Register of Australian Herbage Plant Cultivars

A. Grasses
10. Pennisetum
Pennisetum clandestinum Hochst. et Chiov. (Kikuyu grass) cv. Whittet

Reg. No. A-10c-1
Registered March 1970

Published in the 2nd Edition of Register of Australian Herbage Plant Cultivars 1972

Origin

Derived from seed introduced by the New South Wales Department of Agriculture in 1960 from Dr. A.V. Bogdan of the Grassland Research Station, Kitale, Kenya. The seed was originally collected at 1890 m and bore the Kitale number K53955. It was accessioned Mk319, later changed to P.713.

Originally 1800 single plants were raised in the glasshouse at the Grafton Agricultural Experiment Station, 8 of these being maintained as single-spaced plants for observation. The remainder were planted in an isolated seed increase plot. This was allowed to form a sward in order to study agronomic attributes and seed production. No variation was observed between the single-spaced plants of cv. Whittet but they were noted to be taller, coarser, with broader leaves, and more vigorous than similarly spaced single plants of a line designated as Kabete Mk268 and common Kikuyu. Subsequently, 12 lines were introduced from Kenya, accessioned P.1388 to P.1399, and these were compared during 1961-62 but none was rated superior to P.713 (1).

Breeder's seed is maintained at the Grafton Agricultural Research Station of the New South Wales Department of Agriculture. Submitted for registration by the New South Wales Department of Agriculture and recommended for registration by the New South Wales Herbage Plant Liaison Committee. Registered March 1970.

Morphological description

A stoloniferous rhizomatous perennial, with short culms, 8-15 cm (rarely more) high, growing out into long rooting runners appressed to the ground and copiously branching, with the branches short, closely sheathed, and shortly ascending. The leaf sheaths are 1-2 cm long, rarely longer, almost membranous, very pale, eventually turning brown, with fairly dense short hairs. The ligule is a dense rim of hairs. The leaf blade is linear, 1-12 cm (or more) long, up to 6 mm wide, tightly folded when young, opening flat when mature, glabrous or sparingly hairy.

The inflorescence is reduced to a cluster of 2-4 very shortly stalked spikelets, and is almost enclosed in the uppermost leaf sheath. Each spikelet has up to 15 delicate, finely scabrous bristles up to 1.5 mm long. The spikelets, which are 1.5-2.0 mm long, narrow, pale at the base and greenish upward, consist of 2 florets; the upper one is fertile, with a membranous 8-12-nerved lemma and a narrow membranous 2-4-nerved palea, and the lower one is sterile, consisting of lemma only. There are 3 stamens, long exserted on slender filaments 45-50 mm long, with anthers 5-7 mm long. There is one stigma, up to 30 mm long, occasionally bifid. The stigma appears first and is usually withered before the anthers appear.

The caryopses are dark brown in colour, flat ovoid, about 2.5 mm long and 1.5 mm broad; they are pointed at the end of their attachment, and the short style is persistent at their apex. Approx. 400,000 seeds per kg.

Compared to lines of common Kikuyu, cv. Whittet is characterized by taller growth, slightly broader leaves, thicker stems, and longer internodes under spaced plant conditions. It is slower to form a dense sward than common kikuyu and is uniformly male fertile.

Agronomic characters

Whittet has been more productive in sward trials at Grafton than common Kikuyu on both a fine-textured red clay loam and a coarse-textured sandy loam. Further sward trials in 1962-63 on a range of soils from eastern seaboard (1520 mm) to western foothills (890 mm), and derived from shale, sandstone, and granite, confirmed that cv. Whittet was more productive than common Kikuyu; and there are indications that it is surviving better than common Kikuyu under conditions of lower or declining soil fertility. Also the percentage and total crude protein content was higher than in common Kikuyu (1).

There is some evidence that the root development of cv. Whittet is superior to that of common Kikuyu and it is possibly better suited to establishment on poor soils and for intensive production under irrigation and heavy fertilization. It is likely to be less suitable for soil stabilization than common Kikuyu.

Flowering can occur each month unless interrupted by frost. However, flowering at Grafton, N.S.W., increases from July to the end of September.

After establishment in 1965, seed yields of cv. Whittet in 1966 were approximately equal to those obtained from a naturalized line of Kikuyu which had been selected for perfect flowers. Maximum yields of seed of 335-480 kg per ha have been obtained in trials at Grafton from mid to late November harvest; and this seed has had germination percentages of 75% in 10 days. Production and harvesting of the seed require special techniques (2).

References

1. Wilson, G.P.M. (1968). New Kikuyu variety performs well at Grafton. *Agric. Gaz. N.S.W.* **79**, 51.
2. Wilson, G.P.M. (1970). Method and practicability of kikuyu grass seed production. Proc. 11th Int. Grassld. Congr., Surfer's Paradise, Qld., pp. 312-15.