

## Conference on Innovative Ideas in Pest & Weed control in Field Vegetables



*Daisies, cornflower and hoverfly reproduced by kind permission of Rosemary Collier, Warwick HRI.*

A new conference, which is hoped will become part of a multi-disciplinary series, was initiated at Warwick HRI, Wellesbourne, on 13 November 2007. Entitled 'Innovative ideas in pest & weed control in field vegetables', it was designed to show the industry what novel ideas were coming from scientists and technologists that could help both organic and conventional growers cope with these problems in either the absence or increasingly limited availability of pesticides.

There were over 30 delegates, including consultants, scientists, technologists and teachers. They were entertained by a wide range of presentations with plenty of excellent discussion, and their positive responses to the interactive nature of the meeting makes us believe that there is room for such a meeting on a regular basis. The scientists involved commented on the usefulness of the multi-disciplinary approach and the meeting helped them put their ideas into the broader applied context.

A keynote paper by Gareth Davies of IOR-HDRA emphasised that the development of innovation needs to involve users as co-developers, so both the developers and users learn how to facilitate the adoption of the technology. Too often developers present potential users with highly developed KT, 'ready for use', but in fact without understanding the context for the user. The organic sector was probably more advanced in co-developing new ideas with the users. This was taken further by Tony Little, Organic Centre Wales, in his poster on communicating with producers in Wales.

Nick Tillett, Tillett & Hague Technology, then described a highly developed technology for automated weed control in row crops, using machine vision, which had been developed in conjunction with growers and the potential manufacturer. Interestingly, growers continued to come back to the developers suggesting further adaptations.

Rosemary Collier, with others at Warwick HRI, looked at the potential for companion plants, including innovatively, weed species, to assist in pest management. Weed species often acted as host plants for pest predators, so could reinforce the effectiveness of such an approach. Rosemary emphasised the increasing need to work with the environment as a theme of research. Birgitta Ramert and Monica Bjorkman, Swedish University of Agricultural Sciences, developed this theme of pest management further, showing other benefits of inter-cropping, including the use of undercutting to reduce the competitiveness of inter-row plants on the main crop. Lidija Krava-Garde,

Warwick-HRI, developed the theme further, presenting information on the benefits of wildflower strips as a source of aphid predators. Further information was required for their design for the different functional groups.

Mike May, Broom's Barn Research, suggested that in conventional growing systems the use of in-row band treatments to reduce pesticide treatments, including herbicides, could also allow inter-row communities of weeds to act as companion plants and hosts for pest predators. This theme of using companion plants, including 'weeds' as a method of pest management was discussed in depth, with useful interaction between the entomologists and weed scientists present.

Andy Evans, on behalf of a group at SAC, described the potential use of kaolin film as a more direct approach and alternative to pesticide use, the film reducing the attractiveness of foliage to pests. The reaction of pest species varied, as did their interaction with plant species, but this could become an important tool in pest management, along with companion planting.

The development of Bt based pesticides' formulations to reduce their break down, particularly under solar radiation, was described by Aijun Gong of Beijing University of Science and Technology.

David Hansson and S-E Svensson, Swedish University of Agricultural Sciences, completed the presentations with a description of their work on steaming of soil in narrow bands before sowing crops, for weed management in organic systems. This method greatly reduced the cost and carbon footprint of such an approach. In further discussion the need for these and other innovative approaches will become of increasing importance to maintain adequate levels of pest and weed control in the future. The need for such developments to be multi-disciplinary has been emphasised by this meeting.

*Dr Ken Davies*

## International Advances in Pesticide Application 2008

The International Advances in Pesticide Application conference was held at Cambridge University's Robinson College on 9-11 January 2008, and attracted scientists from a wide range of countries and disciplines. The platform presentations highlighted the international aspect of scientific and engineering advances related to safe and efficient crop protection techniques across the world, which included a presentation by Collins Wanyama of Real IPM in Kenya. A number of papers presented recent work to quantify spray drift and the development of techniques to reduce losses. There were inputs from regulators in the UK, Netherlands and the USA and a discussion which considered how best to set unsprayed buffer zones, and possibilities for a harmonised approach within the EU. Sessions also included the use of new techniques to apply pesticides, including the use of sensing techniques, which can recognise the target, so allowing pesticides to be delivered more effectively. Papers dealing with tree and bush spraying highlighted the need to match the application technique to the target as changes occur during the growing season. Digressing from crop protection, papers covering vector control in Florida and Africa highlighted a very different approach to using pesticides. Graham Matthews presented an overview of the work done by IPARC, which celebrated its 50<sup>th</sup> year in 2005, and continues to play an active role, particularly in the developing world. We look forward to seeing everyone at our next conference in 2010.

*Richard Glass, CSL*