

Issue 8

September, 2005

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

News Categories this Issue:

eConnection and
Website update
IRAC News
Conferences and
Symposia

eConnection Update

▪ Issue 8 of eConnection

Welcome to the latest eConnection, a free newsletter prepared in conjunction with the IRAC website. In this issue we report on the response from the IRAC International Regulatory Team to a recent ECPA release outlining the impact of reduced numbers of products for the treatment of minor crops. Also included is an article on the control of the brown plant hopper with neonicotinoids describing initiatives such as those being taken by IRAC India to monitor the resistance status. Finally there is a brief report on the recent IRAC International Meeting at CropLife International in Brussels and advance notice of an IRAC Symposium in the US on Neonicotinoid Sustainability. We hope you find the information interesting.

Past issues of eConnection and further details of the items reported can be found on the IRAC website. [More »](#)

▪ Website Update

The IRAC website is now well established as a valuable resource for information on Resistance Management. The latest Review and Analysis of Website Traffic shows there is a high hit rate (130/day) and good numbers of visitors (28/day) from 82 countries accessing the pages, either through direct entry of the url or via the search engines. The IRAC website is typically ranked first in Google and Yahoo for the key search terms.

[More »](#)

▪ 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

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.irc-online.org/about/econnection.asp>

IRAC News

- **IRAC Comment on ECPA release on loss of insecticides in minor crops in Europe**

IRAC strongly believes that the continuing reduction in the toolbox of available insecticides inevitably leads to an increased risk of the development of resistance to remaining products. This view was reinforced by a recent release from the European Crop Protection Association (ECPA) who declared that "with the removal of many crop protection products used to treat minor crops, there is an increased risk of resistance to the products remaining on the market. The continued production of many fruits and vegetables in Europe is threatened by the lack of products to protect them from pests and diseases."

ECPA highlighted the fact that this is a particular problem in minor crops but IRAC is of the view that the problem is not just restricted to minor crops. For example, the deregulation of a number of organophosphate insecticides that were very effective for the control of the Pollen beetle (*Meligethes aeneus*) in oilseed rape crops in many European countries has resulted in almost total reliance on the synthetic pyrethroids. Exclusive use of this group of insecticides has led to the development of resistance to them in many countries including France, Poland, Germany and several Scandinavian countries.

One of the central themes of IRAC's approach to effective IRM has been an insistence that sequences, alternations or rotations of insecticides with different modes of action (MoA) may be an effective way to prevent the build up of resistance. In the case of pollen beetles, repeatedly using the same pyrethroid MoA led to resistance problems that did not exist when alternative organophosphate compounds were also available. The ECPA report highlights the fact that similar problems are likely to

arise in a whole range of minor crops where registrations are no longer supported. The ECPA release also rightly indicates that the European crop protection industry strongly supports and is willing to contribute to a simplified and streamlined regulatory process that adequately addresses minor uses. "Streamlined procedures are required to ensure that suitable crop protection solutions are available to supply niche markets, without compromising existing measures to protect consumers, operators and the environment". Such measures will be essential if resistance problems are to be avoided. IRAC believes the situation will be exacerbated once comparative assessment is introduced as part of European pesticide legislation. [Acknowledgements to ECPA Perspectives, July 2005]

A link to the ECPA article and a full version of the IRAC comments can be found on the website. [More »](#)

- **Initiatives in brown planthopper control with neonicotinoids**

The brown planthopper (BPH), *Nilaparvata lugens* Stål (Hemiptera: Delphacidae), is a sucking pest insect that has been associated with rice since the crop was first grown for food in Asia. This insect is known to survive well only on rice and in evolutionary terms has co-evolved with the rice plant. BPH damages plants by sucking. Affected plants become chlorotic, and older leaves turn progressively yellow, dry and later on die. The feeding damage is commonly referred to as hopperburn. *N. lugens* is also a vector of rice grassy stunt tenuivirus and rice ragged stunt virus.

Over the last decade excellent BPH control under field conditions was mainly achieved by using foliar application of neonicotinoid insecticides. Neonicotinoid resistance in field-collected populations of BPH has not yet been reported in the literature, but there is some anecdotal evidence that in several regions in South East Asia neonicotinoids are becoming less effective for BPH control. However, researchers at Nanjing Agricultural University in China selected field populations of BPH for imidacloprid resistance under laboratory conditions, thus demonstrating the potential for resistance evolution against neonicotinoids in this pest (Liu & Han, 2003, Pest Manag Sci 59, 1355). Furthermore they were able to link this resistance to a point mutation in alpha subunits of the nicotinic acetylcholine receptor, the target-site of neonicotinoid

insecticides. A single amino acid change at position Y151 led to a nearly complete loss of imidacloprid affinity to nAChR alpha subunits as shown in binding experiments using expressed target proteins (Liu et al., 2005, PNAS 102, 8420). It is not yet clear how stable this resistance is and if there are fitness costs associated with this artificially selected target-site mutation.

In order to particularly address the issue of neonicotinoid tolerance in BPH in India, members of IRAC India decided on their meeting on July 1st to establish a local neonicotinoid working group. It is planned to monitor the resistance status of BPH in collaboration with the National Rice Institute (DRR) in order to define resistance management tactics for BPH control in Rice in India.

- **IRAC International Meeting**

The Communication & Education Team of IRAC International met at CropLife, Brussels to review progress on initiatives. Topics discussed included the website, eConnection, the eLearning education training modules, the MOA eClassification as well as posters and handouts for the upcoming meetings at BCPC Glasgow and ESA, Fort Lauderdale. The meeting included call-ins from the IRAC Country Groups and from the rest of the IRAC International Team. Members of CropLife joined for some of the sessions for a valuable information exchange.

- **IRAC symposium for Neonicotinoid Sustainability**

The IRAC US group have organised this symposium for Tuesday, 8 November 2005 at the ESA Meeting in Fort Lauderdale. There will be a number of presentations discussing Neonicotinoid resistance management strategies throughout the morning followed by a panel discussion. A copy of the agenda is available on the website. [More »](#)

Conferences & Symposia

- **7th International Conference on Pests in Agriculture, 26-27th October 2005** [More »](#)
- **5th Asia Pacific Congress of Entomology, 28-31st October 2005** [More »](#)

- **The BCPC International Congress - Crop Science & Technology 31st October - 2nd November 2005 [More »](#)**
- **Entomological Society of America Annual Meeting, Fort Lauderdale, 6-10th November 2005 [More »](#)**
- **3rd International Conference on IPM role in Integrated Crop Management and Impacts on Environment & Agricultural Products, 26-29th November 2005 [More »](#)**
- **6th Pacific Rim Conference on the Biotechnology of Bt and its Environmental Impact 30th November 2005 [More »](#)**

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

