



# IAPPS NEWSLETTER

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## NEW APPOINTMENT FOR PROF. BESRI



Prof. Mohamed Besri, IAPPS Governing Board member and IAPPS Coordinator for Region II (North Africa/Middle East) has recently been appointed as co chair of the Methyl Bromide Technical Option Committee (MBTOC) during the 17th Meeting of the Parties (MOP) in Dakar.

The Methyl Bromide Technical Options Committee (MBTOC) was established by the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer to identify existing and potential alternatives to methyl bromide (MB). This Committee, in particular, addresses the technical feasibility of chemical and non-chemical alternatives for the current uses of MB, apart from its use as a chemical feedstock. MBTOC reports to the Technology and Economic Assessment Panel (TEAP) which advises the Parties on scientific, technical and economic matters related to the control of ozone depleting substances and their alternatives. MBTOC members have expertise in the uses of MB and its alternatives. At the moment MBTOC has 32 members from developing and developed countries. The committee is chaired by 4 co chairs, two from article 5 countries (developing countries) : Marta Pizano (Columbia ) and Mohamed Besri (Morocco) and two from non article 5 countries (developed countries): Michelle Marcotte (Canada) and Ian Porter (Australia).

On behalf of the IAPPS family, I wish to congratulate Mohamed for this outstanding achievement.

### Dr. E.A. "Short" Heinrichs

Secretary General, IAPPS

IPM CRSP Consultant

E-mail: [ehenric@unlnotes.unl.edu](mailto:ehenric@unlnotes.unl.edu)

## ANNOUNCEMENT: WEED MANAGEMENT CONFERENCE



The Weed Science Society of Israel, The Hebrew University of Jerusalem and the Agricultural Research Organization are cordially inviting you to participate in the International Conference on: *Novel And Sustainable Weed Management In Arid And Semi-Arid Agro-Ecosystems* which will take place at Hebrew University of Jerusalem, Faculty of Agricultural, Food and Environmental Quality Sciences, Rehovot, Israel, 15 - 21 October 2006.

We are pleased to invite you to the special International Conference that will emphasize weeds and weed management issues prevailing in the Mediterranean region and other arid and semi-arid climate countries. The aim of the conference is to gather a forum for weed scientists involved in research on all special aspects of weed management in arid and semi-arid agriculture, especially in the Mediterranean region. The official language of the conference is English. This is the first announcement, for more information please contact the Organizing Committee at: [wgarid@agri.huji.ac.il](mailto:wgarid@agri.huji.ac.il) or visit: <http://www.agri.huji.ac.il/aridconference>

### Prof. Baruch Rubin

J. & R. Liss Professor of Weed Sci. & Agronomy

Hebrew University of Jerusalem,

Rehovot 76100, Israel

E-mail: [rubin@agri.huji.ac.il](mailto:rubin@agri.huji.ac.il)

## IMPLEMENTING PHEROMONE TRAP TECHNOLOGIES FOR COWPEA FARMERS IN WEST AFRICA

Cowpea is a vital grain legume crop in West Africa, where it is grown mostly by subsistence farmers and provides a cheap source of dietary protein for low-income populations. *Maruca vitrata*, the legume podborer, is a key pest. The larvae attack flower buds, flowers and young pods and yield losses range up to 80%. Conventional insecticides can

control the pest, but expense often limits their use by poor farmers. Elsewhere, over-use of insecticides not recommended for use on cowpea (e.g. in Benin farmers often use subsidised cotton insecticides) is leading to increasing health and environmental hazards. Thus the development of a technology which can predict the occurrence of the pest, thereby assisting farmers to decide when and where to target their insecticides, represents a significant advance.



