

# 2<sup>nd</sup> International Conference on Agricultural & Horticultural Sciences

Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

## Comprehensive traceability of tissue culture raised plants in commercial micro-propagation

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Traceability of end products is very important in any production facility particularly in life science industry where final products are living material or its part. This can be achieved through implementation of Standard Operating Procedures (SOPs), maintenance of effective records for inputs, process, material movement and labelling of intermediate as well as end products. This concept has been standardized in commercial micro-propagation under the unique quality management system known as National Certification System for Tissue Culture Raised Plants (NCS-TCP). Data for mother plants/stock culture used for mass propagation through tissue culture are recorded. The origin material is tested for all the known viruses and allotted a unique 20 digits stock registration number. This tested material forms a batch and processed in such a manner to get the batch wise end products i.e. tissue culture plants. SOPs developed for Tissue Culture Production Facility guides on various procedures and internal records. Sampling strategy has been adopted for testing and certification of the batch of tissue culture plants derived from initial tested material which was allotted a unique 20 digits stock registration number. Samples are tested for genetic fidelity using ISSR primers and presence of any known viruses through ELISA or PCR. If plants are found free from viruses and uniform, certification is given with 40 digits batch registration number which includes additional 20 digits added on the 20 digits stock registration number. Certification labels including barcode are issued against each certified batch of tissue culture plants which provides complete history of plants. This labelling and entire concept not only provides effective mechanism of quality assurance by the tissue culture companies but also instils a higher level of confidence among end uses/farmers.

### Biography

Shiv Kant Shukla has done his M.Sc. and Ph.D. in Biotechnology and possesses more than 14 years of diversified experience in biotechnology sector. Currently he is the Assistant General Manager in BCIL (a company established and promoted by the Department of Biotechnology, Govt. of India) and managing various programmes such as Entrepreneurship Development Programme (EDP), Biotech Park/Incubator, NCS-TCP etc.

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