

Two new strobilurins

BASF is moving toward the launch of a new fungicidal active ingredient of the strobilurin class, code named F 500. Details were presented by BASF scientists at the British Crop Protection Conference in Brighton, UK. Found to control the major plant pathogens from all classes of fungi, F 500 has a broad range of efficacy against many diseases in many crops including cereals, grapes, vegetables and fruits. It is claimed to set a new standard for *Septoria tritici* control. Zeneca Crop Protection UK also made a high profile launch for Syngenta's picoxystrobin strobilurin fungicide, claiming faster uptake, systemic activity, and greater curative control of *Septoria tritici*, net blotch and rhynchosporium than existing strobilurins (see page 38).

Parkinson's pesticide connection reinforced

Researchers at Emory University say new studies support the notion that chronic exposure to pesticides could contribute to the onset of Parkinson's disease, although observers advise against reaching sweeping conclusions from the studies of rotenone in rats. These studies were meant to test scientific concepts, to see if a better animal model for Parkinson's disease could be produced. Low doses of rotenone in rats produced Parkinson's symptoms, accompanied by Lewy bodies (a characteristic of Parkinson's) and a generalised deficiency of Complex 1 in the rats. It is acknowledged, however, that the study does not furnish enough evidence that rotenone or any other specific pesticide is a culprit in Parkinson's disease. The results justify further epidemiological studies on the effects of pesticides. Other studies by the University of Rochester found a link between Parkinson's and exposure to a combination of paraquat and maneb. For more information see *Nature Neuroscience*, 2000, **3**(12), 1301.

Volatiles for defence

Maize releases a cocktail of indole and terpenoid compounds when attacked by the beet armyworm (*Spodoptera exigua*). These compounds attract a parasitic wasp, which deposits its eggs in the caterpillar; the wasp larvae then devour the caterpillar. Two groups have identified the genes involved in the production of these volatile defence chemicals [*Proceedings of the National Academy of Sciences*, 2000, **97**(26), 14801–

14812]. Frey *et al.* (pp. 14801–14816) identified the gene *IgI* involved in the synthesis of indole, while Binzhang Shen *et al.* (pp. 14817–14812) identified the gene *stc1* required for maize to make a terpenoid.

Termite control

Heumann Greenhouse & Laboratory, Metairie, LA, and the Louisiana State University Agricultural Center are cooperating in the development of vetiver as a "miracle insecticide". Vetiver is a fragrant grass containing over 300 chemical compounds, one of which, nookatone, is repellent to Formosan subterranean termites. The partners hold a preliminary patent on the compound. As a wood treatment nookatone prevented the termites moving on the treated surface and in the soil it stopped tunnelling activity. As a semi-volatile material it would need to be applied every few months. Recent tests have shown that the mixture of oils from the plant may be more effective than nookatone on its own. For more information see www.vetiver.com/

Methyl bromide

...paddy fields release halides

Paddy fields release methyl halides as a metabolic by-product of methane generation. Measurements by GC-MS of methyl chloride, methyl bromide and methyl iodide released from growing rice plants show that more methyl iodide is released than either of the other two halides, indicating a possible preferential take-up of iodide during active biological processes. Extrapolation suggests that global rice production might be responsible for 1–4% of atmospheric methyl bromide and methyl iodide, respectively.

...naturally occurring soil micro-organisms as alternatives

A research programme into methyl bromide substitutes at the ARS Horticultural Research Laboratory in Fort Pierce, FL found that adding the soil micro-organisms *Paenobacillus macerans* and *Bacillus amylo-liquefaciens* to a transplant mix stimulated plant growth. A combination of the organisms were added to the transplant mix BioYield 213. This gave yields similar to those obtained using the soil fumigant methyl bromide.

...propargyl bromide as alternative

Propargyl bromide (3-bromo-1-propyne) is

active against a broad range of soil-inhabiting pests and may prove to be the best of the methyl bromide alternative options. However, this is still a long way to go before a pesticide registration application is made to commercialise propargyl bromide. For more information on methyl bromide alternatives see <http://www.epa.gov/docs/ozone/mbr/mbrqa.html>

...14 consumer, health and environmental organisations from around the world have called on the government of the People's Republic of China to end the rapidly increasing production and consumption of methyl bromide. China has become the leading producer and consumer of methyl bromide in the developing world, producing 2320 tons in 1998, with production expected to rise to over 4000 tons in 2002.

Snippets

...the glassy winged sharpshooter is a major problem for Californian viticulture (*Pesticide Outlook* 2000, **11**(6), 218). A researcher at the University of California, Riverside, has identified 5 pesticides with 100% efficacy against the insect: Admire (the unregistered acetamiprid), Marathon (malathion), Merit (imidacloprid), Mesuro (methiocarb) and Tame (fenprothrin).

...the US Agricultural Research Service (ARS) is working with Trécé Inc., who have a licence for a patented gluten-based syrup which shields insecticides against the effects of UV light. The ARS says that treatments which use the syrup with pyrethroids, carbamates and organophosphates at 10% dose levels worked better than conventional sprays. The new technology may also slow down the development of insecticide resistance in corn rootworms. For more information see www.trece.com/

...following £1.5 M of research in the UK it has been concluded that strobilurin resistance to wheat mildew is now widespread.

...research by the USDA ARS has shown that treating apple trees with processed kaolin produces larger fruit. This may be due to reflective properties of the material reducing leaf temperature and heat stress. Other US studies show that kaolin applications reduce insect attack. It is hoped that kaolin film can be used to reduce mildew infection.