

PLANT DISEASE CONFERENCE IN FRANCE

Brian Hicks, editor of the business newsletter, *Crop Protection Monthly*, reports on some key parts of the 6th International Conference on Plant Diseases (CIMA), which was held at the Vinci conference centre in Tours, France, from 6–8 December.

The event was organised by AFPP (www.afpp.net), the French counterpart of the British Crop Protection Council. Over 600 delegates attended, some 15% from abroad (24 countries). There were 130 presentations and posters, as well as a trade exhibition with some 25 stands.

Diagnostics in crop production

Dr Derek Hollomon of the department of agricultural sciences at the University of Bristol (UK) gave the introductory presentation on *Modern Diagnostics in Crop Production*. A French translation of his text also appeared in December's edition of the French journal, *Phytoma*. Dr Hollomon's laboratory is actively involved in the detection of disease resistance. He argued that more precision is needed with crop inputs and that diagnostic tools were an important contributor, giving both consumer and environmental benefits. Payment for the use of diagnostics could come from agrochemical companies to promote product sales, from the advisory sector to improve advice given or directly by farmers themselves.

Dr Hollomon reviewed the different technologies in agricultural diagnostics, including imaging, ELISA and PCR, and their potential uses in optimising seed, pesticide and fertiliser inputs. He commented that converting diagnostics into something practical still posed some real challenges. Immuno-assay techniques such as ELISA are not being developed much further. The focus is now on DNA-based approaches such as PCR, which are usually much more sensitive, allowing for earlier, "pre-symptomatic" disease detection (2–3 days in the case of *Septoria*).

Diagnostics are being regularly used in oilseed rape, cereals, bananas, grass (especially on golf courses), grapes (for detecting *Botrytis*) and peas (for bacterial diseases). He cautioned that commercialising diagnostics is not easy. One US company, backed by venture capital, which pioneered turf grass disease diagnosis is no longer in business. Detection of *Fusarium* spp producing mycotoxins is now done regularly by PCR in the UK for about £30 per test. However to understand the problems better, Dr Hollomon said that more of the biochemistry needs to be known, in particular relating to the conditions under which mycotoxins are produced.

PCR methods require the use and availability of suitable primers. Dr Hollomon's laboratory and another in Bordeaux have developed specific primers to detect fungicide resistance to DMI fungicides, triazoles and strobies. One example is the detection of point mutations conferring resistance to barley powdery mildew. PCR detection of resistance alleles can be

made quicker by adding fluorescent dye to the system, so-called "TaqMan chemistry". With the use of robotics and microtitre plates, PCR diagnostics can be speeded up to take as little as two hours.

Dr Hollomon identified a number of problems that still need to be resolved with diagnostic techniques, such as linking them with fungicide rates, spraying thresholds and economic decisions of whether to spray fungicides or not.

One diagnostic technique not mentioned by Dr Hollomon, but pointed out by Dr Phil Russell of Aventis CropScience, is the human sense of smell, which can be very helpful to farmers. It can be used to detect potato blight, bunt and other diseases and some research has been done into the development of "artificial noses".

New products

Seven new fungicides were presented in both poster and round table sessions. More details (post-Brighton) were given about trifloxystrobin, picoxystrobin, BAS 500F and famoxodone. Aspects were revealed of the unique mode of action of quinoxifen, which has been gaining sales in cases of known resistance problems. It is very rapid in its activity in both vines and cereals. French approval for trifloxystrobin is expected for the start of 2001 for cereals, top-fruit and vines. In cereals it will be sold alone (as a 125 g/l formulation) and as a mixture containing 187.5 g/l trifloxystrobin and 80 g/l cyproconazole. Picoxystrobin is being developed

AFPP

AFPP (Association Française de Protection des Plantes) has a secretariat of three staff based in Paris under the director Philippe Printz. The origins of AFPP date back to 1953, from which ANPP (Association Nationale de Protection des Plantes) was formed in 1984. There was a slight change in the association's name in January 2000 from ANPP to AFPP, to better reflect the association's role in plant protection in France and the French-speaking world.

AFPP has just established a new commission on "alternative methods of control", which has five working groups under its auspices. These cover micro-organisms, macro-organisms, natural products, mechanical methods and prophylaxis respectively.

Next year's AFPP conference ("COLUMA") will be devoted to the theme of weed control and will be held in Toulouse from 5–7 December 2001, under the presidency of Jean-Louis Pasquereau, a well-known technical specialist at the co-operative, Agri 18 (part of Epis-Centre), Bourges.

in France for use in cereals alone and as a mixture (125 g/l picoxystrobin + 25 g/l hexaconazole).

