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Plant Introduction in Tamil Nadu - *Stenotaphrum dimidiatum*
 Brogn. Syn: *S. glabrum* Trin - a new colourful grass
 from the wild, for lawns and soil erosion control

by

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Introduction: *Stenotaphrum* Trin is a tropical genus with 2 or 3 species. *S. dimidiatum* Brogn (Fig. 1) is reported to be distributed in the tropical plains of India (Hooker, 1897; Fischer, 1956). Among the other species *S. secundatum* (St. Augustine grass), a native to West Indies, Guinea, South Africa and the Pacific areas from Mexico to Australia is extensively cultivated in the Southern States of U.S.A. in lawns and on fairways of golf courses (Hoover, Hein, Dayton and Erlanson, 1948). A leaf-variegated form of this species is a well known garden plant.

Methods of Material: Sprigs of *S. dimidiatum* were introduced from Kerala State in the year 1956 at the Government Botanic Gardens, Coimbatore. These were planted first in a bed and growth habits studied. Subsequently, the species was tried in 1966 for its usefulness in soil conservation for covering the bottom and sides of drainage channels. In 1967, it was planted under the canopy of trees at the Botanic Gardens, and in 1968 in an open lawn for evaluating its suitability as a lawn grass.

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Results: (i) *Description*: *S. dimidiatum* is a glabrous, slender, rhizomatous, perennial, coarse grass, creeping extensively by means of stolons with long internodes. They root profusely at every node, and produce erect culms, which are about 15 to 35 cm high (Fig. 2). Besides, short branches are also produced at the nodes. These branches are leafy and flat. The distichous leaves are linear with rounded apices, glabrous, about 3 to 10 cm long and 0.5 to 0.8 cm broad. The sheaths are flat and compressed. The spikelets are borne on the anterior face of spiciform panicles, usually produced terminally or sometimes from the upper axils of the culms. The rachis is flat, alternately narrowly and broadly winged on one side and the other. The broad wing is usually toothed at its apex, forming the hollow receptacle bearing 2 to 8 spikelets (Fig. 1). The spikelets are lanceolate to ovate-oblong, 3 to 5 mm long. Each spikelet consists of 2 dissimilar glumes, the lower being small and rounded. The lemmas are similar, the lower being either paleate or epaleate, empty or containing a male floret. The upper lemma has a two keeled palea, bearing a bisexual flower. There are two lodicules, three stamens and a small, oblong ovary terminating into two long distinct styles with plumose stigmas. Seed setting is poor and the spread of this grass from seeds is not noticed also.

(ii) *Growth aspects*: The grass requires frequent irrigation, about twice a week, for better growth and coverage in sunny situations at Coimbatore. It is observed to be moderately drought tolerant.

FIG. 1.

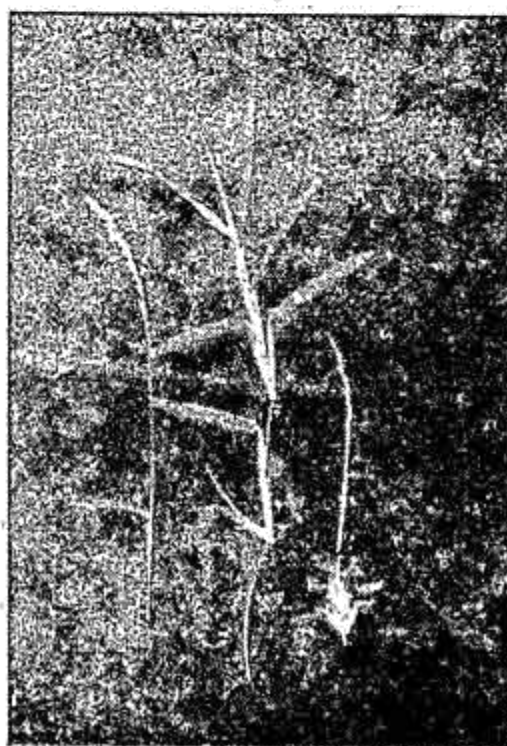


FIG. 2.

