



# **XIV AGRICULTURAL SCIENCE CONGRESS**

## **Innovations for Agricultural Transformation**



### **ABSTRACTS**

#### **Poster Presentations**

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needs to be conserved through vegetative means for conservation of true-to-type clones. The present study was undertaken to develop protocol for cryopreservation and regeneration of dormant buds. Scion sticks of variety Shalimar collected from CITH, Srinagar and NBPGR, Regional Station, Shimla during January, 2018 had an initial moisture content ranging from 45-50%. These responded well to desiccation up to moisture content level 25-28% with viability up to 90%. Two explants sizes (3 and 9 cm long scion sticks containing buds) were desiccated and subjected to step-wise freezing at different temperature regimes for different duration before being plunged in liquid nitrogen. Among the various treatments, 9 cm long desiccated segments cooled at -15°C for 5 days and shifted to -20°C for 24 h, followed by freezing in liquid nitrogen showed very high post-thaw viability (85%). The post-thaw rehydration protocol was standardized and around 80% sprouting was observed after slow thawing (24 h at 4°C) and rehydration of the cryopreserved dormant buds in the lab conditions. Future line of work includes *in situ* testing of regeneration through budding on the suitable rootstocks.

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#### Pollinators of mango: Diversity, dynamics and ecosystem services

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Mango (*Mangifera indica* L.) is pollinated by different kinds of insects. However, often the contribution of pollinators is overlooked and the commercial production packages do not pay due attention to the pollinators safety in crop ecosystems. Hence, a holistic study on pollinators is essential to conserve and derive maximum benefits. At ICAR-Indian Institute of Horticultural Research, Bengaluru, systematic studies were conducted between 2012-17 on pollination ecology of mango. Three Dipteran species viz., *Chrysomya megacephala*, *Eristalinus arvorum* and *Stomorphina discolor* and two wild bee species viz., *Apis florea* and *Tetragonula iridipennis* were the important pollinators of mango. Besides documenting species diversity, shifts in pollinator profile in relation to crop phenology, variety and climate variables were studied. Contribution of multivarietal mango orchards in terms of ecosystem services has been assessed and found that the wide spread floral period of different varieties, help to sustain diverse pollinators. Impact of different species on fruit set was worked out and it was established that absence of insect pollinators lead to a reduction in fruit set ranging from 70-90 per cent in different varieties. Thermal tolerance of major pollinator species was also worked out and *C. megacephala* was found to forage at wider range of temperatures compared to other species. A mass multiplication technology was standardized to produce *C. megacephala* in large numbers and augment natural populations in the field. Realising the economic importance and ecosystem services provided by native pollinator fauna, strategies for their conservation and need consider them as essential inputs of horticulture are discussed.