

obtained after booster dose of CP will be checked for its ability to detect the virus in various field samples.

## O (S 02) 09: Identification and characterization of viruses infecting flower crops in India

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Virus diseases are of great economic importance in flower crops as most of them are propagated vegetatively. Many viral diseases cause significant losses in the quality of the flower making it unfit for export and viruses are very difficult to control. Recent advancement in the molecular biology have provided new tools for the identification of viruses. In this study genome sequence based detection and characterization have been employed successfully for identification of viruses infecting Gladiolus, Tuberose, Jasmine and Amaryllis. Plant samples showing characteristic symptoms of virus infection such as mosaic, mottling, streak, ring spot and yellow mosaic were collected and preliminary tests were conducted through Electron Microscopy by leaf dip method. The results indicated the presence of isometric, flexuous and bullet shaped particles in the infected leaf samples of Jasmine, where as in Gladiolus, Amaryllis and Tuberose only flexuous filamentous particles were observed. For molecular identification of these samples, total DNA and RNA was isolated and PCR and RT-PCR was performed using CMV, *Badnavirus* and *Potyvirus* specific primers. The DNA fragment was further processed and used for cloning and sequencing. Nucleotide sequences of the obtained amplicons were determined and compared with sequences present in the NCBI database using the BLAST algorithm. Results revealed the presence of *Tuberose mild mottle virus* in Tuberose, *Bean yellow mosaic virus* in Gladiolus, *Amaryllis potyvirus* in Amaryllis and CMV and *Badnavirus* in Jasmine. The virus-specific sequence information generated in this study can subsequently be used to develop PCR-based detection methods. Since most of the ornamentals and flower crops are propagated through bulbs and the mother stock once infected, act as a source for disease spread in successive generations. Therefore detection and certification of virus-free propagation material is imperative for production of quality flowers.

## O (S 02) 10: Citrus huanglongbing associated *Candidatus liberibacter asiaticus* in North East India: Genetic characterization and development of simplified diagnostics

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Huanglongbing (greening) is a devastating disease of citrus causing huge economic losses worldwide. North East India is a major citrus grove known for large number of economically important citrus species and their wild relatives. However, the systematic studies on the prevalence and characterization of huanglongbing (HLB) disease were lacking from this region. Present study reports the results of systematic surveys carried out in different citrus groves of North East India (Manipur, Nagaland, Tripura, Mizoram, Arunachal Pradesh and Sikkim). Out of the 336 samples collected, 198 samples were tested positive for HLB (58.93%) in PCR using