



# **PESTICIDE INCIDENTS REPORT 1997/98**



***Field Operations Directorate Investigations  
1 April 1997 - 31 March 1998***



# Introduction

1 This report gives information on alleged incidents involving ill health and other pesticide-related complaints which the Field Operations Directorate (FOD) of the Health and Safety Executive (HSE) investigated between 1 April 1997 and 31 March 1998.

2 It includes:

- statistical information on these incidents and complaints and on enforcement;
- a report on ill-health incidents reviewed by HSE's Pesticide Incidents Appraisal Panel (PIAP);
- environmental and other complaints not alleging ill health;
- case studies.

3 Investigation of these incidents and complaints is not all that FOD does in pesticide enforcement. FOD inspectors also spend a lot of time providing advice and guidance during routine visits.

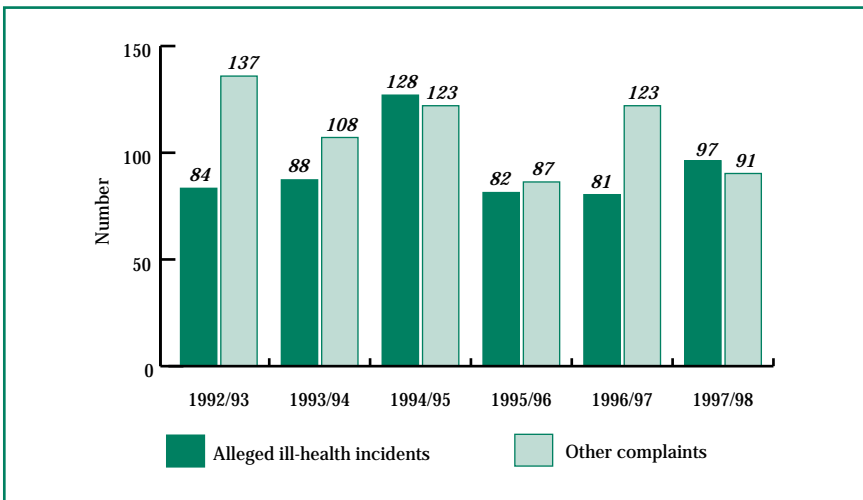
4 When investigating pesticide incidents and complaints, field professional staff are concerned with the health of people at work, of members of the public who may be affected by work activities, and with the effects of pesticides on the environment. The investigation of incidents often requires expertise from the range of disciplines within HSE. Inspectors, specialist inspectors, Employment Medical Advisory Service (EMAS) staff and the Health and Safety Laboratory may all contribute. FOD staff also liaise locally with other bodies who have enforcement responsibilities for certain pesticide activities, such as the Agricultural Departments, local authorities and the Environment Agency. This helps to ensure a co-ordinated approach.

5 The report does not cover investigations for which these other bodies are the enforcing authority. Products such as sheep dips which are subject to the Medicines Act 1968 are also outside the report's remit.

6 The report and details of individual incidents will be presented to the Advisory Committee on Pesticides (ACP) to help inform the pesticides approvals process.

# Statistical summary

7 During 1997/98, 188 incidents and other complaints were reported, 97 of which alleged ill health. The Pesticide Incidents Appraisal Panel were able to confirm a probable link between the alleged ill health and its related incident in about one quarter of the cases considered.



**Figure 1** FOD Inspectorate alleged ill-health incidents and other complaints 1992/93-1997/98

8 Figure 1 shows how the numbers of incidents and complaints compare with previous years.

9 The courts heard eight informations during the year compared to 11 in 1996/97. The average fine imposed by the courts per information on conviction was £1175 for 1997/98 compared to £583 for 1996/97. Inspectors issued 212 enforcement notices under the Food and Environment Protection Act 1985 (FEPA) or Control of Pesticides Regulations 1986 (COPR) compared to 185 in 1996/97.

10 These enforcement figures are provisional. They may be revised before publication in the Health and Safety Commission's 1997/98 Annual Report.

11 Inspectors also enforce pesticide issues under more general health and safety laws such as the Control of Substances Hazardous to Health Regulations 1994 (COSHH). However this report does not include enforcement figures for this legislation.

# Alleged ill-health incidents

## *The Pesticide Incidents Appraisal Panel*

12 HSE's Pesticide Incidents Appraisal Panel (PIAP) considers all investigated incidents where the use of a pesticide is alleged to have caused ill health. The panel receives as much information as possible about each incident, including the results of any examination or investigation carried out by the National Health Service and others involved in the care of individuals if the complainant gives consent.

13 The main purpose of the panel is to provide an overview of alleged ill health attributed to pesticide exposure so that new issues and trends can be identified, and to inform the pesticides approval process. Since 1995/96 this has been aided by a database of PIAP cases developed by HSE's Epidemiology and Medical Statistics Unit, on which the following analyses are based. Appendix 1 explains the appraisal system and the constitution of the panel.

