Media Briefing

June 30 2004

Bayer's pesticides

Why it is important that Bayer's pesticide safety data is freely available

Introduction

This briefing gives background information on Bayer's pesticide operations around the world and looks at some of the available health and environmental safety information for three of their pesticides. It suggests that companies who market such toxic products should be obliged to make safety data available to any citizen who might be exposed to the pesticide in food, water and the environment, and to researchers studying their impact on health and the environment. It also contrasts secrecy in pesticide approvals with public access arrangements that the same companies have to comply with in the GMO regulatory process.

Bayer's Global Pesticide Business

Bayer's pesticide production is carried out by Bayer CropScience, which also deals with their GM crop development and marketing. This company was formed in 2002 by a merger with Aventis CropScience. This merger followed a long series of acquisitions to the point where Bayer CropScience has become the second largest agrochemical and seed company in the world, behind Syngenta, with a turnover forecast of seven billion Euros in the medium term. The first annual accounts for the company[i] show sales of 5.764 billion Euros. Crop protection products (pesticides) accounted for 83 per cent of sales.

Through the merger with Aventis, Bayer have also acquired a number of pesticide products and active ingredients, and genetically modified crops. Thus Bayer have GM herbicide tolerant crops being commercially grown in North America (maize and oilseed rape) and also have a limited number of commercial approvals for cultivation in the European Union for maize and oilseed rape, both tolerant to glufosinate ammonium (brand name Liberty in the EU), with several applications pending. In March 2004 Bayer CropScience withdrew the application for their one remaining GM maize variety for the UK's National List (ChardonLL) despite receiving the go-ahead from the UK government earlier in the month[ii]. Bayer claimed that ChardonLL was no longer economically viable because of regulatory delays.

Bayer's Global Pesticide Record

Bayer market pesticides throughout the world. Their record of safety and stewardship is far from

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unblemished. For example:

PERU

In October 1999 24 children died when they drank a powdered milk substitute that had been contaminated with Bayer's insecticide methyl-parathion, categorised by the World Health Organisation as 'Extremely Hazardous'. The milk powder had been accidentally mixed with the insecticide which resembles milk power. Bayer was the main importer of the product which was sold in small plastic bags and labelled in Spanish only not, native languages, and carried drawings of healthy looking carrots and potatoes on the containers. Although Bayer denies responsibility a Peruvian Congressional Investigative Subcommittee report concluded that there was significant evidence of responsibility on the part of Bayer (and the Peruvian Government). The report recommends that the government and Bayer indemnify the families of the dead children[iii]. A recent study conducted with support of the Pan-American Health Organization in the seven Central American countries estimates that there are 400,000 pesticides poisonings per year in Central America alone.

NEPAL

In 2001 Greenpeace surveyors found organo-mercury compounds manufactured by Bayer in a pesticides dump near the Nepalese town of Kathmandu. The product has been banned in the EU since 1988 because of its high toxicity. The cost of safe disposal of the Bayer product and other obsolete pesticides from the warehouse where they were found was borne by the Nepalese authorities[iv].

CAMBODIA

Bayer market methyl parathion in Cambodia under the brand name Folidol. Despite claims on the Bayer website that "*product stewardship does not end at the factory gate. At Bayer, environmental and safety aspects of a product are critically examined for the entire life of the product"*, much of Cambodia's Folidol is labelled in Thai and therefore cannot be read by local people[v]. This failure to communicate with users increases the chances of accidental poisoning.

Bayer's Problem Pesticides

Bayer CropScience have a large range of pesticides including some of the most toxic still on the markets of the world. Below are three case studies illustrating why individuals using the products or being exposed to them via spray drift, food residues or in drinking water have a right to know what the possible environmental and health effects might be. Legal or trade union advisors to people exposed to Bayer's products and academics studying the impacts of pesticides on health or the environment might also be interested in seeing data used to support their approvals.

ALDICARB

Aldicarb is a carbamate pesticide classified by the World Health Organisation (WHO) as "*extremely hazardous*", and a suspected endocrine disrupting chemical[vi]. It has been banned in Finland and Sweden, and Germany has banned it from use in all catchment areas for drinking water supply. It has been banned or severely restricted in another 10 countries worldwide[vii]. Aldicarb was to be

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withdrawn throughout the European Union by the end of 2004, but lobbying resulted in a compromise, with certain "essential uses" being granted until December 2007. In the UK it is still authorised for use on potatoes, carrots, parsnips, onions and ornamentals.

