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Morphological and Molecular characterization with nutraceutical value of genetically genuine Nanjangud Rasabale (*Syn 'Rasthal' Musa, AAB, Silk sub-group*)

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Banana (*Musa* spp.) is a major fruit of India, which accounts for about 32% of the total fruit production. The 'Nanjangud Rasabale' (NRB) is an elite native variety of banana originated from a place called 'Nanjangud' in Karnataka State. NRB with our survey it has been found that the area of cultivation of this Geographical Indicator banana variety has been shrunked from 10 to 4-5 Acre. It is popular and highly priced fruit in Karnataka and in other states because of its special qualities such as taste, aroma, color, fibrous texture and nutritional content. It has a triploid (AAB) genome and the hybrid origin belongs to *Musa paradisiaca*. The wilt of banana, caused by *Fusarium oxysporum* f.sp. *cubense*, is an important disease on Rasthali group (AAB) of banana. The assessment of genetic diversity of NRB and tracing back its origin of this elite genotypes is required for the rescue of this elite variety. Different types of molecular and biochemical markers will be used for evolutionary and population studies of banana. The DNA will be extracted at different stages of crop rise and these molecular markers are assayed. Same way different biochemical marker also be assayed at different stages of crop rise till physiological maturity of crop. Which provide number and physico-chemical properties of gene and its products. Simple sequence repeats (SSR) markers will be used and for biochemical marker isozymes of catalases, peroxidatse, super oxide dismutase, and NADP peroxidase are used. To revive this Geographical Indicator I have undertaken research for identifying the original variety of NRB and trace back its origin through above said marker. The protein polymorphism of banana reflects the genetic background and its interaction with environment therefore the crop will be sown at different location in Mysore and Hassan region. The expression of alleles coding for different isozymes are more or less independent from the environment; thus, this approach offers a relatively neutral means of determining genetic variation. The main reason of the limited use of isozymes could be the low level of polymorphism found in various plant kingdom. Plant descriptor for this plant type will be made with different morphological and biochemical content characters like carbohydrates, amino acids, proteins and some secondary metabolites will be assayed at different stages of crop rise.

Biography

Arti Karosiya is a young researchers has done her graduation in Agriculture. Masters in Agriculture Biotechnology and extensively worked on Faba bean (*Vicia Faba* L) for her Master's thesis in collaboration with Institute of Hill Bio resources and Technology (IHBT), Council of Scientific and Industrial Research (CSIR), she has worked on molecular diversity of Faba bean. She is a awardee of Jawahar Lal Nehru University (JNU) Department of Biotechnology Govt. of India fellowship. She is also worked with Apotex Pvt.Ltd on dissolution making and HPLC work for pharmaceutical products. She has worked in two Department of Biotechnology and Department of Science and Technology (DBT & DST) project one is RNAi technology in Pepper and second one is on Epigenetics and cell signalling on late blight resistance (Phytophthora) of Poatato (*Solanum tuberosum*) under University of Agricultural Sciences, Bangalore, India as a Senior Research Fellow. She was also part of a Plant Health Clinic of Government of Karnataka with this Biotechnological and Biochemical experiences she has joined for Ph.D in Biotechnology and crop improvement at University of Horticultural Sciences Bagalkot, Bangalore, India. Currently she is pursuing Ph.D with Research on reviving Native Rasthali Banana, NRB (Nanjangud Rasbale) which is extincting due to Panama wilt. She lives in Bangalore, India with husband and eight year old daughter.

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