## *Summary information on alleged ill-health incidents for 1997/98*

14 Table 1 shows the cases considered by PIAP in 1997/98 broken down according to the panel's assessment (using the classification scheme in Appendix 1) and the employment status of the people involved.

	Total		Employees/ self-employed		Members of public	
	Incidents	(People)	Incidents	(People)	Incidents	(People)
Confirmed	3	(3)	2	(2)	1	(1)
Likely	8	(12)	0	(0)	8	(12)
Open assessment (i)	3	(3)	1	(1)	2	(2)
Open assessment (ii)	4	(4)	0	(0)	4	(4)
Unrelated	6	(7)	3	(3)	3	(4)
Insufficient information	20	(25)	1	(1)	19	(24)
Pending*	53	(186)	8	(16)	45	(170*)
<b>Total</b>	<b>97</b>	<b>(240)</b>	<b>15</b>	<b>(23)</b>	<b>82</b>	<b>(217*)</b>

\*Figures for people include one (pending) incident involving 94 individuals.

**Table 1** *Number of alleged ill-health incidents and people affected analysed by PIAP decision and employment status 1997/98*

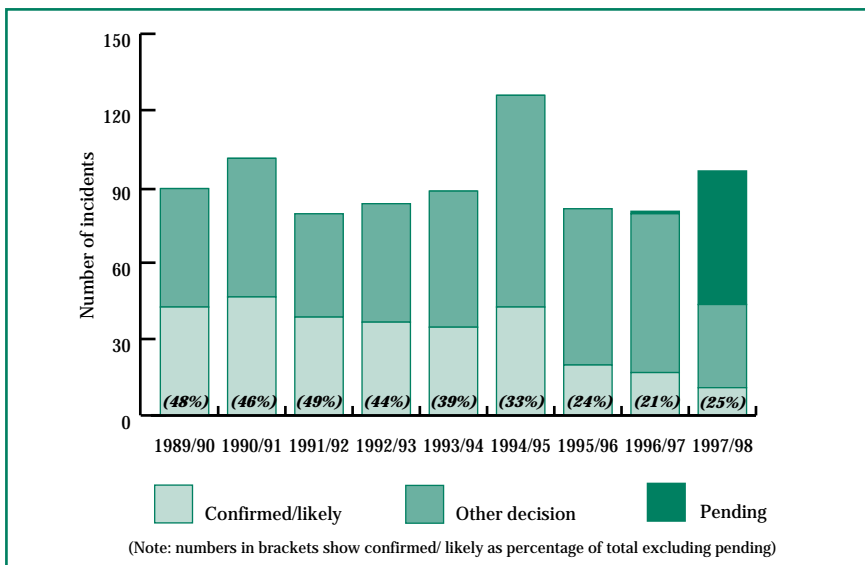
15 In three of this year's 97 cases the alleged ill health reported was confirmed as being linked to the pesticide exposure; in a further eight cases the link was assessed as likely. Two of the three people involved in the 'confirmed' cases were employees but all of the 12 people involved in the 'likely' cases were members of the public, as were the majority of the people involved in all cases reported to the panel. The panel decision is still pending on 53 of the 97 cases. One of these cases was an alleged incident involving 94 individuals, which is the reason for the large increase in the total number of people involved in incidents reported this year.

16 Panel decisions for cases identified as 'pending' in last year's report (including four carried forward from the previous year) are summarised in Appendix 2 and are included in the trends information presented and discussed in paragraphs 17 and 18. A detailed breakdown of the 1997/98 incidents reveals that the agricultural sector (71% of cases) and crop-spraying activity (64%) predominated, as they have done since the panel began its work. The Pesticide Incidents Report 1995/96 provides more historical details.

### *Overall trends in alleged ill-health incidents*

17 Figure 2 shows the number of incidents each year back to 1989/90, analysed according to whether PIAP classified the link between pesticide usage and the alleged ill health as 'confirmed' or 'likely', or came to some other decision; pending cases are shown separately. A review of PIAP in 1994 changed the classification scheme so that the 'confirmed' category is now narrower - some cases which, before 1994/95, would have been classified as such are now classified as 'likely' - but this does not affect the total figure for 'confirmed' plus 'likely' cases.

18 The total number of alleged ill-health incidents in 1997/98 was rather higher than in the previous two years but was not exceptionally high from a historical perspective. The proportion of the total, excluding pending, cases which the panel assessed as 'confirmed' or 'likely' was, at 25%, similar to the previous two years. The proportion for 1996/97 has been revised down from 33% to 21% as a result of decisions that were taken on cases which were previously classed as pending. For the last three years - 1995/96 to 1997/98 - the proportion of confirmed or likely cases has been considerably lower than in any of the previous years since the panel began.

