

Issue 11

September, 2006

[Subscribe](#) | [Unsubscribe](#)

In this Issue:

Introduction to eConnection
IRAC News
Resistance News
Conferences and Symposia

Introduction to eConnection

▪ eConnection Update

Welcome to the eleventh issue of IRAC eConnection, which covers activities over the last 6 months. IRAC International and the Country Committees have been busy on various IRM initiatives as well as representing IRAC at a number of international conferences. Details are covered briefly in this eConnection but further information can be found on the website. [See the site »](#)

A few of you have reported problems with the formatting of the eConnection when received by email. We have now re-coded the page to improve this but if you are still having difficulties we have also included links to html and pdf version at the top of the page and these can be opened up within your browser. Remember to update your details if your email address changes and you want to continue to receive copies of the newsletter. You can do this using the links above by "unsubscribing" your old address and "subscribing" with your new address.

We are always pleased to receive your feedback so keep it coming. As always past issues of eConnection can be located on the website under the heading "About IRAC" or via [this link](#).

▪ Send us your feedback and News

If you have Resistance Management information that you think should appear on the IRAC website or eConnection please contact us with details. For IRAC Country Groups and Teams around the world please send updates on your activities, meeting minutes etc. for inclusion in the relevant areas of the IRAC website. [Email aporter@intraspin.com](mailto:aporter@intraspin.com).

IRAC News

▪ IRAC International

IRAC held their 41st International meeting this year in Edinburgh. All the member companies were represented and included participation from IRAC Spain. Conference calls were received from C. Verschueren DG of CropLife International, K. Aultman from the Gates Foundation who is a member of the new IRAC Public Health Team and N. Storer of Dow AgroSciences who leads the new IRAC Biotechnology Team.

The participants heard from IRAC Chairman, Alan McCaffery of Syngenta how it had been one of IRAC's most successful and productive years with the profile of IRAC and the importance of IRM significantly raised during the year. Full reports were heard from the Functional, Expert and Country Groups and objectives and goals were set for the coming year.

▪ IRAC Public Health Team

The newly formed Public Health Team held their first face-to-face meeting at the WHO headquarters in Geneva. It was well attended by representatives from the member companies as well as K. Aultman from the Gates Foundation and

observers from WHO.

The main focus of the meeting was to finalise the text of a new publication: Prevention and Management of Insecticide Resistance in Vectors and Pests of Public Health Importance. This is due to be printed and issued towards the end of the year. In addition the Team heard various presentations outlining the problems and issues relating to IRM in vectors and identified some key actions and objectives for the coming year.

▪ **IRAC US**

The US group are planning a Symposium at the 2006 ESA meeting in Indianapolis titled a Review of the current status of IRM Programs - Conventional Insecticides & Biotech. This follows on from the successful Symposium at the 2005 ESA. The presentations from the 2005 symposium are now available on the IRAC website.

▪ **IRAC India**

The International Committee has agreed to provide some limited financial support to IRAC India to help with their IRM education programme on Brown Planthopper in rice. The funds will go towards the distribution of a 4 page rice BPH management bulletin along with 2 training programmes to key stakeholders. Updates have been promised by IRAC India and these will appear in future issues of eConnection.

Resistance News

▪ **Stewardship of neonicotinoids: A project to support proactive IRM for a key group of aphicides**

The neonicotinoids provide excellent control of *M. persicae* but concerns were raised in response to the continued expansion and diversification of neonicotinoid use in the UK. Many of the target crops including oilseed rape, brassicas, sugar beet and potatoes are hosts for *M. persicae* and there thus exists the potential for sequential selection of the insects throughout the growing season.

The Department for Environment, Food and Rural Affairs (DEFRA) in the UK is funding a Sustainable Arable LINK programme project in conjunction with industrial partners the British Potato Council, the British Beet Research Organisation, Bayer CropScience and Syngenta. The project is coordinated by Rothamsted Research, with major field inputs from ADAS and regulatory aspects are addressed by DEFRA Pesticide Safety Directorate.