Aldicarb is used to kill insects and nematodes on crops. It is applied to the soil, but is taken up by the plant roots and circulated around the whole plant, so peeling does not make much difference to residue levels. Residues of aldicarb have been found in both new and main crop potatoes and carrots, mainly from the UK[viii]. In a special survey in 1999[ix] sampling 1000 individual potatoes, the level of residues varied between potatoes by up to twelve times. The levels in some samples exceeded the MRL, with a sample of microwaved potatoes containing such a high level that they exceeded the safety standard for toddlers and infants.

Historically, aldicarb has been implicated in a variety of poisoning incidents; over 1000 people in the USA became ill in July 1985 after eating watermelons contaminated with aldicarb[x], and at least 30 people were poisoned in Ireland in 1992 after eating contaminated cucumbers[xi]. Aldicarb's US registration for potatoes was voluntarily withdrawn after problems arose with residues[xii], and it is now only licensed for use on seed potatoes or as a soil treatment prior to planting[xiii]. It is no longer used on bananas after similar problems were encountered[xiv].

Aldicarb is a broad spectrum insecticide, so it kills beneficial insects as well as pests. It is dangerous to game, wild birds and animals, fish and other aquatic life[xv]. It has been estimated that one granule of aldicarb product may be enough to kill a small bird[xvi]. Aldicarb has high solubility and mobility in soil which can lead to adverse effects on aquatic ecosystems and contamination of groundwater resources[xvii].

IMIDACLOPRID

Imidacloprid is a systemic insecticide, chemically related to nicotine, which acts on the insect nervous system. Bayer is the major manufacturer of imidacloprid, marketing products such as Admire and Gaucho in around 120 countries on over 140 crops[xviii]. With annual sales of more than 600 million Euros in 2001, imidacloprid is one of the top selling products of Bayer CropScience[xix].

Imidacloprid has come under heavy fire in France after suspicions were raised about its impact on honey bees. Gaucho (containing imidacloprid), a seed treatment for control of aphids, has been suspended for use on sunflowers in France since 1999. Production of honey in France fell from 35,000 tonnes per year in the early 1990s to about 25,000 tonnes by 2000, according to the National Union of French Beekeepers (UNAF)[xx]. Beekeepers had noted that many bees were not returning to hives during the period when sunflowers started blooming, and only insects collecting nectar from sunflowers treated with Gaucho seemed to be affected[xxi]. Similar concerns have been raised in Canada, where treatment of potatoes with soil applications of Admire (containing imidacloprid) are thought to have led to sublethal residues in the pollen and nectar of the following clover and canola crops[xxii].

Recent research has shown that imidacloprid is translocated through the plant to contaminate pollen[xxiii], which could cause deleterious effects on honeybees[xxiv]. Studies have also shown that imidacloprid can cause reduced learning performance[xxv] and transitory loss of communicative capacity, which could result in the observed difficulty returning to hives[xxvi].

Bayer have always denied that imidacloprid is responsible, and a recent French Agriculture Ministry

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report found no specific links between honeybee mortality and imidacloprid, but the beekeepers union is still unconvinced[xxvii] and it is now thought that the replacement insecticide fipronil is also having an impact on bee populations[xxviii], possibly accounting for the fact that the ban of the use of imidacloprid on sunflowers has not resulted in an improvement in bee populations[xxix]. Finally in May 2004 French Agriculture Minister Herve Gaymard announced it planned to stop use of the Gaucho pesticide to treat corn seeds until it is reviewed by the European Commission in 2006.

The effects of imidacloprid are not restricted to bees. It is also acutely toxic to earthworms and a variety of predatory insects including mirid bugs, ladybirds and lacewings[xxx]. It is toxic at extremely low concentrations to some aquatic animals, including some freshwater and estuary crustaceans[xxxi]. It is highly toxic to certain bird species, including house sparrows and pigeons, and can cause abnormal behaviour at sublethal doses. Other problems can include eggshell thinning, decreased weight and reduced egg production and hatching success[xxxii].

Imidacloprid has the potential to leach to groundwater, and its high solubility and mobility are could lead to transport to surface water by dissolved runoff[xxxiii]. Residues of imidacloprid have also been found on lettuce and basil imported from Spain and Israel[xxxiv].

