IRAC Insecticide Resistance Action Committee
eConnection

Issue 9
December, 2005
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eConnection Update

- **Issue 9 of eConnection**
  Welcome to eConnection, a free newsletter prepared in conjunction with the IRAC website. This is the fourth and last issue for 2005 so it is good to note that the interest in eConnection has continued to grow and the circulation is now well over 600.

  In this issue we report on future IRAC website improvements, enlargement of the IRAC International Regulatory Team, and formation of a new IRAC Biotechnology Team. Also included is a brief report on the joint IRAC and FRAC presence at the British Crop Protection Conference (BCPC) in Glasgow. Finally there is a short article on the development of the whitefly Q-type in the US.

  Past issues of eConnection and further details on the items reported can be found on the IRAC website. More »

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If you have a colleague who would be interested in the IRAC eConnection and website please forward this link to them so they can subscribe free of charge at: http://www.irac-online.org/about/econnection.asp

- **Spread the Word**
  If you have Resistance Management information that you think should appear in eConnection or on the IRAC website contact us with details at: aporter@intraspin.com

IRAC News

- **IRAC Website - Content Management System**
  The size of the IRAC website and the number of documents stored continues to grow and the decision has been taken to develop a Content Management System for the site. This involves storing all the information and document links in a database so that updates are made to the database rather than to large numbers of web pages. This will allow for better control and faster updates to the site without changing the look or design of the web pages. It will also allow IRAC members with the appropriate "permissions", such as the Country Groups, to upload information and documents and directly mange their own areas of the website.

- **IRAC Regulatory and Biotech Teams**
  The new IRAC International Regulatory Team, formed a couple of months ago, has now been strengthened with further company members. We now have representation on the team from BASF, Bayer CropScience, DuPont and Syngenta. The first Conference Call of the new full team will take place on January 17th, 2006.

  We also now have a new IRAC Biotechnology Team which held their first Conference Call on December 2nd. Sitting on the Team are representatives of Bayer CropScience, Dow AgroSciences, Pioneer (DuPont) and Syngenta. During the first call the Team established its scope of activities and defined some initial actions. A follow-up call is due to be held in January 2006.

- **IRAC showcases the latest Mode of Action Classification scheme at the BCPC in Glasgow.**

The BCPC International Congress & Exhibition, Crop Science & Technology 2005, was held in Glasgow, 31st October to 2nd November 2005. The Insecticide and Fungicide Resistance Action Committees (IRAC & FRAC) manned a stand at the exhibition and participated in the Conference Session on Resistance Management as well as the RAC's (Resistance Action Committees) and RAG's (Resistance Action Groups) Open Forum.

IRAC took the opportunity to showcase its new version of the Insecticide Mode of Action (MoA) Classification Scheme. This provides farmers, growers, advisors, extension staff, consultants and crop protection professionals with a guide to the selection of insecticides or acaricides in an effective and sustainable resistance management (IRM) strategy. In addition to presenting the MoA classification, the scheme outlines the background and purpose of the classification and provides guidance on how it should be used.

The new version (ver. 5.1) of the scheme now lists all the currently supported insecticides and acaricides as per the latest edition of the Pesticide Manual. In conjunction with the printed document IRAC have also designed tools to support the new version including an interactive web based application called eClassification. More »

A poster is also available showing the actives and their structures organised into the relevant groups. The poster and the latest version of the scheme can be viewed on the IRAC website and A1 size copies of the poster can be obtained via the feedback/contact form on the website. More »

Resistance News

- ***Bemisia tabaci* biotype Q on the move**
  One of the major sucking pests in many agronomic and horticultural cropping systems is the sweet-potato whitefly, *Bemisia tabaci* Gennadius. This pest developed rather high resistance to many chemical classes of insecticides including organophosphates, carbamates, pyrethroids, neonicotinoids and insect growth regulators such as pyriproxyfen and buprofezin.

  In recent years two major biotypes of *B. tabaci* were considered to be most destructive, biotypes B and Q. The most widespread biotype is the B-biotype which is also known as *B.*

argentifolii. B-biotype whiteflies are geographically very widespread, damaging cotton, vegetables and ornamental crops both by direct feeding and as a vector of numerous plant pathogenic viruses. In southern Europe, the B-biotype coexists with another form, the Q-biotype, which was originally thought to be restricted to the Iberian peninsula but is now also known to occur in several countries around the Mediterranean including Italy, Greece, Israel and Morocco.

B. tabaci B and Q biotypes can be distinguished by RAPD-PCR or by native polyacrylamide gel electrophoresis and subsequent visualisation of their non-specific esterase banding pattern.

The first example of a pest evolving resistance to field use of neonicotinoid insecticides related to Q-biotype *B. tabaci*, in the intensive horticultural production system occupying over 30,000 ha near Almeria in southern Spain. Due to a continuous production cycle and favourable climatic conditions, *B. tabaci* frequently reaches very high densities, causing direct damage through feeding and by transmitting virus diseases to tomatoes, peppers and curcubits. Over-use of insecticides, often as tank-mixes, has led to the loss of many older insecticides through resistance, and placed excessive pressure on novel products introduced to the region.

Whereas recently the occurrence of biotype Q was restricted to the Mediterranean basin, it has now also been detected in the United States of America and Japan. A strain called Poinsettia 04 was found at a retail nursery in Arizona and was essentially unaffected by pyriproxyfen, and exhibited a strikingly reduced sensitivity to neonicotinoids, buprofezin and mixtures fenpropathrin and acephate. Since the first detection of biotype Q in the USA roughly one year ago it has now been detected in 18 (!) states, all of which were collected from greenhouse cropping systems. However, the Q-biotype of *B. tabaci* is resistant to most insecticides and is considered as a major threat to growers in the US, therefore a task-force group headed by the USDA has been formed in order to evaluate the problem and to provide management tactics in collaboration with e.g. university experts, growers associations and industry.

European whitefly experts have been approached including members of IRAC to provide input and advice (e.g. ESA Meeting, Fort Lauderdale and IPM Meeting, St. Louis)

Conferences & Symposia

- **Beltwide Cotton Conferences, San Antonio, Texas, 3-6th January 2006** More »
- **IPM Conference, St Louis, 4-6th April 2006** More »
- **IUPAC Conference, Kobe, Japan, 6-11th August 2006** More »
- **European Congress of Entomology, Izmir, Turkey, 17-22nd Sept. 2006** More »
- **4th International Bemisia Workshop, Florida, 3-6th December 2006** More »
- **International Whitefly Genomics Workshop, Florida, 7-8th December 2006** More »

For further information about IRAC, the new website and eConnection please contact Alan Porter, IRAC International Coordinator, aporter@intraspin.com.