

# PARC Saves Banana Industry of Pakistan



Devastation of banana crop by banana bunchy top virus



Healthy plantation of tissue culture banana



Fruit evaluation of introduced high yielding banana cultivars

## Contributors:

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## Challenge

- During early 1990s, an unknown disease observed first time on Banana in coastal areas of Sind. It resulted in reduction of 50% in area and 75% in production.
- Dwarf Cavendish, locally called Basrai, occupying 99% of the area under banana cultivation has low yield potential due to smaller fruit size. It also has short shelf life.
- Monoculture results in narrow genetic base making banana crop prone to new emerging diseases.
- In 2013 another deadly disease emerged and Sindh Govt. again approached PARC to help identify the problem.
- Challenge was to identify and control the disease and to expand the genetic base by introducing new high yielding varieties.

## Interventions

- The government of Sindh requested PARC to identify the problem which compelled banana growers to switch to other crops and suggest solutions.
- PARC responded to the requisition of Sindh Government by constituting a team of scientists to survey the diseased plantations. The team found out that the symptoms resembling Banana Bunchy Top Virus (BBTV) and it was later confirmed through electron microscopy and ELISA.
- In early 1990s, using tissue culture technology, PARC produced virus free plants and provided these to farmers for replacement of infected plantations.
- PARC conducted on-farm field trials of tissue culture banana plants to introduce the technology. Since 1990s, PARC has also executed a series of training courses on tissue culture and biotechnology to help public and private sector produce virus free banana plants.
- In 2009, PARC addressed the problems of low yield and narrow genetic base by multiplying and introducing high yielding banana cultivars.
- PARC again responded to the requisition of Gov't of Sindh by surveying the areas under newly reported disease and confirmed Panama wilt disease of banana ([\*FusariumOxysporum f. sp. cubense\*](#)).

## Outcomes

- PARC's quick response helped banana growers become familiar with BBTV who managed the disease by eradicating the infected plants. Consequently, banana production rose to 140,000 tones.
- During 2009-12, PARC produced 30,000 disease free plants of high yielding banana cultivars through tissue culture technology and evaluated them at many locations in Sindh. A 25% higher yield was obtained.
- As a result of training courses executed by PARC, several tissue culture laboratories emerged on the map of Pakistan in public and private sector.

## Way forward

- Continuous field surveillance for disease identification and management.
- Scale up of disease free plant production and distribution to small growers.
- Development of certification system to ensure the banana quality on sustainable basis.