

Flazasulfuron, the new grapevine herbicide

Flazasulfuron was discovered by ISK Biosciences and developed by Zeneca under the brandnames Mission and Katana. It is the first member of the sulfonylurea family of chemicals to have shown good selectiveness on vines. In France, it is approved for use as a vine herbicide at doses of 50 g/hectare. It is absorbed through the leaves and roots of both monocotyledons and dicotyledons and need only be applied once. It is the first sulfonylurea capable of rapid detoxification in vines. Flazasulfuron like other sulfonylureas inhibits the synthesis of 3 essential amino acids in susceptible plants. Zeneca's herbicides Mission and Katana are sold in water-dispersible granular formulations and contain 25% flazasulfuron.

Biofumigants

Australian research at CSIRO Plant Industry Communication has revealed that glucosinolates from brassica crops such as rape and mustard reduce the growth of soil-borne pathogens such as those causing take-all disease in cereals. Glucosinolates in the roots breakdown in the soil to produce isothiocyanates, potent fumigants. These natural pesticides have been termed biofumigants. The findings explain why brassica crops such as oilseed rape are good break crops. For further information email info@pi.csiro.au

Research agreement between DLO and AgrEvo

Stiching Dienst Landbouwkundig Onderzoek (DLO) and Hoechst Schering AgrEvo have signed a research agreement concerning the functional analysis of the genes of several major plant species. The agreement involves DLO's Centre for Plant Breeding and Reproductive Research in Wageningen, in the Netherlands and AgrEvo's Plant Genetic Systems based in Gent, Belgium.

Elf Atochem find

Aminoguanidine bicarbonate (AGB) has been developed by Elf Atochem specifically as a synthesis intermediate. The company says AGB is designed for the agrochemical and pharmaceutical industries, in specific applications such as the synthesis of fungicides, in addition to various chemical synthesis operations to achieve purification stages in wide-ranging areas.

AgrEvo wins pesticide packaging award with Echo System

A packaging design award has been won by AgrEvo for the Echo System pesticide container. The returnable 25-litre polythene keg has a stainless steel valve that is compatible with transfer systems using the Micromatic type valve; spillage and waste on the farm are minimised. So far only two products are available in the containers, Cheetah (fenoxaprop) and Arelon (IPU).

Biodegradable decoys

Biodegradable apples that attract apple maggot flies (*Rhagoletis pomonella*) and other insect pests in orchards has been patented by USDA-ARS scientists from the National Center for Agricultural Utilization at Peoria, Illinois, along with colleagues at the University of Massachusetts at Amherst, Michigan State University at East Lansing and the Biotechnology Research and Development Corporation at Peoria. The inside of the spherical decoys consist of sugar, high-fructose corn syrup, water, corn flour and sorbic acid. The outside is a coating of sugar, latex enamel paint and an insecticide (e.g. imidacloprid). Preliminary field tests in Massachusetts showed that the decoy fruit, hung in trees at the edge of orchards, may provide an alternative to repeated chemical insecticide sprays, maintaining 70% of its insect-killing power after 3 weeks. In other tests, a similar decoy protected apples as well as 3 spray applications of azinphos-methyl. Decoys are also being designed and tested against related insects such as blueberry maggot fly, the cherry fruit fly and the walnut husk fly.

Couch and brome control for wheat

Monsanto has developed a new sulfonylurea herbicide code named MON36500 (sulfosulfuron), for which the company claims couch and brome control in winter wheat, plus useful broad-leaved weed action from spring spraying. The ingredient is already available in Ireland as Monitor and UK approval is planned for the spring 2000 growing season. It does not kill couch or brome but suppresses them, keeping the weed below the crop canopy at critical growing times. Yield response is claimed to be up to 20% from brome control and 40% from couch control.

Methyl bromide replacements

...1,3-D

Mixtures of 1,3-dichloropropene (1,3-D or Telone) and chloropicrin are promising methyl bromide replacements, but regulatory controls for 1,3-D are causing concern. The US-EPA requires a 300 foot buffer zone, which could be overcome with new methods of application. The worker handling problems may be reduced with drip irrigation systems or filtered and air conditioned cabs.

...biological alternative

The Institute of Arable Crop Research at Rothamsted, UK, is coordinating research on developing a sustainable alternative to the use of methyl bromide in southern Europe for fumigating soil and controlling nematodes. The research, using the fungus *Verticillium chlamydosporium* is being carried out in Italy, Spain, Portugal and Greece and is financed by the EU.

...dazomet

According to Hortichem, the use of contractor-applied Basamid (dazomet) to fumigate arable soils is a realistic alternative to threatened methyl bromide fumigation. Growers should use an approved contractor however. The company has developed procedures which are to form the basis for best practice for its approved contractors.

