

Proceedings of the Fifth Annual Review Meeting of the Outreach Project on *Phytophthora*, *Fusarium* and *Ralstonia* Diseases of Horticultural and Field Crops held on 18 March 2015 at ICAR-IISR, Kozhikode

The fifth Annual Review Meeting of the PhytoFuRa Project was held on 18 March 2015 at ICAR-IISR, Kozhikode. The meeting was inaugurated by Dr. Y.R. Sarma, Former Director, ICAR-IISR & FAO Consultant and Dr. B. P. Singh, Director, ICAR-CPRI, Shimla presided over. Dr. M. Anandaraj, National Coordinator presented the salient achievements made during 2014-15. Dr. S. Devasahayam, Head, Division of Crop Protection welcomed the gathering and Dr. K. Nirmal Babu, Project Coordinator proposed the vote of thanks. This was followed by various technical sessions.

The session on *Phytophthora* was chaired by Dr. Y.R. Sarma and Dr. B.P. Singh. Dr. Sundaresha (CPRI, Shimla) and Dr. R. Suseela Bhai (IISR, Kozhikode) served as rapporteurs. Excluding ICAR RC for NEHR, eight centers have presented their progress reports. The major recommendations are:

1. Since many species of *Phytophthora* have been reported from citrus, the pathogenic behavior of these species may be studied to see whether there is any shift in population. (Action: CCRI, Nagpur)
2. For convincing the farmers, a non-destructive technology to assess the health of the root system of planting materials may be developed. (Action: CCRI, Nagpur)
3. A few chemicals like strobilurin should be short-listed and recommended as effective against bud rot of coconut/arecanut. (Action: CPCRI, Kasaragod)
4. Replication wise data of 'multi-location evaluation of *Trichoderma*' may be handed over to IISR for further data analysis. (Action: CPCRI, Kasaragod)
5. A few cultures of *P. infestans* may be deposited in the National Repository of Phytophthora at IISR. (Action: CPRI, Shimla)
6. As there is no breeding programme in colocasia, less priority may be given for gene expression and RGA studies (Action: CTCRI, Thiruvananthapuram)

The second session on *Fusarium* was chaired by Dr. Y.R. Sarma and Dr. R.D. Prasad, Principal Scientist, DOR, Hyderabad. The proceedings were recorded by Dr. K. Anjani (DOR, Hyderabad) and Dr. S. Sriram (IIHR, Bengaluru). Except for NRC Banana, Trichy all the other centers presented their progress reports and the important decisions taken are:

1. More emphasis will be given for studying pathogen variability in virulence compared to other parameters of diversity analyses. (Action: IARI, New Delhi).
2. The pathogenicity tests should precede the screening of host varieties using fusaric acid. (Action: IIHR, Bengaluru)
3. Emphasis needs to be given to sort out the etiology of guava wilt. (Action: IIHR, Bengaluru)

4. The grafting technique for raising wilt resistant seedlings using resistant root stocks may be popularized by transferring the technology to centres. (Action: IIVR, Varanasi)
5. Use of bioagents for seed spices may be disseminated by taking the help of AICRP centres and other programmes. (Action: NRC Seed Spices, Ajmer)
6. The progress of *Fusarium* infection at different stages of sugarcane growth may be recorded. (Action: SBI, Coimbatore)
7. Higher TA grants will be considered for the DOR Centre in the next release for undertaking field evaluation of wilt resistant lines in safflower (Action: Network Coordinator, PhytoFuRa)

The last session on *Ralstonia* was chaired by Dr. Y.R. Sarma and Dr. M. Anandaraj. Dr. R. Ramesh (CCARI, Goa) and Dr. D. Prasath (IISR, Kozhikode) recorded the proceedings. Major decisions that emerged out of the session are:

1. All the centres need to submit the WGS data of *R. solanacearum* to IISR, Kozhikode for comparative genomics study (Action: PIs of IIHR, CPRI, CCARI, IARI and IISR).
2. The brinjal grafting technique to control bacterial wilt need to be popularized (Action: ICAR RC for NEHR and IIVR, Varanasi).
3. The integrated disease management strategy developed by IIHR for bacterial wilt control in tomato may be fine-tuned and popularized (Action: IIHR, Bengaluru)

Some of the general decisions taken during the course of the review meeting are given below:

1. The absence of some of the PIs was viewed seriously and it was decided that the PIs should ensure the presence of at least one of the Co-PI in the review meeting if the PI is unable attend.
2. Representative cultures of all three pathogens should be maintained at the concerned lead centers. (Action: IISR, Kozhikode & NBAIM, Mau)
3. As the project is in the last phase of its operation, all the centers may intensify their works on management aspects.
4. Biosafety guidelines have to be strictly followed wherever transformation studies are taken up.
5. Leads obtained in biological control have to be pursued by taking up national level validation.
6. Technical bulletins on major technologies developed under the project may be brought out.
7. A formal proposal for evaluation of carbendazim tolerant *Trichoderma* formulations at different centers may be sent to Network Coordinator (Action: IIHR, Bengaluru).

The meeting came to a close with the concluding remarks of both the chairpersons and vote of thanks by Dr. Santhosh J. Eapen, Principal Scientist, IISR, Kozhikode.