With funding from the UK's Department for International Development (DFID), a team of researchers from the Natural Resources Institute, UK and the International Institute of Tropical Agriculture in Benin have developed pheromone traps for detecting the appearance of *M. vitrata* in cowpea fields. Working with NGOs and national agricultural research centres in Benin, Ghana and Burkina Faso the team has developed a practical approach whereby six or more farmers within a village operate traps in cowpea fields from the beginning of the season. Farmers share information about captures and when the threshold of an average catch of two moths per trap is reached, spraying within three days is then advised. Farmers decide the best control agent to apply in their fields - botanical or conventional pesticide - and exactly when to apply it, taking account of the overall pest situation.

The first step to developing the traps had been to identify the sex pheromone of *M. vitrata* and develop the necessary attractant lures for traps. Although studies by other researchers in the late 90s identified one component of the pheromone no field testing had been carried out. Analytical and bioassay studies in the NRI labs confirmed this and found two other minor components. Field trapping experiments commenced in 1998 at IITA in Benin and clearly indicated that a three component pheromone blend provided optimal attraction of male *M. vitrata* moths. This was the first time a synthetic pheromone blend had been identified that was more attractive to male *M. vitrata* than virgin female moths under field conditions.

To minimize eventual costs to farmers the team sought to develop traps which could be made locally, by farmers if necessary. Several different designs were evaluated and a locally fabricated water-trap - made by cutting out the sides of a five liter plastic jerry-can - was found to be superior to imported, commercial trap designs. Moths entering the jerry-can trap are killed by drowning in the water placed inside.

The type and cost of the attractant lures is also an important practical issue so factors such as oxidation, isomeric purity and longevity of the pheromone compounds were all investigated. Results showed that shielding of lures from sunlight was unnecessary, attraction to even low-purity lures was possible and 0.1 mg polyethylene vial lures remained effective for up to four weeks under field conditions. All these findings simplified and cheapened the potential cost of lure manufacture and use. Lures are now supplied by a small company in the UK.

For utilization of the traps to be possible practically, demonstration of some consistent relationship between trap-catches of adults and the incidence of larval attack in cowpea fields was necessary. So trap catches and larval infestations were monitored in un-sprayed farmers' fields; these quickly showed that for fields sown around the same time, moth captures typically precede larval infestations by several days enabling farmers to determine when they might need to spray. An additional finding was that a possible alternative predictive measure, that of the appearance of flowers in the crop, tended to give a much shorter warning period of infestations than initial trap captures. Based on these findings, since 2002, empirical testing through on-station trials and farmer field schools (FFS) involving 500 farmers in 26 different villages has gradually evolved the trap-based threshold approach for determining spray timing mentioned above. FFSs operated mainly under the auspices of project partners GOAN and CRI in Ghana and OBEPAB and INRAB in Benin (the latter in association with the IITA-managed *Projet de Niébé pour l'Afrique*). Positive outcomes include:

- Use of traps combined with different insecticides to determine spray timing can be at least as good as normal farmer practices in terms of yield and *M. vitrata* infestation;
- Among farmers with experience of the traps, more than 90% believe traps can help to control *M. vitrata* and on average they are willing to pay US\$ 5 - 6 for the traps and lures, which compares with previously estimated costs of fabrication, installation and maintenance for a cropping season of around \$5;
- Traps only account for an estimated 4% of the total production costs.

We hope and expect that farmers will wish to continue using the *M. vitrata* pheromone traps. The challenge is to find long-term, sustainable method of supplying the traps and lures. In the short-term farmers can fabricate traps themselves and a possible supply route for the lures could be through one or more of the project's institutional partners, following purchase from the UK supplier. However, project surveys indicate that in the longer-term farmers wish to purchase traps, lures and botanical pesticides through local, existing agricultural input providers. The farmers who have participated in the project could form the initial, core market for these providers with future expansion if the technology is taken up more widely.

For more information:

**Dr. Mark Downham**

NRI, Chatham, UK

E-mail: [m.c.a.downham@gre.ac.uk](mailto:m.c.a.downham@gre.ac.uk)

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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](mailto:m.tamo@cgiar.org)**