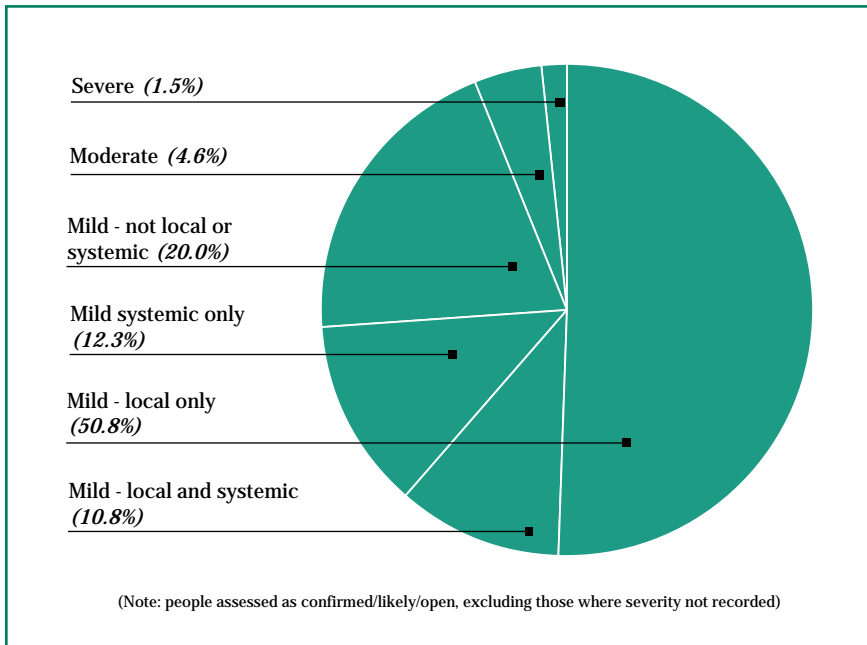


**Figure 2** Trends in PIAP decisions

### Recent data on ill health

19 Since 1994/95, the panel has also made decisions on the type and severity of the ill health experienced by most people whose ill health was assessed as ‘confirmed’ or ‘likely’. Some people with an open assessment were also included. Symptoms were recorded as ‘acute’ and/or ‘chronic’, ‘local’ and/or ‘systemic’ and their severity as ‘mild’ (requiring no or self-treatment), moderate (GP or Hospital Accident and Emergency) or ‘severe’ (in-patient treatment). Figure 3 summarises this information for the two years 1996/97 and 1997/98 combined. It incorporates the panel’s assessments of people whose cases were pending in last year’s report and have since been assessed as confirmed or likely.

20 Nearly all of the people affected in 1996/97 and 1997/98 suffered only mild symptoms, in most cases local rather than systemic. For most of the remainder, the symptoms were classified as moderate. There was one case where the ill health was assessed as severe.



**Figure 3** Severity of ill health experienced 1996/97-1997/98

### Recent data on pesticides

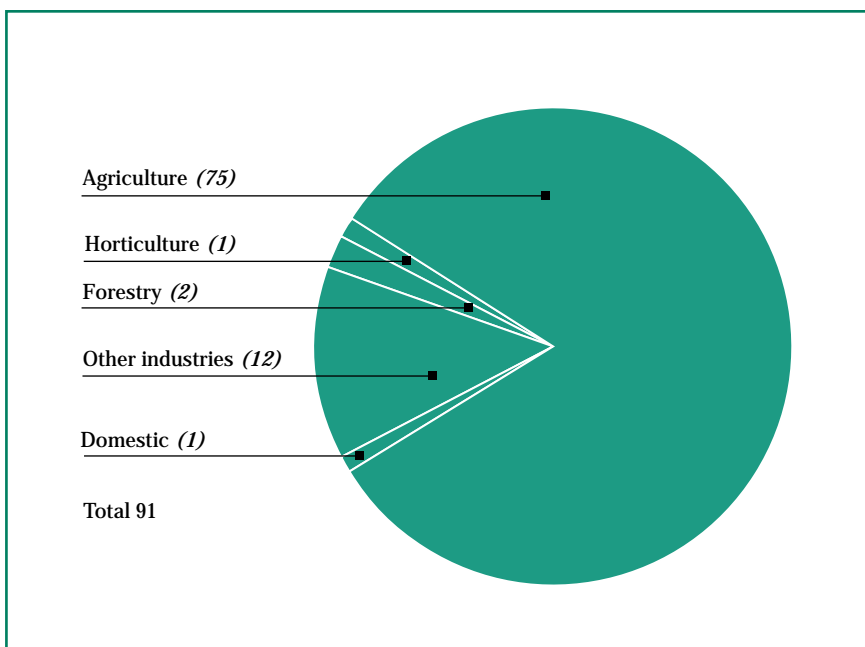
21 The PIAP database allows analysis of active ingredients reported to be involved in an incident according to their function (eg herbicide) and chemical type (eg organophosphate).

