

# 12<sup>th</sup> Euro Biotechnology Congress

November 07-09, 2016 Alicante, Spain



**D H Tejavathi**

Bangalore University, India

## **Novel *in vitro* techniques for sustainable cultivation and efficient induction of genetic variability in *Agave vera-cruz* Mill**

*Agave vera-cruz* Mill is a member of Agavaceae, is one of the important fiber yielding, ornamental and medicinal plants. Gradual depletion of genetic resources of economically important plants is the result of indiscriminate collection of the source material and disappearance of natural habitats due to human intervention. At this juncture, plant genetic improvements programs are primarily dependent on the availability and efficient induction of genetic variability. Novel techniques like *in vitro* culture, *in vitro* mutagenesis and AM fungal association provide a scope for induction of much needed genetic variability in the base populations. Nearly 100 shoots were differentiated from callus raised from shoot tip cultures on transferred to ½ MS+BAP. Among the regenerated plants, a few plants raised through indirect organogenesis have shown a few phenotypic variations from the source plants. Shoot tips were exposed to EMS at various concentrations and  $\alpha$ -irradiation for varying periods and doses. It was found that multiple shoot induction from these cultures was two-fold more than the control plants. Normal and tissue culture plants were treated with *Glomus mosseae* and *G. fasciculatum*; two AM fungal species to study their effect on the enhancement of the biomass and active principles. The increase in biomass was found to be threefold than the control plants. Effect of *in vitro* mutagenesis and AM fungal association on the synthesis of primary and secondary metabolites in control and treated plants were studied. Finally, genetic variability induced by these novel techniques in micro-propagated plants was analyzed by AFLP markers.

### **Biography**

D H Tejavathi is working as UGC BSR-Faculty Fellow in the Department of Botany, Bangalore University, India. She has published 80 research articles in various national and international journals and completed 8 research projects funded by DST, CSIR, BU-UGC and MoEF, India. She was conferred with an award 'Merit of Excellence' for outstanding contribution to the medicinal plant research during the 4<sup>th</sup> international conference on medicinal plants and herbal products held at John Hopkins University, USA, 2012.

[tejavathi\\_hanu@yahoo.com](mailto:tejavathi_hanu@yahoo.com)