

3rd International Conference on Agriculture & Horticulture

October 27-29, 2014 Hyderabad International Convention Centre, India

Development and evaluation of back cross hybrids involving *Erianthus* for agronomically important traits

Mohanraj K and N V Nair

ICAR-Sugarcane Breeding Institute, India

Modern sugarcane varieties are derived from interspecific hybridization involving the cultivated sugarcane (*Saccharum officinarum*) and the wild species (*Saccharum spontaneum* L.). However, sugarcane varieties currently under cultivation have a narrow genetic base which has imposed serious limitations in making a significant improvement in sugarcane productivity. In recent years considerable attention is given to use *Erianthus* spp. which has important traits such as excellent vigour, high biomass, great ratooning ability, and good drought and water-logging tolerance, but more importantly resistance to several diseases. *Saccharum x Erianthus* crosses are difficult to make and have very low success rates, which had been serious limitation in the exploitation of this potential genus. At Sugarcane Breeding Institute, Coimbatore, introgression of *Erianthus* spp. is in progress since 1980's and a number of intergeneric hybrids had been produced over the years. The hybrids though had more productivity lacked some of the agronomic traits including sugar. During 2009, an attempt was made to backcross the intergeneric hybrids with commercial canes to improve them further with respect to agronomic traits. A total of 188 back cross progenies of intergeneric hybrids involving *Erianthus* were evaluated clonally for juice quality and cane yield traits at 300 and 360 days. Though fifty three hybrids had shown better yield than the standard Co 86032, only one clone GU 07-5403 had shown both higher yield juice and quality. Seven clones viz., GU 07-5403, GU 07-127, GU 07-5512, GU 07-5585, GU 07-5388, GU 07-5536 and GU 07-1740 recorded more than 19% Sucrose @ 360 days. The results indicted further backcrossing/intercrossing with the commercial canes is required to develop agronomically superior sugarcane varieties with *Erianthus* genetic base.

Biography

Mohanraj K has completed his PhD in Plant Breeding and Genetics from Tamil Nadu Agricultural University, Coimbatore and presently working as scientist at ICAR-Sugarcane Breeding Institute, Coimbatore. He has published more than 20 research papers in reputed national and international journals. He is actively involved in sugarcane breeding especially utilizing sugarcane germplasm to develop new genetic stocks.

mohangene@yahoo.com