour it tends to be finer stemmed than either Cook or Schofield. It is, however, a more robust, coarser stemmed plant than fine-stem stylo cv. Oxley which belongs to var. *intermedia* of *S. guianensis* and is subtropical plant (9).

Its seeds are similar to those of Cook, being brown but without the pink blush of some lines of Endeavour. Graham has c. 400 000 seeds kg<sup>-1</sup>. The chromosome number, as with all var. *guianensis* cultivars, is 2n=20.

##### Agronomic characters (3, 6)

Graham is classified in Morphological-Agronomic Group 10B.3 of the *Stylosanthes* collection classification (3). Flowering begins in North Queensland in early April and ripe seed may be found after mid April; seed is harvested in late June. At Mackay it is 4-5 weeks earlier flowering than Cook. Graham is a free-seeding form consistently yielding 500-700 kg/ha of header-harvested seed compared with maximum yields of 300 kg/ha from the three established var. of *guianensis* cultivars (6). The early flowering and free-seeding habit allows it to behave as a reseeding annual when necessary, and hence it is more persistent under conditions of rust, drought and continuous heavy grazing. Whereas Cook, Endeavour and Schofield usually persist for only 3-4 years on newly developed areas, Graham behaves as a permanent component of such pastures. It also has shown more cold tolerance than Cook at Mackay, although this may have little effect on animal production.

Minor symptoms of anthracnose damage have been widely observed on Graham in North Queensland but no serious damage has occurred. It is more tolerant of anthracnose than are *S. humilis* lines, Verano *S. hamata*, Endeavour stylo and Fitzroy *S. scabra* and about equal to Cook. It has not succumbed to type B anthracnose, as did Schofield.

In a series of cutting trials from Heathlands, in northern Cape York Peninsula, to Mackay, it has produced higher third-year dry matter yields and total 3-year yields than Cook and has performed well in observational plantings further south.

## References

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