22 Analysis of incidents over the past two years (1996/97 and 1997/98) shows that the majority of pesticides reported in PIAP incidents were either fungicides or herbicides (37% and 27% respectively), while the most common chemical types were organophosphate (11%), carbamate and pyrethroid (8% each). Mention of an active ingredient in the report of an incident need not imply that it contributed to any ill health: many pesticides include more than one active ingredient, as well as non-active formulants, and it may be that one of these other formulants triggered the incident.

# Environmental and other non-health complaints 1997/98

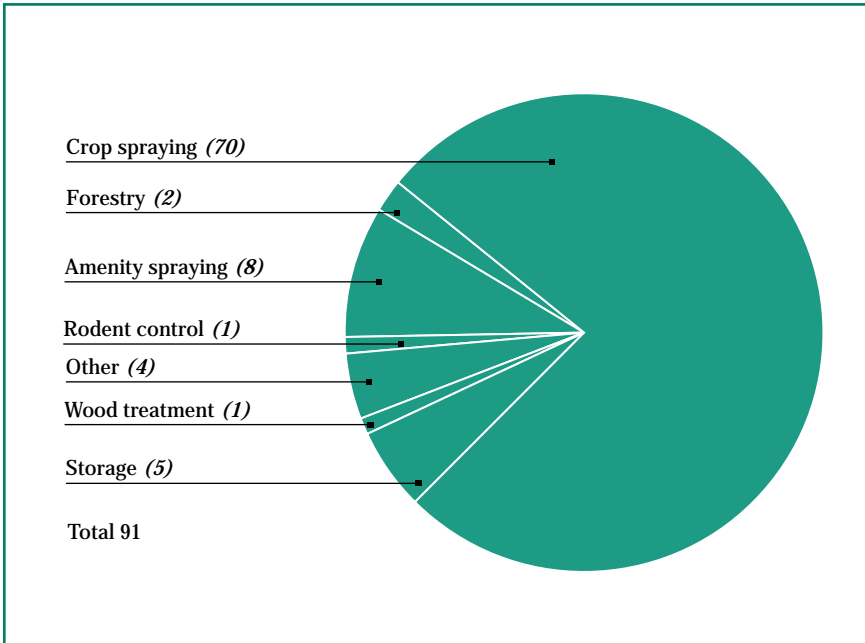
23 During the year there were 91 environmental and other complaints which did not allege ill health. Members of the public reported 90 of them. The 91 compared with an average of 116 complaints and a range from 87 to 137 in the previous five years (see Figure 1).

24 Figures 4 to 6 summarise the number of complaints for 1997/98, classified according to sector of use, work activity and method of application.



**Figure 4** Number of environmental and other non-health complaints 1997/98: classified by sector

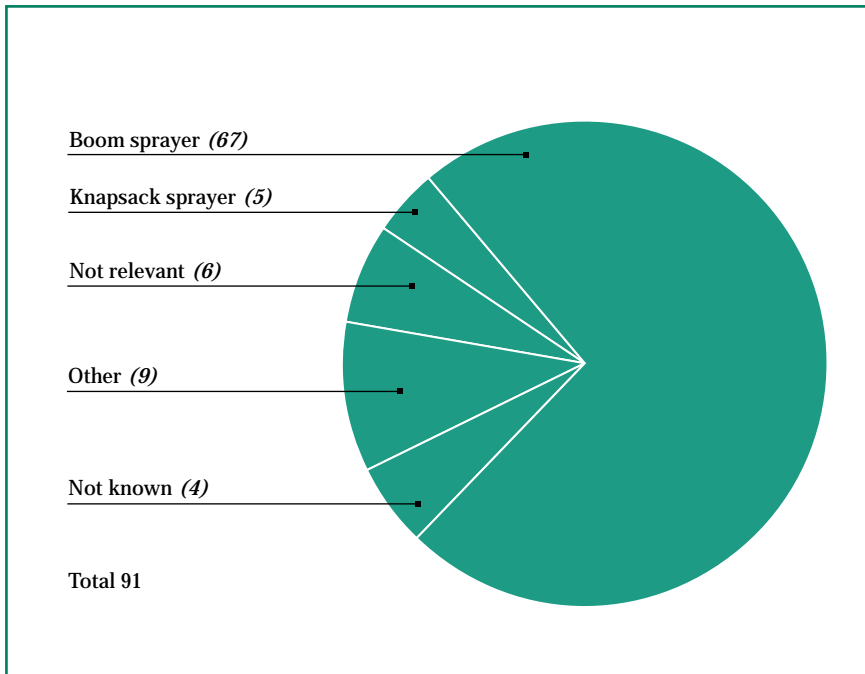
25 Seventy-five complaints, 82% of the total, originated from agriculture in 1997/98. 'Other industries', which included the amenity sector, pest control and wood treatment, totalled 13%. Horticulture, forestry and the domestic sector accounted for the remaining 5% of complaints.