Larger grain borer moving south in Africa

The Plant Protection Research Institute in South Africa has reported that the larger grain borer (*Prostephanus truncatus*) has been found in the Kruger National Park near the border with Mozambique. The South African authorities have drawn up contingency plans to control this pest of stored maize; increased monitoring through the use of pheromone traps; ensuring stocks of insecticide are available; and training extension staff and scientists in how to recognise and deal with the problem. If not controlled the pest could spread throughout South Africa, wherever maize is grown, causing widespread stored grain losses.

Oilseed rape trial reveals growth regulation effects of fungicide

Trials by the UK's National Institute of Agricultural Botany (NIAB) suggest that Folicur (tebuconazole) fungicide offers support for weak-stemmed oilseed rape

varieties. The Apex variety surpasses everything else when it comes to a combination of stem stiffness and lodging resistance but some of the more recently introduced varieties are certainly not as stiff and this could be restricting their uptake. Trials indicate that applying Bayer's Folicur in the spring could offer many benefits. Spring application of Folicur was shown to increasing lodging resistance of all five varieties tested. Disease control was also improved. Further trials will be carried out but Bayer is confident that Folicur improves the standing ability of weak-stemmed varieties.

Contribution of pesticides in control of New York virus outbreak

Pesticides gained valuable publicity when New York was hit recently by an outbreak of West Nile virus, the first time the deadly ailment has been seen in the Americas. The city mayor has been at the forefront in encouraging the spraying of insecticides against the mosquito vectors: malathion was applied from the air in New York, sumithrin from the air in Westchester County and resmethrin from truck-mounted foggers in Connecticut. Pest control companies increased their business without marketing effort or the need to defend their products. It is feared that regions further south of the affected area may suffer the disease as birds carrying the mosquitoes migrate south for the winter and floods left by Hurricane Floyd provide harbourage for the insects.

Blackgrass weed fight

BASF's new herbicide, tepraloxymid, offers growers a new weapon in the fight against blackgrass and couch in broad-leaved crops. It might be especially useful for growers combating resistance since tepraloxymid is much more active than fops and other dms. Trials show 83% control on all populations of blackgrass. Approval for use on sugar beet, beans, peas and winter oilseed rape is expected for second quarter 2001.

Neem pesticides

...the Indian Institute of Chemical Technology (IICT) Hyderabad was issued US patent number 5856256 for a pesticidal dry powder formulation enriched in azadirachtin up to 88% and an emulsifiable concentrate up to 30% of azadirachtin from neem seed/kernel. The new pesticidal formulation will be used in pest control formulations developed for agriculture, veterinary and public health applications.

...a new bioinsecticide containing different concentrations of neem oil and neem seed extract has been developed to combat *Latoia lepida*, a phytophagous pest commonly found in mango, cassia and in some agricultural and horticultural crops. Laboratory experiments showed that larvae infestation could be controlled through the application of 0.25% neem oil or 0.5% concentration of neem seed kernel extract. The bioinsecticide is also economically viable and environmentally safe.

Bioinsecticide wards off grain pests

Scientists at the Central Food Technological Research Institute (CFTRI) in Mysore have prepared a new eco-friendly bioinsecticide that is effective against stored food grain pests such as rice weevil, grain borer and rust-red flour beetle. The bioinsecticide is a dried powder extract from the roots of *Decalepsi hamiltoni* (also called swallowroot). At 5% concentration, the insecticide was 96% effective and 99.97% effective at 10% concentration.

Imidazolinone-tolerant sugar beet

A licensing agreement for the application of new technology to control weeds in sugar beet has been signed between Michigan State University and American Cyanamid. Without the use of genetic modification, new varieties will be developed which will be tolerant to imidazolinone herbicides produced by American Cyanamid. These are broad-spectrum products which are environmentally compatible. An application for approval of the use of imidazolinone on sugar beets has been made by American Cyanamid. The development of the tolerant varieties will remove the need for a lengthy rotation period when growing sugar beet on land used for crops treated with imidazolinone herbicides.

FOCUS ON BIOPESTICIDES^{PLUS}

Focus on Biopesticides^{PLUS} is an international newsletter that reports on uses of natural organisms, their genes and their secondary metabolites in crop protection. It provides vital production, market, company and regulatory news. The newsletter is edited by Len Copping, who is well-known for his work in this area, with analysis and comment provided by him and other experts in the field. Information is drawn from technical and commercial sources, including company literature, press releases and market research reports, in addition to journals. **Focus on Biopesticides^{PLUS}** is essential reading for all those working in this sector.

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