

New herbage plant cultivar

B. Legumes

10. *Macroptilium*

(a) *Macroptilium atropurpureum* (DC.) Urban (atro) cv. Aztec

Reg. No. B-10a-2. Registered on May 3, 1994.

Originators: BRAY, R.A. and WOODROFFE, T.D.

CSIRO Division of Tropical Crops and Pastures, Cunningham Laboratory, 306 Carmody Road, St Lucia, Qld 4067, Australia.

Registrar: Oram, R.N.

CSIRO Division of Plant Industry, GPO Box 1600, Canberra, ACT 2601, Australia.

Released by CSIRO Division of Tropical Crops and Pastures.

Published in the Australian Journal of Experimental Agriculture 1995, 35, 121.

Origin

Aztec was bred by a back-crossing program to incorporate resistance to rust (caused by *Uromyces appendiculatus* (Pers.) Unger var. *crassitunicatus* J. Irwin (Irwin 1988)) into cv. Siratro. The cultivar is a mixture of 4 populations, each derived by back-crossing a rust-resistant accession of *M. atropurpureum* to Siratro for 4 generations (with selection of rust-resistant progeny) and then selfing for 2 generations to identify lines homozygous for rust resistance (Bray 1993). The original accessions, and their geographic origins, were: CQ1382 (El Salvador), CPI 85852 (Oaxaca, Mexico), CPI 90847 (Sonora, Mexico), CPI 92640 (Colombia). These accessions were chosen for their widely different geographic origins and apparently different rust-resistance genes (Bray *et al.* 1991). Ten back-cross lines were maintained for each accession, and bulked to form the final cultivar. No plant of Siratro was used as a parent in more than one cross in the final generation of back-crossing. All rust screening took place under glasshouse conditions (Bray 1988; Ogle *et al.*

1988). There was no selection for characters other than rust resistance.

Submitted by CSIRO Division of Tropical Crops and Pastures and recommended for registration by the Queensland Herbage Plant Liaison Committee. Breeders' seed will be maintained by CSIRO. Protection for this cultivar has been sought under Plant Variety Rights legislation.

Morphological description

Because of the breeding procedures, Aztec closely resembles its recurrent parent, Siratro, except for rust resistance. The morphological description of Siratro contained in the Register of Australian Herbage Plant Cultivars (Oram 1990) is, therefore, directly applicable to Aztec.

Agronomic characters

The main distinguishing feature of Aztec compared with Siratro is its resistance to rust. In field trials at Samford (south-east Queensland), rust has been present on Siratro at each of 3 harvests over a 12-month period, but completely absent from Aztec. In a spaced-plant trial at Grandchester (south-east Queensland), all 161 plants of Aztec observed were rust-free, while all 112 Siratro plants were badly infected.

Yield comparisons at Samford have shown an average of 30% higher leaf production (ranging from 14% in summer–48% in winter) from Aztec compared with Siratro over a 12-month period (R.A. Bray, unpublished data).

Seed production is good with c. 1500 kg seed harvested from a 3 ha planting (J. Rains, personal communication).

References

- BRAY, R.A. (1988) Inheritance of rust resistance in *Macroptilium atropurpureum*. *Plant Pathology*, **37**, 88–95.
- BRAY, R.A. (1993) Breeding rust resistant Siratro. *Proceedings of the XVII International Grassland Congress, Palmerston North, New Zealand*, **3**, 2128–2129.
- BRAY, R.A., SONODA, R.M. and KRETSCHMER, A.E. (1991) Pathotype variability of rust caused by *Uromyces appendiculatus* on *Macroptilium atropurpureum*. *Plant Disease*, **75**, 430.
- IRWIN, J.A.G. (1988) *Uromyces appendiculatus* var. *crassitunicatus*, var. nov. from *Macroptilium atropurpureum*. *Australian Systematic Botany*, **1**, 363–367.
- OGLE, H.J., IRWIN, J.A.G. and BRAY, R.A. (1988) Quantitative histological studies of compatible and incompatible interactions between accessions of *Macroptilium atropurpureum* and *Uromyces appendiculatus*. *Plant Pathology*, **37**, 96–104.
- ORAM, R.N. (1990) *Register of Australian Herbage Plant Cultivars*. 3rd Edn. p. 239. (CSIRO: Melbourne).