



## IAPPS NEWSLETTER

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### THE INTERNATIONAL CENTRE OF INSECT PHYSIOLOGY AND ECOLOGY (ICIPE) TO STUDY GRASS-INSECT CONSERVATION

Grasses (the Gramineae) are arguably the most important group of plants for humankind. More than half of the world's food comes from just three gramineous species: rice, maize and wheat. Grasses are also the main food for livestock. Both wild grasses and cultivated crops are home to myriad species of arthropods (insects, spiders, ticks, etc.) which are essential to environmental and agricultural health through their roles as pollinators, recyclers and natural enemies of pests. Wild grasses, many of which are endemic to Africa, also provide a gene pool for sourcing genetic material for improvement of cultivated varieties. In the Sahel, wild grasses traditionally provide an important source of food, with some households collecting as much as 1000 kg annually. In East Africa, grassland habitats support a wide diversity of mammals and other cash-earning wildlife resources. Because of the accelerating human pressure on the environment and destruction of grassland habitats, however, valuable grass species are disappearing, and with them the useful insects they harbour.

The Nairobi-based ICIPE has just been awarded a grant of US\$ 972,000 by the United Nations Environment Programme (UNEP) through the Global Environment Facility (GEF) Trust Fund for a 3-year project on 'Conservation of Gramineae and Associated Arthropods for Sustainable Agricultural Development in Africa', commencing in October 2001. Dr Hans R. Herren, Director General, announced that the Centre received this grant as the implementing agency for the Project, at a total cost of US\$ 2.5 million. ICIPE has recruited the partnership of the International Plant Genetic Resources Institute (IPGRI) and national partners in Kenya, Ethiopia and Mali. The overall coordinator of the project is Dr. Zeyaur R. Khan, Principal Scientist and Leader of the Grass Ecosystems Programme based at ICIPE-Mbita Point.

The immediate goal of the new project is to evaluate and promote the practical application of grasses and their associated arthropod life in pest control and sustainable agriculture. The ultimate goal is to conserve natural grasslands and reintroduce biodiversity into farming systems so as to create a self-controlling, low-input method of agriculture more suitable for Africa's farmers than many of the 'modern' methods requiring high inputs of insecticides, herbicides and fertilisers. In this context, ICIPE will study the impact of various land use, farming and pest management practices on wild grasses and associated arthropods. ICIPE has already demonstrated the benefits of using borders of several kinds of grass species, including Napier grass and Sudan grass (a species of wild sorghum), around maize and sorghum fields for controlling stemborers, resulting in substantial increases in cereal and milk yields. Of over 400 wild grasses screened thus far, about 30 have been studied in more detail for their stimulodeterrent properties and potential use in pest control.

About 300 farmers and three communities from each of the three countries will participate in the Project. Other collaborators are Kew Gardens and the Natural History Museum, London and relevant NGOs from each country through the Environmental Liaison Centre International (ELCI).

Kenya and Ethiopia were included in the Project because of the importance of their rich diversity of forage and cultivated grass germplasm. Mali, with its rich grassland resources, was included because of the country's concern about the impact of a growing population and overuse of pesticides on its fragile agro-ecosystems in the face of very unpredictable and inadequate rainfall.

### THE BRITISH CROP PROTECTION COUNCIL CONFERENCE 2001 - WEEDS BRIGHTON, ENGLAND

The 2001 main conference programme comprised over 140 platform and poster presentations split between the 25 sessions. They were split into four loosely associated themes, namely, weed management and biology, weed science, impact of environment and new technologies. In addition to the main conference, there were two associated symposia, The World's Worst Weeds and Pesticide Behaviour in Soils and Water. The former took its theme from the trilogy published by Holm et al and reviewed the current status and distribution of some of the most important and

intransigent weed groups in world agriculture. The Cyperaceae are still considered as being the world's worst weeds. Future trends and prospects for grass and parasitic weeds species were outlined. Papers were also given on aquatic weeds, prediction of invasive weed populations and weeds in a changing environment. The Pesticide Behaviour in Soils and Water Symposium covered the major concern of pesticide potential to affect soil and water quality. Sixty platform and poster papers were presented in sessions on pesticide sorption and mobility, degradation, quantitative aspects and risk management.

The main conference was started by the traditional Bawden Memorial Lecture, given this year by Professor Chris Leaver, Head of Plant Sciences at Oxford University. In his lecture entitled 'Food for Thought', Professor Leaver summarised the achievements to date from crop biotechnology and presented the future potential that this technology can play, in conjunction with traditional plant breeding and agricultural practices, in facing the issues arising from increasing world population and diminishing land suitable for agricultural crops. Furthermore, Professor Leaver introduced the potential use of biotechnology to develop crops as bio-fuels, as sources for biopharmaceuticals, such as vaccines and for the production of vitamins and other micro-nutrients. Throughout the lecture Professor Leaver highlighted the need for science to educate the general public and politicians on the potential benefits of crop biotechnology.

