

## INTRODUCTION

The genus Setaria Beauv. belongs to the tribe Paniceae of the family Poaceae and consists of approximately 125 species distributed throughout the temperate, subtropical and tropical regions of the world. Grasses belonging to this genus are usually annual and are only rarely perennial. The genus has great economic importance and includes cultivated grain crops, perennial forage grasses and noxious weeds. Several varieties of S. italica known as foxtail millet or Hungarian grass have been cultivated since prehistoric times. This millet crop is now raised extensively in different parts of Asia as a food grain.

The genus Setaria is known from every major land mass of the world, except the polar regions. It is particularly well represented in Africa, Asia and America. The greatest concentration of the genus is in tropical Africa, where it is represented by 74 species (Stapf and Hubbard, 1930). In North America it is represented by 43 species and four varieties grouped into three subgenera viz. Ptychophyllum, Paurochaetium and Setaria (Rominger, 1962). However, in India Setaria is represented by 17 species only (Bor, 1960). Of a particular interest to pastoralists, is a group of species which have come to be known as Setaria sphacelata complex. Members of this group are being grown increasingly in the higher rainfall areas of subtropical Australia and throughout the tropics and subtropics.

Since the release of the cultivar "Nandi" in 1961 and of "Kazungula" in 1962 (Anon, 1967), large areas have been used for Setaria cultivation in Queensland and Northern New South Wales. Efforts are also being made in this group of grasses for introducing new genotypes for higher yield.

The economic importance of the genus outlined above justifies a detailed study of the genus. However, the earlier taxonomists characterized the different grasses on the basis of morphology. But in recent years considerable importance has been attached to modern taxonomy variously referred to as experimental taxonomy or biosystematics, including cytotaxonomy, chemotaxonomy, numerical taxonomy etc. From the point of view of this modern taxonomic approach, the genus Setaria received little attention in the past. However, in India a cytological study in the genus Setaria with particular reference to S. glauca complex was conducted by Khosla and Singh (1971) and by Khosla and Sharma (1973). In Australia, detailed studies on S. sphacelata complex were undertaken by Hacker (1966, 1967, 1968) and Hacker and Jones (1969). Similar work on S. macrostachya complex was undertaken by Emery (1957). Willweber-Kish (1962) had studied interspecific relationships in this genus. In contrast to these studies on a few species of Setaria, detailed studies were attempted in certain other important genera of the tribe Paniceae. These genera included Cenchrus (DeLisle, 1963, 64; Ramaswamy et al., 1969), Digitaria (Gould, 1963; Gupta and Srivastava, 1969; Mary and Malik, 1971; Gupta et al., 1974), Panicum (Jauhar and Joshi,