**Figure 5** Number of environmental and other non-health complaints 1997/98: classified by activity

26 Crop spraying (70 cases) accounted for 77% of all environmental and non-health complaints in 1997/98. Other activities linked with at least 2% of complaints were amenity spraying (9%), storage (6%) and forestry (2%). Rodent control, wood treatment and the miscellaneous 'other' group made up the rest of the complaints.

27 Figure 6 shows that boom sprayers and knapsack sprayers accounted for 74% and 6% of complaints respectively. A further 10% consisted of other methods of application. There were no complaints involving orchard blast spraying, brushing, dipping, or application from an all-terrain vehicle. Seven per cent of complaints related to storage or other situations in which the pesticide was not being applied.

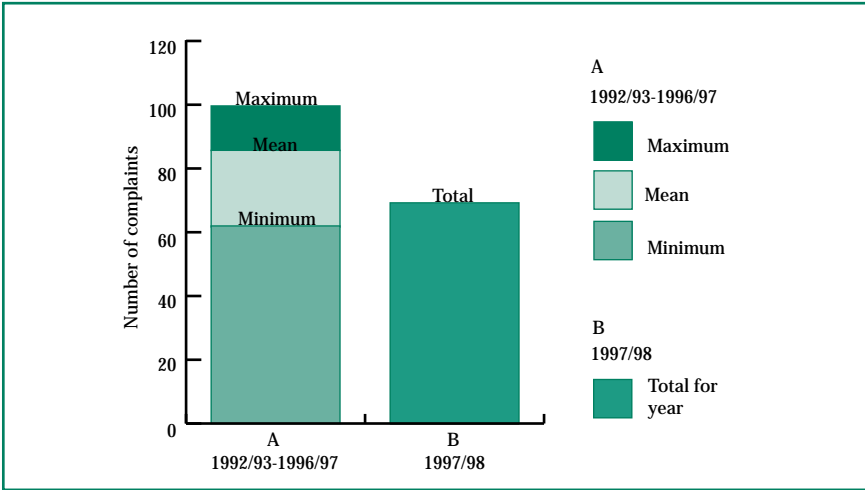


**Figure 6** Number of environmental and other non-health complaints 1997/98: classified by application method

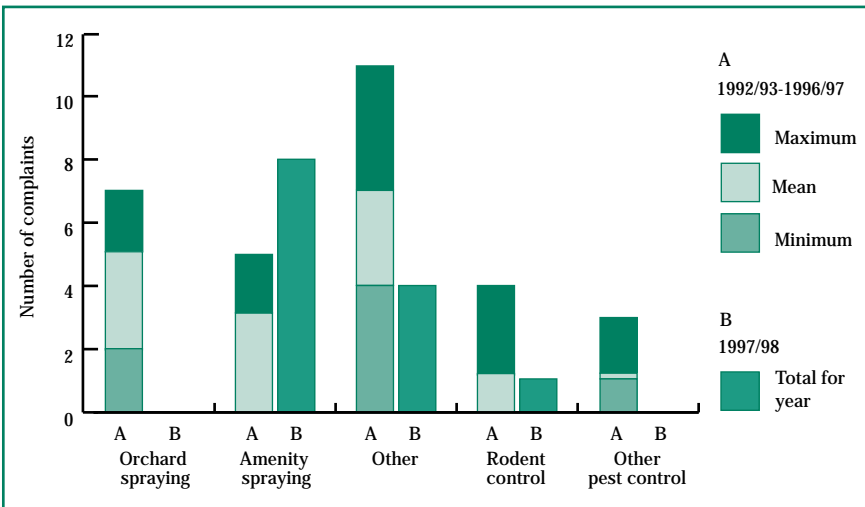
### *Comparison with previous years*

28 The 1996/97 Pesticide Incidents Report provided a detailed overview of environmental and other pesticide complaints from 1991/92 to 1995/96 which identified no significant trends in the numbers of complaints. This report does not repeat the overview. Even so, in 1997/98 the sectors in which the majority of complaints occurred and the associated methods of applying pesticides were similar to those in 1996/97. Details of sector and application method were not specifically recorded before then.

