

THE JUDICIAL REVIEW OF PESTICIDES AND BYSTANDER EXPOSURE BY MR JUSTICE COLLINS

Anti-pesticide campaigner wins High Court ruling

Some comments on the judicial review, by Graham Matthews

An anti-pesticide campaigner, Georgina Downs, recently won a judicial review of the pesticides policy of the UK Department for Environment, Food and Rural Affairs (Defra) (www.bailii.org). She claimed that her long-standing health problems were the result of pesticide exposure due to living adjacent to fields of arable crops regularly sprayed for over 24 years. She also argued that there continues to be an inherent fundamental failure at all levels to protect rural residents and communities in the UK from exposure to pesticides. Essentially the review concerned the alleged failure of Defra to comply with the relevant European Commission (EC) Directive (91/414/EEC) as the system in the UK did not provide the necessary protection of public health. Defra had argued that its approach to the regulation and control of pesticides was “reasonable, logical and lawful”, but the High Court judge ruled she had produced “solid evidence” that residents had suffered harm.

Since the 1980s, the UK has had one of the most comprehensive pesticide regulatory regimes in the world. Many pesticides used in other parts of the world have not been registered in the UK due to the careful consideration of the toxicological data by the independent Advisory Committee on Pesticides (ACP) established by the UK Government. Furthermore, the majority of operators professionally spraying crops in the UK hold a certificate of competence. Currently operators covering 85% of the arable area undertake regular annual refresher training while an annual sprayer test is conducted on 13,000 sprayers representing nearly 90% of the sprayed area.

Part of the judicial review discussed how ‘harmful’ should be defined as the EU Directive requires that a pesticide must

not be harmful to human health. The judge unfortunately interpreted the wording in absolute terms, without considering assessments of risk. Some people do suffer transient effects, such as itching skin, but cases of anything more harmful following good agricultural practice have been negligible in the UK as indicated by relatively few incidents reported to the Pesticide & Incidents Appraisal Panel (PIAP) and in the extremely small number of cases that were noted in an HSE report aimed at exploring the possibility of gathering data on possible health effects of pesticides reported to general practitioners (GPs). Cases assessed by PIAP are, as the judge noted, recorded as ‘mild’ (requiring no or self-treatment), ‘moderate’ (going to a GP or hospital accident department) or ‘serious’ (requiring in-patient treatment) – the majority of cases being classified as ‘mild’. Generally serious incidents have been avoided as pesticides defined by WHO as Class 1a ‘Extremely hazardous’ have not been approved for use as sprays in the UK, in contrast to many other countries.

Claims were also made that numerous illnesses are due to exposure to pesticides and that the bystander assessment of exposure to pesticides was only relevant for an acute effect following a brief exposure to one pesticide. In court it was claimed that residents suffer chronic effects due to prolonged exposure, often to many different pesticides. Since these concerns emerged in 2002, further experiments have been carried out which confirm that the amount of pesticide that travels as spray drift beyond a few metres downwind of a treated field is extremely small compared with the amount that can be deposited on a person close to a sprayer. Most spray that ‘drifts’ beyond a field is deposited within 5 metres of an arable crop sprayer which is why a buffer zone is used to protect water adjacent to fields. A wider buffer zone is needed around orchards where different types of sprayer are used. However, buffer zones are set to protect aquatic wildlife which may be at risk from certain pesticides – pesticides would simply not be approved if a buffer zone were required to ensure human safety. Although a small volume of spray remains airborne in small droplets and is dispersed over a much wider area, in recent years this proportion has been reduced by the introduction of new spray nozzles (e.g. air-induction nozzles – The amount of drift is essentially a function of the size of droplets in a spray, but is increased by faster tractor speed, increased wind velocity and higher boom height. Air induction nozzles produce a coarser spray with a much lower proportion of small droplets liable to drift) that can reduce spray drift



A farmer using a downwardly directed airstream to project spray into a crop and minimise drift (courtesy of Alison Craig)

dramatically. Some volatile pesticides may also be dispersed as vapour from spray deposits, but physical characteristics of pesticides are considered by the ACP so that highly toxic and volatile substances are not approved. It should be noted that efforts to kill mosquitoes around housing in the tropics (where dengue fever is transmitted by mosquitoes) using truck-mounted fogging equipment producing large quantities of very small spray droplets have virtually no impact on the insects already indoors as very little spray actually enters through doorways or windows. Thus, residents at greater distances downwind of the 8 metres set for bystanders studies will be far less exposed to spray drift. However, those living in farming areas could bring pesticides into their houses on their clothes, and especially shoes if they walk over a freshly sprayed area.