Zoxamide is a new benzamide fungicide from Rohm and Haas which inhibits cellular division. The first microgranule formulations for sale in France will be for potatoes (8.33% zoxamide + 66.7% mancozeb) and for vines (6.25% zoxamide + 70% mancozeb).

Fenamidone, developed by Aventis, is an optically active isomer. It will only be sold in mixtures in France, in vines at a dose rate of 75–133 g ai/ha with fosetyl-al, cymoxanil, copper hydroxide or folpet. For potatoes, a formulation with 10% fenamidone and 50% mancozeb will be commercialised.

The unique mode of action of the Monsanto seed treatment for take-all in wheat, silthiopham (Latitude) has recently been elucidated. It disrupts the energy process outside the mitochondrion. Goëmar Laboratories, St Malo, France, presented details of a natural seaweed-derived product, laminarin, which enhances cereal disease resistance.

Roundtable on food security

There was some animated discussion in the conference “round table” on food security and the response of the sector to the demands of distributors and consumers. French consumers have become “sensitised” with recent revelations that “mad cow disease” is a real problem and that the effects have been underestimated. Beef sales have been plummeting in France as a consequence and strict feed controls will now be enforced.

Gérard Benoist du Sablon, from the French consumer group, Organisation Générale des Consommateurs (<http://perso.wanadoo.fr/orgeco>) gave delegates a foretaste of the results of a consumer survey conducted by the Ipsos group. French consumers broadly feel that there is “more choice and more control but less taste in food today”. Some 75% of those surveyed said that risks were small due to frequent checks. He personally prefers “to view the glass as half-full rather than half-empty” and does not want to look at his plate and examine “what is a GMO and what is not”.

Mr du Sablon said that big brands still have a positive image. Consumers are eating much more varied food but want to know more about the controls applied and its history. They are in “permanent crisis and psychosis” because of the risks.

A representative of a tomato and cucumber growers’ group (accounting for 10% of the French market) explained its national quality charter and focus on biological and

integrated crop protection. He commented that predators could sometimes cause problems and that traceability is a key consideration. The group set up a quality assurance scheme at the end of 1997. Export requirements are strict, with residues an important aspect. Only specified products are permitted and this is controlled by an outside organisation, from seed to final product.

On the taste issue, he said that tomatoes and cucumbers must be at room temperature for best results and commented that “if you want to eat well you have to consider the price”.

Dr Hervé Lafforgue, a toxicologist at the food company, Danone, commented that “you cannot separate good agricultural practice (GAP) from environmental protection and quality”. He added that too much focus is often put by farmers on the products used rather than “the whole picture”, which should take into account aspects such as whether a sprayer was working properly. Mr Lafforgue said that pesticide residue analysis was becoming very effective, but that it should be a toxicologist who judges it and the analyst must not fix the norms, a comment met with much applause from the conference floor.

Several delegates stressed the need to develop a single official “IPM logo” as a reference standard in France for food marketing purposes rather than having a plethora of standards. Appreciable premiums can be obtained for assured produce, commented one delegate, as evidenced by “IPM flour” sold at the supermarket chain Carrefour.

Evolving disease control

Phytopathogenic fungi are estimated to account for some 20% of crop losses today. Their adaptability and diversity makes it a continuous struggle. One speaker said that it now typically costs some FFr 2,000 million to develop a new fungicide and that only five or so firms could now afford these development costs.

At the end of the conference, Nadine Cavelier (INRA) reflected on how disease control should evolve. She said that better knowledge of fungi and the epidemiology of diseases was essential, adding that “common sense” was sometimes lacking in the approaches followed.

She argued that a lot of work was required at the “prescription” and education levels and that it was important that what had been presented at the conference reached “those in the field”.

ADDITIONS AND CORRECTIONS

Promoting international collaboration for potato late blight disease management

K.V. Raman, Niklaus J. Grunwald and William E. Fry

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The authors would like to point out that on page 182 under the section “The need for global research to control late blight”, the sentence “However, Eastern Europe and Mexico are not yet involved in these initiatives” should be replaced by the following: “Both Eastern Europe and Mexico are currently participating in GILB. GILB supported the first meeting of Eastern Europe’s linkage group in 2000, and also had Eastern Europe represented at the Global Conference on Late Blight in Quito, Ecuador in 1999. In the same way, Mexico was represented in GILB organized global meetings. National program staff from Mexico have been members of the Latin American and Caribbean Linkage Group.”