29 Figures 7 and 8 compare the number of complaints about different activities with the maximum, minimum and average numbers between 1992/93 and 1996/97. Forestry and storage were not recorded as separate activities throughout that period.



**Figure 7** Number of environmental and other non-health complaints 1992/93 to 1997/98: crop spraying



**Figure 8** Number of environmental and other non-health complaints 1992/93 to 1997/98: other activities

30 The figures indicate that with the exceptions of the lower number of complaints about orchard spraying and the higher number about amenity spraying, numbers of complaints in 1997/98 were comparable in the previous five years. Because the number of complaints about each activity in Figure 8 is small and subject to variations from year to year, it is too early to assess whether the latest figures for orchard spraying and amenity spraying represent a significant development.

### *Complaints alleging damage to property etc*

31 The 1996/97 Pesticide Incidents Report showed that from 1991/92 to 1995/96 there were between 12 and 35 complaints each year alleging damage to property such as garden plants, clothing or domestic animals. The annual average was 28. During 1997/98 there were 23 such complaints and sufficient evidence to link 19 of them to pesticides. Fourteen were related to crop spraying, three to amenity spraying, one to storage and one to forestry. All of the pesticides involved were herbicides or plant desiccants.

### *Summary of environmental and other non-health complaints*

32 HSE received fewer complaints than the average for the preceding five years, although the number fell within the previous range. The main differences between 1997/98 and recent years were in the relative numbers of orchard spraying and amenity spraying complaints. The number of complaints about crop spraying with a boom sprayer was near the lower end of the previous range but this remained the most common source of complaint.

# Case studies

## Case study 1

Complaints about rodenticides are not as common as some types of investigation, but rodent controllers should not underestimate the potential consequences of misuse.

*HSE prosecuted a local authority which had carried out a baiting programme at a farm where a young child had subsequently become contaminated with some of the rodenticide from one of the bait boxes. The box contained three different baits and although designed so it could be secured in place, it was only held down with half a brick. The lid had not been fastened with the locking device provided even though it was known that there were children nearby. The pest controller had set up ten other bait boxes around the farm of which eight were in areas where access by people and animals was foreseeable. Fortunately the child suffered no ill-health effects.*

*HSE laid three charges under COPR for endangering the public, and in particular a child, in a way which could have been easily avoided. The defendant was found guilty on one count and fined £1000. HSE also prosecuted at the same time under the Health and Safety at Work etc Act 1974 and secured a fine of £13 000. When announcing the fines, the Recorder said that the public should know that the courts take a very serious view of such incidents.*

***This incident would not have occurred if the pest controller had carried out a proper COSHH assessment which included effective action to meet the approval requirement to prevent access by children or animals.***

***If bait is used in areas where access is controlled, such as a locked store or loft with restricted access, baiting in open trays may be acceptable. However tamper-resistant boxes are essential wherever access by children is possible. The boxes should be effectively secured if the bait could be shaken out.***

## Case study 2

Failure to use any pesticide correctly can be costly.

*A major contractor applied sulphuric acid to desiccate potato haulms before harvesting. The company oversprayed a public footpath, failed to meet the statutory requirement to display statutory warning notices, and failed to keep unprotected people out of the treated area for at least 96 hours after spraying as set out in the specific conditions of approval. A member of the public suffered damage to their clothing.*

*HSE prosecuted the contractor who was fined £3500 and ordered to pay full costs of £2169.*

***The approvals process for the use of any pesticide lays down conditions for protecting people and the environment. For sulphuric acid these include not depositing spray within 1 m of a public footpath, displaying warning notices, and keeping unprotected people out of treated areas for at least 96 hours after spraying. These requirements are clearly stated in the supplier's safety data sheet and in Pesticides 1998: your guide to approved pesticides, ISBN 0 11 243032 5, which is revised annually. The contractor could have avoided prosecution by following these requirements.***

## Case study 3

Employers should ensure that pesticide users without a certificate of competence are properly supervised by a certificate holder.

*A local authority worker had been spraying paths with a herbicide. He returned to his van to refill his knapsack sprayer from a measuring jug and became breathless, dizzy and light-headed. Soon afterwards a member of the public found him unconscious. He was taken to hospital where he was kept under observation for 24 hours.*

*The investigating inspector found that the council worker was inexperienced and had only worked for the local authority for four days. His supervisor, who held a relevant certificate of competence, had left his colleague and gone to work on another site. The van containing the pesticide had a wooden floor with a moist area*

*which could have been spilled chemical contamination. Investigation also revealed that the local authority's risk assessment was inadequate. It recognised the risk of operator contamination but stated no precautions and it said that only operators with certificates would be employed, although two casual uncertificated operators were working with inadequate supervision.*

*The local authority agreed that the van should be decontaminated, the wooden floor removed, and ventilated storage provided for protective clothing.*

