



ident phenotyping as similar to recurrent parent. Background selection and DUS characterization of NILs is in progress.

PE 4 (INVITED)

## RESEARCH ADVANCES IN HORTICULTURE IN WEST COAST REGION AND FUTURE DIRECTIONS

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West coast region of the country is bestowed with enormous horticultural resources under the shelter of Western Ghats and prevalent favourable agro-climatic conditions. At the same time, the entire region, being the potential tourist destination, is also under great threat primarily due to burgeoning demographic pressure and unabated indiscriminate exploitation of the resources, besides the climate change factors and changing global policies under WTO regime. While the horticulture sector imparts a major economic support to the states coming under the region, there has been a constant challenge for the sustainable horticulture industry as a whole. Contemporary research efforts have been a major fulcrum in balancing the scenario to cater to the needs of the region on one side and sustainable management of the resources on the other. In the past decade several horticultural technologies are achieved by various research institutes and state agricultural universities in West coast region. The challenges in the sector of horticulture are being addressed from different angles ranging from management of local genetic resource, crop improvement through production & management technologies to post-harvest technology and farm mechanization. This article, thus, is an effort to recapitulate the recent advances accomplished in various sectors to understand an overall current status of research which may pave way for delineating the future directions. For instance, many new varieties have been developed in fruit crops like mango, Kokum, Jamun, Karonda, pineapple, etc.; plantation crops like cashew, coconut, peanut, etc; spices like black pepper, cinnamon, nutmeg, etc., vegetables & tuber crops and flower crops, besides a number of improved production technologies including protected cultivation, precision farming and management of biotic and abiotic stress factors under gambit of climate change scenario. Several post-harvest management practices for the above mentioned crops are developed which not only are the solutions to avoid post-harvest losses but also are creating additional value addition to the produce besides imparting the livelihood security and nutritional security to the farmers in rural sectors of the region. Fast dwindling manpower availability for farming sector in this





region, especially due to other temporary alternatives for easy money, appropriate and strategic adoption of farm mechanization has to be viewed as multipronged solution. With ever changing scenario of production and uncertainties involved in the sector, future directions need to be planned meticulously well in advance for sustainable horticulture industry as a whole in the region. Some relevant aspects on the above are discussed in the article with possible solutions for future prospects.

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## PROMISING INSECTICIDAL MOLECULES FROM CASSAVA FOR THE MANAGEMENT OF SUCKING AND BORER PESTS

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Biotic factors like pests and diseases are the most limiting factors retard the production and productivity of agricultural crops. Advent of synthetic insecticides could resolve this crisis to a great extent, nevertheless their indiscriminate use has posed a sharp universal concern, and the resultant ecological disruption has prompted for a global drive to search for safe, economic and viable alternatives to the synthetic pesticides. The century old practice to combat pest menace with plant products is a re-entry in the current pest management strategies. A chemotaxonomic study suggests that as many as 200 species belonging to 110 families of higher plants are cyanogenic. Cassava (*Manihot esculenta* Crantz), a cyanogenic plant cultivated in the tropical and subtropical regions is a staple or subsidiary food for over 500 million people. The insecticidal principles extracted from the leaves and tuber rinds of cassava were proved promising molecule against a spectrum of important borer and sucking insect pests of fruit and tree crops.

Mealybugs are under a strict regulation at foreign trades of agricultural products because they are one of the most economically damaging groups of insects on food crops and ornamental plants. Tubers of yams and aroids on storage for long term are severely infested by sucking pests, particularly by mealy bug, *Rhizoecus amorphae* Betrem. Infestation by this pest depletes the quality and appearance of the tubers, makes it unpalatable and less marketable. Colonies those developed from the crevices and depressions of the tubers make insecticidal treatment ineffective or ineffective. Mealy substance is a protective coat and unless it is removed, no pest can kill the insects. In order to formulate an effective bio pesticide for the management of mealy bugs and other sucking pests, the mealy substance was subjected to chemical analyses and SEM studies. Various solvents like polar to non-polar and organic