The study, now in its third year and due to finish in March 2007 has four main objectives: (1) A detailed characterisation of *M. persicae* clones already showing some variation in response to neonicotinoids, (2) Structured monitoring of field populations, (3) A study of operational factors influencing the expression and selection of resistance and (4) The development and dissemination of resistance management recommendations.

Laboratory resistant clones show a consistent pattern of cross-resistance across all the neonicotinoids tested. It is not known what mechanism underlies the significant variation between clones, but it must confer a broad reduction in susceptibility to all the neonicotinoids tested. In some populations in the field there have been slight reductions in sensitivity to neonicotinoids in recent years, but to date there is no clear indication of any significant resistance in the UK capable of causing control failures. Further work this summer will clarify the situation. Detailed studies of the selection process are being investigated in field simulators, and will conclude this year. Already the level of perceived risk of resistance is influencing the use patterns of newly registered neonicotinoid insecticides in the UK and this will increasingly be the case as this proactive study meets the challenge of tackling a potential resistance problem.

[The full article along with references is available on the IRAC website.](#)

▪ **How much do natural refuges mitigate resistance risks**

Genetically-modified crops producing insecticidal proteins from *Bacillus thuringiensis* (Bt crops) are perceived as being at high risk from pest adaptation

(Gould 1998). Several regulatory authorities around the world mandate or recommend the planting of non-Bt crops as structured refuges, where insects targeted by Bt crops can develop and breed. These refuges are intended to provide a reliable source of insects that are susceptible to the Bt proteins and can mate with any resistant insects emerging from the Bt crops, passing on Bt-susceptibility to their offspring. There has been much debate in the scientific literature about exactly how large these refuges should be, and how they should be managed (Mellon and Rissler 1998, Tabashnik et al. 2003). Therefore, resistance management plans developed by Industry and regulators tend to be based on highly conservative assumptions. However, scientists are now learning that the perceptions from a decade ago may not be borne out by reality (Tabashnik et al. 2003). One of the underpinnings of the mandated structured refuge in the United States is the assumption that alternative (crop or non-crop) hosts for the target pest insects do not serve as natural, unstructured, refuges (SAP 2001).

In other countries, alternative hosts are recognized as providing important mitigation of the resistance risks. In China, Bt cotton is widely grown without mandated non-Bt cotton refuges, recognizing that other crops such as maize provide important sources of susceptible insects. In Australia, growers have the option of planting non-Bt pigeon pea as a refuge for Bt cotton, since this alternate crop is even more productive of the target pest, cotton bollworm, than is cotton. Currently, the US Environmental Protection Agency is considering relaxing the refuge requirements for Bt cotton lines that produce two Bt different proteins for control of tobacco budworm and bollworm (such "pyramided" traits are believed to be at far less risk of resistance development than are single-gene traits). New data demonstrate that alternative hosts play important roles in reducing the selection pressure for resistance. The EPA recently convened a Scientific Advisory Panel meeting (<http://www.epa.gov/scipoly/sap/meetings/2006/index.htm#june>) to consider whether the new data indicate that these alternative host crops reliably produce sufficient susceptible insects in proximity to and at the same time as any potentially resistant insects produced in Bt cotton fields. Industry and regulators have to balance any additional resistance risks that may result from relaxing the refuge rules with the financial and environmental benefits that would result from removing a barrier to the planting of additional Bt cotton acreage. The EPA is expected to make a decision later this year.

[The full article along with references is available on the IRAC website.](#)

Conferences and Symposia

- **European Congress of Entomology, Izmir, Turkey, 17-22nd Sept. 2006**
[More »](#)
- **4th International Bemisia Workshop, Florida, 3-6th December 2006**
[More »](#)
- **Intl. Whitefly Genomics Workshop, Florida, 7-8th December 2006**
[More »](#)
- **Entomological Society of America, Annual Meeting, Indianapolis, 10-13th December 2006**
[More »](#)
- **Joint Entomological Societies (Germany, Switzerland, Austria) Meeting, Innsbruck, Austria, 26 Feb - 1 March 2007**
- **RESISTANCE 2007, Rothamsted, 16-18 April, 2007**
[More »](#)
- **3rd European Whitefly Symposium, 6th-10th May 2008**
[More »](#)



Copyright © 2004 intraspin.com