INTRODUCTION

Pennisetum pedicellatum Trin. commonly known as Deenanath grass or Kayasuwa grass is a warm season annual distributed in the tropics and subtropics of the Old World. It is a native of tropical Africa and is probably an introduction in India (Bor, 1960). In India this grass grows wild or is grown under neglected conditions in the states of Bihar, Rajasthan, Madhya Pradesh and West Bengal, and in the Western Penninsula (Hooker, 1897; Blatter and McCann, 1935; Mitra, 1958). It has a wide adaptability, can withstand many cuttings, and has a dual potentiality as a forage crop and as a soil binder. It compares favourably in nutrition with the Napier grass and is palatable to livestock (Mukerji and Prasad, 1969). Its soil binding capacity makes it a good soil conserving crop (Mukerji and Chatterjee, 1955; Chaudhuri, 1965; Mukerji and Prasad, 1969; Singh and Chatterji, 1973). Whyte (1964) indicated the possibility of this grass being used in the improvement of leafiness in other species of *Pennisetum*. Relwani *et al* (1968) have pointed out that this grass can be improved into a perennial and drought resistant one.

The work done so far on this grass seems to be mainly of academic interest. The cytology and breeding behaviour have not been correlated so as to determine the feasibility of a sound breeding programme for its improvement. Varying chromosome numbers have been reported for this grass, viz.,

2n = 30, 36 (Chatterji and Pillai, 1970); 32, 35, 36 (Timothy, 1962); 36 (Chatterji and Singh, 1971; Olorode, 1974); 36, 54 (Nath and Swaminathan, 1957; Nath et al, 1970); 48 (Joshi et al, 1959), and 54 (Naithani and Sisodia, 1966; Sisodia, 1970).

Whyte (1964), through progeny testing, reported this grass to be strongly apomictic with 1-3 per cent sexuality; Mukerji and Prasad (1969), through hybridization studies, noted it to be highly self fertile; while Chatterji and Pillai (1970), through embryological studies, found it to be a facultative apomict. The reported diverse chromosome numbers are probably indicative of aneuploidy within the species, and that its apomictic mode of reproduction is helping their perpetuation.

Five biotypes of Pennisetum pedicellatum Trin. are found to grow in the areas surrounding the Indian Institute of Technology Campus at Kharagpur, which differ from one another in some morphological characteristics, especially in inflorescence shape and colour (Chatterji and Reddy, 1974). Of these, two are abundant, one having drooping inflorescence (Fig. 1) with "deep pink" colour (type A) and the other with erect (Fig. 2) "brownish pink" inflorescence (type B). The former (type A), the predominant and aggressive one, was taken for the present studies.