Eligibility

Researchers/ Teachers in the rank of Assistant Professor equivalent or above in any University are eligible to apply. **Only limited seats are available and based on eligibility candidates will be selected.** Accomodation will be provided at the Guest House of College of Agriculture Vellayani, on request on payment basis. Interested candidates should register in the following link provided

Registration Link :https://forms.gle/LsWf7kWWz5sfkVBe9

Important Dates

Last date for receiving application : 25/02/2023

Intimationofselectionofcandidates:27/02/2023

Confirmation from participants : 28/02/2023

Resource person

Dr. A. Ishwara Bhat
Principal Scientist
Head, Division of Crop Protection
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For more details contact

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REGIONAL AGRICULTURAL RESEARCH STATION, (SOUTHERN ZONE)

VELLAYANI, THIRUVANANTHAPURAM, KERALA AGRICULTURAL UNIVERSITY

WORKSHOP ON

VIRUS INDEXING IN HORTICULTURAL CROPS

(2nd & 3rd March, 2023)

Organisers

Dr. Sreekala G.S.
Assistant Professor,
Department of Plantation Crops and Spices

Dr. Ayisha R
Assistant Professor,
Department of Plant Pathology

Dr. K.N. Anith
Associate Director of Research,
RARS(SZ) Vellayani

About RARS (SZ) Vellayani

The Regional Agricultural Research Station for the Southern Zone of Kerala was established at the College of Agriculture, Vellayani on 30th November, 1981. The research station has developed improved varieties of crops and technologies suited to various locations and is instrumental in dissemination and promotion of proven deliverable technologies to the farmers of the Southern Region of Kerala. The research station is located 12 km away from the Trivandrum city at College of Agriculture, Vellayani surrounded on three sides by the fresh water Vellayani lake. The college is located on the former summer residence of the last Queen of erstwhile Travancore, Maharani Sethu Lakshmi Bayi, the Regent Maharani (1895 – 1985).

About the workshop

Planting material production of horticultural plants are very important to increase production and for that supply of disease free planting materials are of utmost importance. Banana is an important fruit crop of Kerala and is propagated vegetatively. The viral diseases are considered a major concern for banana production because of their effects on yield and quality as well as limitations to germplasm exchange. The economically most important viruses infecting banana are *Banana bunchy top virus* (BBTV), *Banana streak virus* (BSV), *Banana bract mosaic virus* (BBrMV) and *Cucumber mosaic virus* (CMV). Among these, BBTV and BSV are major threats for banana production. BSV exist as episomal and endogenous forms and more widely spread worldwide than BBTV, though BBTV is so far most economically damaging virus contributing to a yield reduction of up to 100 %. Due to lack of durable virus resistance in the *Musa spp*., measures such as phytosanitation, use of virus free planting material, strict regulation on movement of infected planting materials are effective means to control viral diseases in banana. Hence it is necessary to screen the planting material of banana from virus for establishing virus free banana plants.

Kerala is known as the homeland of spices. Production of disease free planting material of spices is important to improve spice production. Black pepper and small cardamom are the important spice crops grown in India. *Cucumber mosaic virus* (CMV) and *Piper yellow mottle virus* (PYMoV) are associated with the viral Stunt disease in black pepper while *Cardamom mosaic virus* (CdMV) causing katte disease is one of the major production constraints of small cardamom. PCR and RT- PCR methods were reported for the detection of PYMoV and CMV infections while ELISA and RT-PCR techniques can be used for the detection and diagnosis of CdMV.

Among the various viral genome based indexing methods such as RT-PCR, Multiplex PCR, immuno-capture PCR, Recombinase Polymerase Amplification (RPA) is becoming an important technique for the rapid, sensitive and cost effective detection of plant viruses. RPA is becoming a promising tool for use in rapid detection and further diagnostics in plant clinics and monitoring quarantine services.This technique requires limited laboratory facilities as it is isothermal amplification, demands less time and hence can improve the diagnosis of plant viruses.

Virus indexing using serological and molecular techniques helps in production of virus free quality planting materials of horticultural crops. The two day workshop on virus indexing in horticultural crops is intended to train the participants to detect and screen the presence of virus in the mother plants of horticultural crops for production of planting materials free of viruses.

PROGRAMME SCHEDULE

Day one- 2 / 3 / 2023

- **Inauguration** - 9.00 am - 10.00 am
- **Technical session 1** - 10.00 am - 12.00 am
  Recent trends in detection and diagnosis of viral diseases in horticultural crops
- **Practical session 1** - 12.30 pm -1.30 pm
  Hands on training in Recombinase Polymerase Amplification (RPA)
- **Practical session 2** - 2.00 pm - 3.00 pm RPA continuation
- **Technical session 2** - 3.00 pm – 4.00 pm
  Serological based detection of viral diseases
- **Practical session 2** - 4.00 pm-5.00 pm
  Preparation of buffers and solutions for ELISA

Day two- 3 / 3 / 23

- **Technical session 3** - 9.00 am - 10.00 am
  PCR based viral detection
- **Practical session 3** - 10.00 am - 5.00 pm
  Hands on training on ELISA and PCR based detection