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24TH BIENNIAL INTERNATIONAL PLANT RESISTANCE TO INSECTS WORKSHOP

The 24th The 24th Biennial International Plant Resistance to Insects (IPRI) workshop was held at CIMMYT headquarters in Texcoco, Mexico 2-4 March 2020. Some 45 participants from 12 countries attended this meeting. Four sessions were organized in this workshop covering phenotyping for resistance to pests, breeding for insect's resistance, plant-arthropod interactions and mechanisms of resistance.



There is no doubt that there have been excellent advances made in basic sciences and understanding of host plant resistance to insect pests. However, the use of the identified sources of

resistance by breeders is still low compared to breeding for diseases resistance. Part of this could be due to the difficulties in carrying out large-scale phenotyping for resistance to pests. For pests with multiple generations per year, facultative diapause and easy to rear, phenotyping of large germplasm for resistance to pests could be handled in greenhouses under artificial infestation. However, for pests with one generation per year and obligatory diapause, phenotyping for resistance is done mainly in the field under natural infestation. Under these conditions, climate variability becomes an important factor which influences the reliability and repeatability of phenotyping results. Thus, assessing genetic resources and breeding lines for resistance to pests under these field conditions would require at least 2-3 years. For this kind of pests, and in order to speed up the process of breeding for resistance, probably the way forward would be the use of molecular markers.

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INTERNATIONAL SEMINAR ON TRANSBOUNDARY PEST MANAGEMENT

The spread of invasive species causes significant economic, social, and environmental losses throughout the world. To address the problem through a range of efforts – including integrated pest management, development of trade mechanisms to reduce risk of invasive pest entry, and more – the Entomological Society of India (ESI) and Tamil Nadu Agricultural University (TNAU) hosted a symposium in March 2020 in Coimbatore, India. The Feed the Future Innovation Lab for Integrated Pest Management attended the symposium, which was inaugurated by S.K. Malhotra, Agricultural Commissioner, Government of India, S.N. Puri, President, Entomological Society of India, and N. Kumar, Vice Chancellor, TNAU.



The general topics covered included impact of invasive species on biodiversity; role of

biosystematics, surveys, forecasting and collaboration; the need for improvements in quarantine regulations and implementation; management of invasive species with special emphasis on biological control; integrated pest management; and involvement of biotechnology and nanotechnology approaches. Specific topics addressed were invasive weeds, whiteflies, fruit flies, locust, fall armyworm, rugose spiraling whitefly, termites, *Tuta absoluta*, serpentine leafminer, ambrosia beetle, western flower thrips, coconut eriophyid mite, and others. Special sessions were arranged for graduate student presentations and posters. IPM Innovation Lab Director Muni Muniappan presented a paper on “Transboundary Pests and their Management on a Global Scale.”

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EUROPEAN RESEARCH INITIATIVE “TOWARDS A CHEMICAL PESTICIDE-FREE AGRICULTURE” LAUNCHED

On February 23rd the research initiative “Towards a chemical pesticide-free agriculture” has been launched at the Paris International Agricultural Show. The initiative is a contribution to the Green Deal of the European Commission. What are the reason and the aim of the initiative? There is a strong demand from public authorities and society in general, all over Europe in order to minimize the use of chemical pesticides. To face a challenge of this magnitude the road map “Towards a Chemical Pesticide-free Agriculture” aims to re-think the way research is carried out and develop new common research and experimentation strategies, not just at a national level, but throughout the whole continent. Twenty-four research organizations from 16 European countries signed the declaration. Driven by the French National Research Institute for Agriculture, Food and Environment (INRAE) and the German Federal Research Centre for Cultivated Plants (JKI) and the German Leibniz Centre for Agricultural Landscape Research (ZALF) this endeavor has brought the European research community together around this ambitious vision of an agriculture free of chemical pesticides.

For almost 18 months, INRAE and its German partners from the JKI and the ZALF have been building a dialogue among European researchers and stakeholders with the purpose of setting a common research strategy. Their objective was ambitious: to define a new transdisciplinary and multi-stakeholder research strategy that will allow them to offer solutions for the transition towards a chemical pesticide-free agriculture all around the continent. The measures announced involve multiple sectors—agriculture, food, and the environment—with the objective of developing a sustainable agriculture and producing healthy food, while maintaining productive and economically sound agrifood systems.

Through their network, the 24 signatory organizations have already drawn up multiple common research avenues, such as establishing a better use of agro ecological principles to develop disease resistant production systems, exploiting the high potential of plant breeding, developing the use of new technologies and agro-equipment’s, and understanding the levers and obstacles of the socio-economic transition, among others. The new methods must reinforce the links between

science and research and the experimentation process, both in the lab and in the field. The goal is an open science system, in which researchers work closely together with farmers to implement changes promptly, sharing their work and its results all over the continent, including all types of agriculture, and integrating the variety of climates and soils in order to test the alternative solutions at a bigger scale.

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IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described in the IAPPS Web Site www.plantprotection.org.

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