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ABSTRACTS

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Induction of somaclonal variation in *Saccharum officinarum* clones with purple coloured leaves

Shimna Pavithran and * K. Chandran

KVM College of Engineering and Information Technology, Cherthala

*Sugarcane Breeding Institute Research Centre, Kannur

Sugarcane is cultivated all over India except in cold areas like Kashmir and Himachal Pradesh where temperate climate prevails. It occupies about two percent of the gross cropped areas in the country. Besides as a sweetening agent, sugar and other related products are the source of one of the simplest forms of energy. The present day sugarcane varieties grown all over the world are complex species hybrids synthesized from about 25 basic genotypes belonging to the 5 species of *Saccharum*. *Saccharum officinarum* is one of the species coming under these genera which immensely contributed to the development of modern sugarcane varieties. However, many of the genetic variabilities could not be utilized in crop improvement of sugarcane due to lack of

flowering, synchrony in flowering etc. Among *S. officinarum* clones maintained in the world collection of sugarcane germplasm, some of the clones are having peculiar traits with purple leaves, predominantly on the younger leaves. It can act as a very good morphological marker system in cytogenetic and breeding studies of sugarcane. Unfortunately none of these clones are flowering type and hence not amenable to the conventional breeding programme. Hence, this study was taken up with an objective of inducing somaclonal variation in *S. officinarum* clones with purple coloured leaves. Four clones with purple coloured leaves (28 NG 13, IJ 76 556, IJ 76 314 and IK 76-65) were taken and cultured in various treatment to induce callus. The five treatments of 2, 4-D used were 2.5 mg/l, 5 mg/l, 10 mg/l, 20 mg/l and 40 mg/l). Callus was developed within one month and these callus were transferred to a regeneration medium with 6mg/l BAP and 100 ml coconut water. The shoot formation was observed after 2 weeks and the shoots were transferred to rooting medium with IBA. The regenerated plants were subjected to acclimatization and hardening and finally transferred to the field. The plantlets were observed for variation morphological traits. Obvious variation was detected for leaf pigmentation. The regenerated plantlets population also has green coloured leaves which are different from the parent with greenish purple coloured leaves which indicate that variation could be induced in the cultured explants.