In practice, many of the different illnesses that were attributed to pesticides in the video prepared by Georgina Downs and shown to the judge are also reported by people in towns and cities (One important factor largely ignored by the general public is the pollution of air by vehicle exhausts, which emit a high proportion of extremely small particles that can be inhaled. At least governments eventually banned the use of lead in petrol, but other components of vehicle exhausts could also be affecting people's health), whose exposure to pesticides is limited primarily to products available for domestic use. Some people may be more sensitive to certain chemicals than others and this is often shown by an allergic reaction. Illnesses, such as multiple chemical sensitivity syndrome (MCS) and chronic fatigue syndrome (CFS) have been allegedly caused by exposure to low concentrations of pesticides, but it is extremely difficult to associate individual health problems with precise exposure data, especially when it is said to occur over a long period. The judge recognised that it is not easy to attribute a particular cause to many chronic illnesses, and a view that a cause has been identified may be wrong. But he felt that there was evidence that some long-term illnesses may be attributable to exposure as the "effects do in many cases amount to more than merely transient and trifling harm." Nevertheless, the fact that someone living near a field that is sprayed subsequently contracted an illness does not demonstrate a cause and effect relationship.

The ACP agreed with a number of the recommendations of the Royal Commission on Environmental Pollution (Royal Commission, 2005) but considered that a 5 metre buffer zone alongside residences was a disproportionate response in view of the scientific uncertainty. In contrast, the judge said that amendments to the Government's pesticide rules could include the extension of buffer zones, to cover residents and other sensitive areas.

Recognising that people are concerned about pesticide sprays, the National Farmers Union (NFU) have introduced The Good Neighbour Initiative in 2007 to encourage farmers

to explain why they need to spray, when and what types of pesticide are applied. The scheme encourages improved communication so that anyone living near a farm can meet farmers and be informed of the types of pesticides used in their area and agree practical measures in response to their concerns. Giving a precise time of application may not always be feasible, as farmers need to respond to crop monitoring and apply a pesticide only when required and when weather conditions permit an application. The use of sprays, timed according to a calendar schedule, does not fit integrated pest management principles.

The judge in his ruling observed that under the 1986 Control of Pesticide Regulations beekeepers must be given 48 hours notice if pesticides harmful to bees (this covers certain pesticides with a specific warning) were to be used and thought it was difficult to see why residents should be in a worse situation. What he did not take into consideration was the vast difference in the risk of exposure of bees to potentially lethal insecticide deposits immediately following treatment of a crop when actively foraging for pollen compared to people well away from the farm in periods well after the immediate application. Bees only weigh a little more than a tenth of a gram (A worker bee on emergence can weigh 145 mg, but the average is probably nearer 100 mg) in contrast to a baby of say 3 kg – a difference in weight of over 20,000 times. For an adult the difference is more like 300,000 times.

The judge said Hilary Benn, Environment, Food and Rural Affairs (Defra) Secretary, must now rethink and reassess the risks and how to safeguard the public against them.

Defra has said that it will look at this judgment in detail to see whether there are ways in which we can strengthen the system in the UK. It will also consider whether the judgment could have implications for other EU member states. It will be interesting to see what happens next as the judge's ruling, influenced by anecdotal evidence, challenges the science-based risk assessment model that is used to underpin other human activities, such as the regulation of vehicles.

References

Royal Commission. 2005. *Crop spraying and the health of residents and bystanders*. Report of the Royal Commission on Environmental Pollution, London, UK. www.bailii.org/ew/cases/EWHC/Admin/2008/2666.html (viewed 1 November 2008)

Graham Matthews has worked with pesticides for over 40 years and was a member of the ACP for 5 years. He is author of *Pesticides: Health, Safety and the Environment*. He is currently helping Cameroon with vector control, including indoor residual spraying to combat malaria.

Similar articles that appeared in *Outlooks on Pest Management* include – 2004 15(3) 108; 2005 16(6) 244; 2006 17(2) 60; 2006 17(2) 62; 2006 17(2) 66; 2006 17(2) 71; 2007 18(1) 23; 2007 18(2) 71; 2008 19(1) 11; 2008 19(3) 100