***Anyone supervising a person who would otherwise need a recognised certificate of competence should be able to control the operation effectively.\* This means that the operator should normally be within sight and sound of the supervisor.***

***It is also important to have in place high standards of engineering control for people who spend much of the time working alone. The COSHH assessment, which should be carried out before work starts, is meant to identify such issues. For remote working, the assessment should aim to provide a very high standard of health and safety, for example by using closed transfer systems instead of jugs when handling concentrated pesticides.***

***HSE Information Sheet AIS16 Guidance on storing pesticides for farmers and other professional users gives advice on storing pesticides in vehicles.***

***\* The exemption that allows non-certified workers to use agricultural pesticides under the direct and personal supervision of a certificate holder is under review.***

## Case study 4

Only trained, competent people may work with professional pesticide products.

*A supervisor asked an untrained member of staff to treat a moth infestation in a packaging plant. He explained the dilution process and use of the sprayer but gave no other instruction. The supervisor said that the pesticide was harmless. His colleague misunderstood the instructions and used a concentrated solution without any personal protective equipment other than his normal overalls. While he was spraying spray landed on his face and arms and caused itching which developed by the evening into burns requiring treatment.*

*The company had carried out a COSHH assessment which stated the need for gloves and a face mask, and had trained five employees, including the supervisor, to use the product. On the day of the incident the supervisor was the only trained person on site. Because he was busy he had instructed an inexperienced person to do the work.*

*The company disciplined the supervisor and organised further training, including refresher training for appropriate members of the workforce.*

***Although only users of agricultural pesticides require a recognised certificate of competence, all users of any product must be suitably trained and competent. Training may need to be repeated periodically, for example if the skills are not used frequently, or updated if the risks or equipment change. Employers should take steps to ensure that training has been effective and monitor work to ensure that relevant control measures are being used.***

## Case study 5

Both pesticides and their intended use must be approved.

*Of prime importance to growers of daffodil bulbs is the consistency of variety. Growers maintain standards by weeding out rogue bulbs when they are in flower. A market gardener who used a herbicide to*

*selectively kill rogue daffodils instead of digging them up was surprised to be issued with an enforcement notice to prohibit the activity. Although the herbicide used was approved under COPR, its application to daffodils had not been.*

***The conditions of use of the product, the product label and the manufacturers' technical data clearly state which crops and situations the product can be used for. Anyone who identifies the need for use in additional situations should first contact the Pesticides Safety Directorate regarding an application for an 'off-label approval'.***

### **Case study 6**

Pesticide users are responsible for handling empty containers safely.

*HSE prosecuted a farmer for discarding unwashed pesticide containers in the corner of an arable field near a road and close to houses. His action posed a particular threat to inquisitive children. He was found guilty and given a conditional discharge but ordered to pay a total of £745 costs.*

***All non-returnable containers should be rinsed thoroughly and disposed of safely so that residues in them present no threat to people or the environment. The revised Code of practice for the safe use of pesticides on farms and holdings (the 'Green Code'), the Environment Agency, the Scottish Environment Protection Agency and local authority environmental health departments give advice on safe disposal.***

### **Case study 7**

COSHH assessments need to be reviewed and monitored.

*An office worker complained that the carpet in her office was sprayed about every two months to control biting insects without first excluding the office staff who continued to work as normal. The pest control officer from the environmental health department wore protective clothing throughout the half-hour treatment, which possibly heightened the complainant's concerns. Investigation*

*found that the employer's COSHH assessment, which was several years old, stated that people should have been excluded from the area during treatment, and food removed. The inspector required the employer to review the assessment for that type of work and then review the training, instruction and supervision of staff involved in using pesticides to ensure that they followed the precautions identified by the assessment.*

***This incident highlights the importance of monitoring any control measures identified by a COSHH assessment to ensure that appropriate action is taken, including further training as necessary.***

### ***Case study 8***

Spray drift continues to be a major cause of complaint.

*A member of the public complained that a spray contractor had applied pesticide to cereals in a field next to his property when wind speed was high, resulting in excessive spray drift. The contractor knew that the complainant had complained before so he had left an unsprayed strip next to the boundary. He admitted that the wind speed had increased since he started to spray so he left a third of the field untreated but emptied the tank to prevent its contents from solidifying. He had not notified the complainant before spraying.*

***Pesticide users have a duty under COPR, as amended, to confine applications to their intended targets so as to minimise risks to people and the environment. Spray drift is a sign of poor control: the Green Code gives practical measures for preventing it, including advice on wind speed and direction.***

***On some occasions there is a legal obligation to notify others near the target area that spraying will take place, notably when sulphuric acid is used or before aerial spraying. In other situations notification is good practice and may help to ease concerns about ill health.***

# Appendix 1: Pesticide Incidents Appraisal Panel classification scheme

During 1997/98 the panel consisted of:

Dr J Osman (Chairman)	HSE Health Directorate
Dr A Scott	HSE Employment Medical Advisory Service
Mr J Bouckley	HSE Field Operations Directorate
Dr T Marrs	Department of Health
Dr V Murray	National Poisons Information Service
Miss F Northall	National Poisons Information Service

The secretary is from HSE's Health Directorate.

