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Next generation breeding tools for development of stress tolerant crops

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Improvement in plant adaptation to various stresses is essential to ensure food security for the increasing world population. Traditional breeding methods are not to be wrathful in stress tolerant in field condition. While the next generation crop breeding technology; Genomic selection, Transcriptome mapping (ESTs, SAGE, MPSS, Microarray), Genomics (whole genome sequencing, Next Generation Sequencing and Genotyping-by-Sequencing) and Allele mining approaches will be useful for identification of gene/s, transcription factors (TF), microRNA (miRNA) and Quantitative Trait Loci (QTLs) responsible for stress tolerance. Once these are identified, the next approach is to transfer them into elite cultivars. The transgenic approach is feasible to engineer traits that are controlled by one or a few major genes and QTLs not easily amenable through transformation. For this purpose, we can use high throughput technology; marker assisted selection (MAS), marker assisted back crossing (MABC) and gene pyramiding to elucidate thousands of genes or even entire genomes. Next generation plant breeders need to utilize this next generation technologies and techniques to develop stress tolerant crops.

Abbreviations: Marker Assisted Selection-MAS, Marker Assisted Back Crossing-MABC, Expressed Sequence Tags-ESTs, Serial Analysis of Gene Expression-SAGE, Quantitative Trait Loci-QTLs, Massively Parallel Signature Sequencing-MPSS, Whole Genome Sequencing-WGS, Next Generation Sequencing-NGS, Genotyping-by-Sequencing-GBS.

Biography

Daspute Abhijit Arun, M.Sc. (Agri) in Molecular Biology and Biotechnology, IABT, UAS, Dharwad. He worked on "Identification of molecular markers associated with sterility mosaic disease of pigeonpea". He participated in National Conference on Plant Biology and Biotechnology, organized by Department of Botany, Yashwantrao Mahavidyalaya, Nanded, Maharashtra in 2008. He communicated research article manuscript on "Inheritance of sterility mosaic virus resistance in pigeonpea [cajanus cajan (L.) millsp.]" to The Plant Pathology journal.

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Effect of harvesting at different heights on growth and flower yield of Carnation (*Dianthus caryophyllus* L.) in second season crop

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The present study was under taken in a commercial floriculture farm under protected cultivation with three cultivars of carnation during July 2010 to February 2011. The experiment was laid out in randomized block design with factorial concept. Harvesting of carnation flower stalk at 10 cm height from the ground level recorded minimum number of days to sprouting of buds than other harvesting heights i.e., 5, 15 and 20 cm height. Days to first flower bud appearance, color break stage and days to harvest was also minimum with harvesting at 10 cm height in cultivars Domingo, Dover and Keiro. And the length of lateral, length of flower stalk and flower, diameter of flower stalk and flower, number of flower stalks per plant, fresh flower weight and vase life was maximum with harvesting 10 cm height than other harvesting heights in cultivar Domingo.

Biography

Ashwini Kasturi has completed her M.Sc. (Floriculture and Landscaping) from Dr. Y. S. R. Horticulture University during 2009 to 2011 and completed her BSc (Horticulture) from Acharya N. G. Ranga Agriculture University.