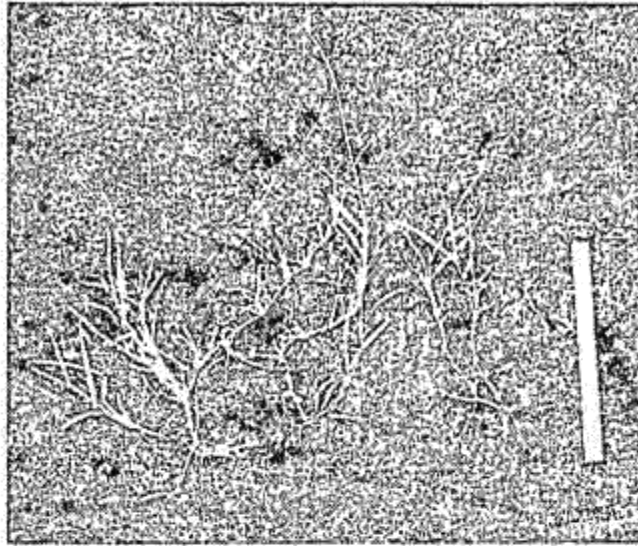


FIG. 3.



The growth of grass in the drainage channels is more vigorous in sandy loam than in clayey loam. The development of fibrous, adventitious roots also is good and diffuse in the light soils.

The plants are found to be healthy and green and pleasing to look at both in open sun and in the shade. In the former situation they are yellowish green and during hot, wet-weather periods or periods following frequent copious irrigation brown patches are noticed to develop here and there. It is not affected by the nematode *Aphelenchoides* sp.

(iii) *Propagation*: *S. dimidiatum* is found to establish well in fresh plantings, only when the rooted stolons are buried deep in moist soil and the surface covered with mulch materials such as polythene sheets or lawn clippings. For rapid growth and spread, moderate application of manure and fertilizers as basal dressing is found necessary. Frequent foliar application with one per cent urea spray liquid improves the health and tones the colour of the grass particularly, following the development of brown patches on the leaf.

(iv) *Ability to stand mowing*: This species produces large number of tillers only when mowed often. It is also found to withstand frequent mowing and rolling. In fact, the texture and appearance of the lawn improves only when these operations are regularly carried out (Fig. 3). Mowing this grass in lawn to less than half-of-an inch or above one inch is found to mar its appearance. Similarly, mowing at long intervals also spoils the beauty of the lawn by the appearance of the erect spiciform panicles all over.

Discussion: The creeping and rooting habit of *S. dimidiatum* enables it to form dense sods. This characteristic feature and its capacity to stand shade, trampling and cutting favours its choice for its use in the soil conservation and erosion control programmes, in humid tropical regions with moderate to heavy rainfall. This grass is particularly suited as soil cover on exposed lands, drains and gullies.

Very little work has been carried out in our country for developing grasses for special uses. According to Musser, Burton and Schoth (1948) accent should be given to the seven characteristics in evolving or selecting suitable strains or species of grasses for specialised uses - for lawns, playgrounds, landing fields, roadsides and so on. These attributes are resistance to disease, recovery from injury, tolerance of cold, heat sudden fluctuations in temperature, appearance and wearing qualities, turf forming quality, ability to grow under conditions of low moisture and nutrient levels, and adaptation to specialised uses and types of maintenance. Davis and Harrington (1948) mention that in addition to the above characteristics, a sward forming grass should be a low growing species because of reduced mowing costs and be of a good colour to impart a distinctive charm to the lawn. The trial of *S. dimidiatum* here clearly demonstrated the presence of all these desirable attributes in this grass favouring its introduction to cultivation as lawns and greenswards in tropical regions.

This species will form an addition to the useful grasses for lawn purposes in the warm tropics viz., *Cynodon dactylon* Pers, *Sporobolus tremulus* Kunth and *S. orientalis* Kunth (Sundararaj, Ramakrishnan and Alikhan, 1966).

Summary: *S. dimidiatum* an indigenous wild grass introduced from the erstwhile Travancore State was critically evaluated for its use in soil conservation and for lawn purposes. It is well suited as a soil cover cum soil binder and also as a very attractive lawn grass or as greensward.

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