This lecture was supplemented by two associated sessions on the benefits to date from crop biotechnology and seeing into the future with the technologies theme within the conference. In addition there were sessions on developments in herbicide application and formulation technology and weed sensing technologies and targeted control.

In the traditional 'New compounds and uses session' there were four new active ingredients introduced. Pethoxamid is a chloracetamide herbicide being introduced by the Tokuyama Corporation for pre- and early post-emergence control of grasses and broad-leaved weeds in maize and soybean. The other three new introductions were all new sulfonylureas. Trifloxysulfuron-sodium from Syngenta Crop Protection will be used for post-emergence grass and broad-leaved weed control in cotton and sugarcane. Foramsulfuron from Aventis CropScience is being introduced for post-emergence control of grass and broad-leaved weed control in maize, in combination with the safener, isoxadifen-ethyl. Mesosulfuron-methyl, also from Aventis CropScience, is being introduced for post-emergence grass weed control in cereals, in combination with the safener, mefenpyr-diethyl. Two biologicals were also introduced by Eco Soil Systems Inc. The bacterium, *Azospirillum brasilense* with a microbial stimulant for root development in *Agrostis palustris*, *Lolium perenne* and *Festuca arundinacea*. and *Xanthomonas campestris* pv. *poannua* for the biological control of *Poa annua* in golf courses, in combination with growth retardants.

Under the weed biology and weed management theme, there were sessions covering integrated crop and weed management in grain crops, in temperate non-grain crops, in tropical and sub-tropical crops and in non-crop situations. Other sessions specifically covered: new weeds, including crops as weeds and invasive weeds; what weeds should we control and what should we leave?; and how to make reliable decisions in weed management. There was also a session on non-chemical weed control.

The impact of climate change and weather on weeds and weed management was addressed together with the influence of climatic factors on herbicide performance. Also on the environmental theme was a double session addressing herbicides in the environment: exposure, consequences and risk, associated with the Pesticide Behaviour in Soils and Water Symposium. Also on the environmental theme was a session covering critical uses in minor crops

The other sessions at the main conference in the weed science theme included herbicide mode of action and metabolism and herbicide resistant weeds: risk assessment, baseline sensitivity and management. Finally in a session on generic herbicides, papers were presented on their impact on Agchem Company R&D innovation, on the herbicide market, on on-farm advice and on current and future weed problems in crop management.

All the papers presented at the conference have been published in Conference and Symposia Proceedings available from BCPC Publications Sales, E-mail: [publications@bcpc.org](mailto:publications@bcpc.org) or internet, <http://www.bcpc.org/bookshop>.

## SYMPOSIUM ON PESTICIDE BEHAVIOUR IN SOILS AND WATER

A specialist research symposium on '**Pesticide Behaviour in Soils and Water**' was run concurrently with the 2001 British Crop Protection Conference in Brighton, England from 12-15 November.

A major environmental concern with pesticides in many parts of the world is their potential to affect soil or water quality. The main objectives of the Symposium were to discuss current knowledge concerning the interacting processes that determine environmental behaviour, to indicate where further research is needed, and to assess the practical advice that can be given to farmers and growers concerning pesticide management at the farm scale. There

were eight Platform Sessions and two associated Poster Sessions with a total of 68 invited and offered contributions. Delegates came from 22 different countries, mainly European, but including Australia, Japan, USA, Canada, Egypt, Israel, Ethiopia and Nigeria.

The papers in the Introductory Session provided a broad overview of the quantitative evaluation of the dynamics of pesticide residues and reviewed the modeling approaches that can be used as an aid to risk assessment. Subsequent Sessions discussed the individual processes (sorption, degradation, mobility), and included evaluation of the methods that can be used to measure and describe variability and uncertainty in the definition of parameters for use in pesticide fate models. Several papers then described approaches to pesticide management that can be used in practice to minimise environmental contamination, and included examples of stewardship campaigns and farmer training initiatives that encourage use of best management practices at the farm scale. The final papers addressed issues relevant to the regulation of environmental exposure and risk assessment, and the implementation of risk management strategies for pesticides in soil, water and air.

All of the papers were published as a monograph, and these proceedings provide an up to date account of our current understanding in several of the important research areas, and they identify where knowledge is still limited and where further research is required. Further information concerning the proceedings can be obtained from the British Crop Protection Council web site ([www.bcpc.org](http://www.bcpc.org)).

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IAAPS 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.

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

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