ISOPROTURON

Isoproturon (IPU) is a residual urea herbicide used on cereals. It is marked by Bayer in products such as Tolkan, Ingot, Favelin and Panther. It was the most extensively used herbicide on arable crops in the UK in 2002, principally applied to cereals in England and Wales[xxxv]. However, it is also one of the most frequently occurring pesticides in surface freshwaters in the UK, ranking third after diuron and mecoprop in 2002[xxxvi]. For this reason it has been the subject of an industry-led stewardship scheme, the 'Voluntary Initiative', aimed at improving its handling and management. The scheme has now been in operation for several years, but has so far failed to deliver any long-term improvement in pollution levels[xxxvii].

Contamination is not restricted to surface waters – in 2001 more than 1 per cent of groundwater samples contained isoproturon over the EU Drinking Water Directive limit of 0.1 micrograms per litre[xxxviii]. Once it has contaminated water sources, it can be hard to shift: its estimated degradation half life in water is 140 to more than 365 days[xxxix]. Thames Water has been particularly affected by IPU, estimating that every third field in the Thames catchment may be treated with the herbicide, leading to concentrations in the river peaking at 6-25 times the drinking water limit[xl]. Although it can be removed by ozone treatment, this is expensive to run and can lead to problems with formation of the by-product bromate[xli]. Thames Water has been calling for a ban, after losing faith in the stewardship programme[xlii] although they continue to participate in the Voluntary Initiative through the presence of UK Water on the steering committee. Research sponsored by Aventis CropScience in 1999 and 2000 demonstrated the capacity for IPU to leach from arable fields following winter rains[xliii]. The IPU loadings in the water course at the exit to the study catchment increased by 981% between 1998/99 and 1999/2000 because rainfall was much heavier immediately after the IPU was applied in the second year. This was despite successful attempts to reduce the amounts of IPU entering the river from the farmyard area by shifting spray filling and cleaning operations from the paved area, which drained directly into the water course, to a hardcore area.

IPU's extensive use and contamination of water resources is not confined to the UK. It has been detected in groundwater and surface water resources in European countries including Belgium, France, Germany and the Netherlands[xliv]. These problems have led to its identification as a priority

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substance under review in the EU Water Framework Directive[xlv], for which water quality standards and emission controls must be adapted. This may eventually lead to its phasing out in Europe. Its use has been prohibited in Denmark since 1999[xlvi] after frequent detection in both surface water and groundwater[xlvii]. Isoproturon is also listed as a candidate substance for selection, assessment and prioritisation under the OSPAR Strategy on Hazardous Substances[xlviii].

Isoproturon is classed as very toxic to aquatic organisms, and may cause long-term adverse effects in the aquatic environment[xlix]. It is also classified by the EU as a possible carcinogen[l].

Pesticides, GM, Secrecy and Bayer

Bayer have twice tried to prevent Friends of the Earth and others gaining access to data supporting their application to use glufosinate ammonium on GM herbicide tolerant crops by means of court actions in 2001 and 2003. Both actions were eventually settled out of court. Most recently, Bayer applied for an injunction to stop Friends of the Earth telling members of the public how to apply for access to information in different countries around the world. Friends of the Earth robustly defended the case and eventually Bayer were forced into a humiliating climb-down.

In contrast, copies of data supporting the applications of Bayer's GM herbicide crops under the EC GMO Deliberate Release Directive 2001/18 are freely available for the public to comment on during the approval process for marketing approvals. Indeed DEFRA will inform members of the public via email when the dossiers are available.

The secrecy involved in pesticide applications and approvals is archaic. Friends of the Earth are calling for the EU to regulate so that access to data is available across the whole EU for any person. The only data which should remain confidential is the details of manufacturing processes and formulations which would be valuable to other pesticide manufacturers.

Conclusion

Pesticides are highly toxic chemicals which can have a dramatic effect on human and animal health and the environment. Farmers and agricultural workers are exposed to these products on a regular basis, as are the environment and public via food, water and spray drift. The full impact of pesticides has often failed to emerge during the regulatory assessments, and once "safe" pesticides have subsequently had to be withdrawn on safety grounds. People therefore have a right to know what evidence exists to say that approved products or applicant products are safe and will not cause long-term problems to health or the environment. Bayer's pesticide product range illustrates this point only too well and it is high time that all pesticide safety data is publicly available on request. Bayer need to realise that we are now in the 21st century and that the continuation of legal threats and actions to block public access to data will rapidly turn their company into a laughing stock.

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