



Six months Report of ICAR-NRCB

AG-4419

Project entitled
Accelerated Breeding of Better Bananas'

Reporting Period: 1st October 2019 – 31st March 2020



ICAR -National Research Centre for Banana
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General Progress

- *In vitro* polyploidization was initiated by treating with Oryzalin at different concentrations in various explants (Seed, embryo, Embryogenic Cell Suspension and shoot tip) of diploid genome of various BB and AB accessions for chromosome doubling. A total of 711 plantlets obtained from Oryzalin treated Ney Poovan (AB) ECS, seven out were found to be tetraploid, when screened for its ploidy status using Flow Cytometry. Tetraploids confirmed through Flow cytometer, planted during November 2019, were characterized at vegetative stage (3rd month). The side suckers are being multiplied for large scale evaluation of the promising tetraploids.
- The tissue culture propagules of four improved diploids of ICAR-NRCB are ready for sharing and the export will be done after getting the approval of phase II (sub grant agreement with IITA) which is awaiting clearance from Ministry of Agriculture and Farmers Welfare.
- Pisang Awak hybrids are being multiplied for large scale evaluation under hot spot area of *Foc* race 1 and race 4.
- Till date, two batches of IITA hybrids have been received but with unforeseen transit delays, of which six accessions of first batch hybrids were planted under hot spot area for *Foc* race 1 screening.
- In the second batch of IITA hybrids, 10 NARITA hybrids, seven PITA hybrids and two other hybrids, with a total of nineteen hybrids were established in tissue culture and are in various stages of multiplication. After hardening they will be evaluated for yield and *Foc* resistance under hot spot area of *Foc* race1 and TR 4.

Key Deliverable Deviation

- Export of ICAR-NRCB is delayed (as Phase I is completed and Phase II is yet to take off officially) due to getting approval from ICAR-HQ, New Delhi.

- The main reason for delay in getting approval is because of change in the sponsoring agents from Bioversity (sub contract to NRCB) to IITA. Thus it requires many formalities like signing separate MoU with ICAR and IITA as per the guidance issued by Ministry of Agriculture and Farmers Welfare, Govt. of India.

Plans for Next Reporting Period

- Mass multiplication of the second batch of IITA hybrids will be continued and kept ready for field planting at hot spot areas
- ICAR-NRCB developed improved diploids and other progenies (11) will be evaluated at TR4.hot spot area
- First batch of IITA hybrids will be planted under hot spot area against *Foc* TR 4
- Characterization of first batch of IITA hybrids for yield parameters will be taken up.
- ICAR-NRCB developed tetraploids under field evaluation will be characterized at flowering stage.
- Multiplication of hybrids will be continued , upon receipt of the 3rd batch of IITA hybrids,

Risks

- Getting approval from ICAR Head quarters is getting delayed owing to COVID-19 pandemic lockdown.
- Man Power of BBB 1 project are still maintained for smooth progress of the project and salary will be given after signing of the sub grant agreement with IITA.

Sustainability : Too early to report

Scalability : Too early to report

Lessons Learned : Too early to report