IAPPS NEWSLETTER

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WELCOME TO OUR NEW GOVERNING BOARD MEMBER

The IAPPS Executive Committee has selected Dr. Hari C. Sharma to fill the vacant Region VI, South Asia Coordinator position on the IAPPS Governing Board. Dr. Sharma is currently Principal Scientist (entomology) and Project Coordinator at ICRISAT, Hyderabad, India. Dr Sharma's scientific contributions are in the areas of insect bio-ecology and population dynamics, economic thresholds, natural plant products, host-plant resistance, transgenics and molecular assisted selection for insect resistance, effect of transgenic crops on non-target organisms, and natural enemies for integrated pest management. Several lines with resistance to insects have been identified/developed in sorghum, chickpea, pigeonpea, soybean, and cotton, and these lines have been used in crop improvement programs in Asia, Africa, USA and Australia. IPM modules for pest management in sorghum, chickpea, and pigeonpea have been developed under his guidance, for use in sustainable crop production systems. Extensive information has been generated on the effects of transgenic crops on the non-target organisms, which is crucial to develop strategies for deployment of transgenic crops for pest management. He has published extensively producing 303 publications. Among his numerous awards for his work are the CGIAR Excellence in Science Award and the prestigious King Baudouin Award.
We look forward to working with Hari in promoting IAPPS in the South Asia Region. Please join us in congratulating Hari and welcoming him to IAPPS.

Dr. E. A. "Short" Heinrichs
IAPPS Secretary General
E-mail: eheinric@vt.edu

IPM INCLUDES THE USE OF PESTICIDES

In the discussions at the recent Global IPM Forum reported in the last (December 2008) issue of the IAPPS newsletter there was no reference to improved and more rational use of pesticides, where these are needed. The report mentions surveillance to predict outbreaks, but the reality is that farmers would also need to use a pesticide in certain circumstances, e.g. if the damage threshold is attained. The importance of rational use of pesticides should be recognized by any IPM practitioner growing crops for an optimum economic yield. In Europe there is currently considerable concern about the review of the Directive 91/414 due to proposals to change from a risk assessment to whether or not products present a hazard to human health. This proposed change is predicted to cause a major reduction in the availability of many pesticides and if implemented this would result in arable crop production declining by up to 30%. In some cases it would no longer be cost effective to grow certain crops without these pesticides. Thus in a time of growing populations and greater demand for good quality food, it is clearly essential to include safe use of pesticides in an IPM program.
Farmers are now able to grow GM crops in some parts of the world, but at present these are either based on herbicide resistance and thus are designed for specific herbicides to be applied, or they provide tolerance to certain insect groups. In the latter case, conventional plant breeding is also crucial to provide at least some resistance to other pests. Where Bt cotton is grown in Africa, a pubescent variety is needed for jassid resistance. In India, farmers have unfortunately sprayed Bt cotton with the least expensive broad spectrum insecticides to control sucking pests. The results have been disastrous, as mealybugs have infested the cotton fields in the absence of their natural enemies. Farmers therefore need proper advice and training so that IPM programs can use appropriate pesticides if and when necessary. Research is needed to formulate that advice, but unfortunately many governments have not given adequate recognition of the importance of agricultural research nor have they given extension services due recognition. Web based instruction will become more important but where help is needed - mostly in Africa - we are still to see greater extension of broad band with more and better access to computers in rural areas, and this will need to be reinforced by practical training.

Prof. Graham Matthews
IPARC

Imperial College
Ascot. SL5 7PY, UK
E-mail: g.matthews@imperial.ac.uk

PAPAYA MEALYBUG, A NEW INVADER IN ASIA

Papaya mealybug, *Paracoccus marginatus* (Hemiptera: Pseudococcidae) is native to Mexico. It was first described by Williams and Granara de Willink in 1992 from specimens collected on cassava. It was first reported as a pest of papaya in St. Martin Island in the Caribbean in1995 and by 2000 it had spread to 13 countries in the Caribbean, Florida in the U.S. and three countries each in Central and South America. In early 2002, it was observed in the island of Guam in the Pacific and subsequently in Palau in 2003, Hawaiian Islands (Maui, 2004, Oahu, 2005, Hawaii, 2006) and Tinian in the Mariana Islands (2005).

While visiting the Bogor, Indonesia Botanical Gardens on May 29, 2008, the IPM CRSP team consisting of Robert Hedlund, R. Muniappan, Mike Hammig, Merle Shepard, Gerry Carner and Aunu Rauf collected specimens of a mealybug infesting a papaya tree. Gillian Watson, a specialist of mealybug taxonomy at the California Department of Agriculture, identified it as papaya mealy bug upon examination of specimens preserved in alcohol. This is the first report of occurrence of papaya mealybug in Indonesia and in Southeast Asia.

While visiting Tamil Nadu Agricultural University at Coimbatore on July 10, 2008, one of the partners of the IPM CRSP in India, an entomologist, showed Muniappan some papaya trees infested with mealybug in the campus orchard. Immediately he recognized it as papaya mealybug and also got it confirmed by Gillian Watson. This is the first report of the papaya mealybug in India and South Asia Adult females of this mealybug are yellow in color covered by a white waxy secretion and specimens in alcohol turn bluish black. This mealybug has a wide host range of over 60 species of plants including cassava, papaya, beans, eggplant, melons, hisbiscus, plumeria, pepper, sweet potato, tomato, citrus, mango and sour sop. On papaya plants the mealybug infests all parts of the young leaves and fruits, and mostly along the veins and midrib of the older leaves. Young leaves become crinkly and older leaves will turn yellow and dry up prematurely. Terminal shoots become bunchy and distorted. Affected trees will start to drop flowers and young fruits. Honey dew produced by the mealybug will turn into a thick sooty mold growth on all affected plants. High mealybug populations can kill the papaya plants.

Currently scientists at the Bogor Agricultural University in Indonesia are conducting surveys to assess the extent of spread of this mealybug, its associated natural enemies and the plant species infested by it. An entomophagous fungus was observed in one of the samples of the mealybug collected at the Botanical Gardens.

The accidental introduction of the papaya mealybug to Indonesia and India will likely result in a serious economic threat to the agricultural industry as it attacks and destroys fruit and vegetable crops as well as ornamental plants unless adequate control tactics are implemented.

The USDA/APHIS developed a biological control program to tackle this pest when it became a threat to the horticultural industry in Florida, and identified three parasitoids which are being reared in Puerto Rico in order to supply to the countries in need. This biological control program has been successfully implemented in Florida, Caribbean Islands, countries in South America, Guam and Palau. Currently it is being implemented in the Hawaiian Islands and Tinian in the Mariana Islands. The Indian government is considering importing these natural enemies for release in Tamil Nadu.

It is possible that the papaya mealybug might have established in other countries in South and Southeast Asia. It would be advisable for scientists in the countries of these regions to look out for the incidence of this invasive pest. IPM CRSP can provide further advice for identification and control of this pest. **Dr. R. Muniappan**
Program Director
IPM CRSP, Virginia Tech
Blacksburg, VA 24061-0334, USA
E-mail: ipm-dir@vt.edu

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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 a the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described **here**.

The *IAPPS Newsletter* welcomes news, letters, and other items of interest from individuals and organizations. Address correspondence and information to:

Dr. Manuele Tamo, Editor
IAPPS Newsletter
Biological Control Center for Africa, IITA-Benin
08 B.P. 0932 Tri Postal, Cotonou, Republic of Benin
E-mail: m.tamo@cgiar.org