

**Proceedings of Second Annual Review Meeting of
Outreach project on *Phytophthora*, *Fusarium* and *Ralstonia* diseases of horticultural and field
crops at Indian Institute of Spices Research Calicut on 17-18 February 2011**

The sessions were chaired by Dr. B.P. Singh, Director, CPRI, Shimla and Dr. M. Anandaraj, National Coordinator & Project Coordinator (Spices). Reports of the work carried out by all the centres were presented by the respective PIs/Co-PIs. The general as well as specific recommendations/decisions pertaining to each centre are given below.

SESSION I – PHYTOPHTHORA

Rapporteurs: Dr. M.L. Jeeva & Dr. Santhosh J. Eapen

1. Reasons for location wise variation in metalaxyl resistance may be included in the *Phytophthora* database (CPRI, Shimla)
2. Use of *P.aeruginosa* to be discouraged and other promising isolates of *Bacillus* spp. to be given priority (CPRI, Shimla)
3. Only registered agrochemicals to be used for testing. Information on active ingredient of the promising bio-pesticide 'Biofight' may be collected (CTCRI, Trivandrum).
4. Proteomics studies may be initiated in collaboration with other ICAR institutes, in place of SDS-PAGE (CTCRI, Trivandrum)
5. Molecular works to be completed in collaboration with centres like IISR/CPRI (YSPUHF, Kullu).
6. Resistant root stocks may be evaluated in hot spots or sick plots (YSPUHF, Kullu).
7. Based on the available results, IDM package for collar rot of apple may be finalized and tested in hotspots/sick plots at different locations (YSPUHF, Kullu).
8. Variability in *Phytophthoras* available in North East region to be critically examined through sequencing of ITS regions (ICAR RC NEH, Umam)
9. Markers being developed to locate resistance may be utilized for MAS of resistant plants (NRC Citrus, Nagpur).
10. Non pathogenic *Fusariums* may be checked for their pathogenicity at various PhytoFuRa/AICRP Biocontrol centres (NBAll, Bangalore).
11. ISR inducing *Trichodermas* to be tested against other foliar pathogens of tomato and potato (NBAll, Bangalore).
12. Feasibility of developing markers for pathogenic forms may be studied by using non pathogenic forms (NBAll, Bangalore)
13. The field resistant cocoa line may be evaluated at different locations (CPCRI, Kasaragod).
14. ITS-PCR of various *Phytophthora* isolates may be carried out with the help of IISR, Calicut (CPCRI, Kasaragod).

SESSION II – FUSARIUM

Rapporteurs: Dr. B.M. Pandey & Dr.D. Prasath

1. Research on guava wilt may also concentrate on succession of pathogens , incubation period and the possible role of oomycete pathogens initiating the feeder root damage (CISH, Lucknow).
2. As far as possible natural conditions may be simulated for screening in guava (CISH, Lucknow)
3. Genetics/inheritance of disease resistance may be worked out for different crosses between wild and cultivated species (DOR, Hyderabad)

4. Identification of technical compounds in the botanicals responsible for disease resistance need to be given priority (IIVR, Varanasi)
5. The research work may be restricted to identified technical programme (NRCB, Trichy)
6. The cultures and DNA deposited from various centres need to be assigned with accession numbers at the earliest (NBAIM, Mau).

Session III – RALSTONIA

Rapporteurs: Dr. R. Ramesh & Dr.D. Prasath

1. Isolates of *Ralstonia* from north east region may be collected before the end of this season (ICAR RC, Umiam).
2. *R. solanacearum* biovar 4 strains to be provided to IISR, Calicut for comparison (IARI, New Delhi)
3. Bacterial wilt resistant tomato sources to be used in studying the mechanism of resistance (IARI, New Delhi)
4. Bleaching powder experiment may be justified with supporting data on the effects on other non target soil microflora (IARI, New Delhi)
5. Mechanism of resistance in brinjal needs to be studied. For transcriptomics studies other ICAR centers may be approached or funds may be availed to create facilities (ICAR RC, Goa).
6. Cross infectivity of *R. solanacearum* across the crops to be studied with a set of selected isolates (All the centers)
7. Characterization of *R. solanacearum* should be taken up with uniform methodologies and techniques. Those who don't have facilities may utilize the facilities available in other centers or submit cultures (All the centers)
8. Studies on horizontal gene transfer in *R. solanacearum* may be taken up (IIHR, Bangalore/ ICAR RC, Goa/ IARI, New Delhi)

General

1. Along with culture repository, a DNA bank of *Phytophthora* and *Ralstonia* needs to be set up (IISR, Calicut).
2. Attempts may be made to link the data on diversity analysis with virulence/pathogenicity.
3. Whole genome sequencing of *P.capsici* is in progress. It is planned to undertake the annotation of the genome in a community mode. Interested PhytoFuRa workers may join this prestigious project.
4. All the pot culture and field experimental results need to be statistically analyzed and presented.
5. Expertise/facilities available in the following areas at various institutes may be availed by the PhytoFuRa centres
 - i. RNAi mediated gene silencing – CPRI, Shimla
 - ii. Microarray – IIHR, Bangalore
 - iii. Proteomics – SBI, Coimbatore
 - iv. BIOLOG Microbial identification and Bioinformatics – IISR, Calicut