## *New classification scheme as from 1 April 1994*

<b>Confirmed</b>	<p>There are clinical symptoms and signs typical of exposure to the cited pesticide formulation combined with either:</p> <ul style="list-style-type: none"><li>■ corroborating medical and (where appropriate) biochemical evidence; or</li><li>■ evidence of overexposure.</li></ul>
<b>Likely</b>	<p>The balance of evidence based on reported exposure circumstances, clinical symptoms and signs or biochemical evidence (where appropriate) is consistent with ill health due to exposure to the cited pesticide formulation.</p>
<b>Open assessment</b>	<p>(i) The reported ill health is not consistent with the known potential ill-health effects of the cited pesticide formulation given the reported exposure circumstances but the implied association cannot be entirely discounted in the light of current knowledge; or</p>

(ii) the evidence is consistent with pesticide exposure being the cause of the reported ill health but alternative explanations, eg pre-existing disease, are also present.

**Unrelated**

There is strong evidence, eg evidence about exposure or from medical reports, that the reported ill health is not pesticide related.

**Insufficient information**

The available data are insufficient, incomplete or conflicting and the panel is unable to classify a case for one or more of these reasons.

## Appendix 2: Summary of PIAP decisions on those cases identified as ‘pending’ in the 1996/97 pesticide incidents annual report

<i><b>PIAP decision</b></i>	<i><b>Number of incidents</b></i>
Confirmed	4
Likely	2
Open assessment (i)	4
Open assessment (ii)	2
Unrelated	8
Insufficient information	28
Pending	1
<b>Total</b>	<b>49</b>

# Appendix 3: Health and Safety Executive offices

## **Wales and West Region**

Brunel House, 2 Fitzalan Road, Cardiff CF2 1SH  
Tel: 01222 263000

Inter City House, Mitchell Lane, Victoria Street, Bristol BS1 6AN  
Tel: 0117 988 6000

The Marches House, Midway, Newcastle under Lyme, Staffs ST5 1DT  
Tel: 01782 602300

## **Home Counties Region**

14 Cardiff Road, Luton, Beds LU1 1PP  
Tel: 01582 444200

Priestley House, Priestley Road, Basingstoke, Hampshire RG24 9NW  
Tel: 01256 404000

39 Baddow Road, Chelmsford, Essex CM2 OHL  
Tel: 01245 706200

## **London and South East Region**

St Dunstons House, 201-211 Borough High Street, London SE1 1GZ  
Tel: 0171 556 2100

3 East Grinstead House, London Road, East Grinstead, West Sussex RH19 1RR  
Tel: 01342 334200

## **Midlands Region**

McLaren Building, 35 Dale End, Birmingham B4 7NP  
Tel: 0121 607 6200

5th Floor, Belgrave House, 1 Greyfriars, Northampton NN1 2BS  
Tel: 01604 738300

1st Floor, The Pearson Building, 55 Upper Parliament Street,  
Nottingham NG1 6AU  
Tel: 0115 971 2800

National Agriculture Centre, Stoneleigh, Kenilworth, Warwickshire CV8 2LZ  
Tel: 01203 696518

### **Yorkshire and North East Region**

Woodside House, 261 Low Lane, Horsforth, Leeds LS18 5TW  
Tel: 0113 283 4200

8 St Paul's Street, Leeds LS1 2LE  
Tel: 0113 283 4200

Sovereign House, 110 Queen Street, Sheffield S1 2ES  
Tel: 0114 291 2300

Arden House, Regent Centre, Gosforth, Newcastle upon Tyne NE3 3JN  
Tel: 0191 202 6200

### **North West Region**

Quay House, Quay Street, Manchester M3 3JB  
Tel: 0161 952 8200

The Triad, Stanley Road, Bootle, Merseyside L20 3PG  
Tel: 0161 952 8200

Victoria House, Ormskirk Road, Preston PR1 1HH  
Tel: 0161 952 8200

### **Scotland**

Belford House, 59 Belford Road, Edinburgh EH4 3UE  
Tel: 0131 247 2000

375 West George Street, Glasgow G2 4LW  
Tel: 0141 275 3000

## **Further information**

MAFF and HSC *Code of practice for the safe use of pesticides on farms and holdings* (the Green Code), available from MAFF Publications, ADMAIL 6000, London SW1A 2XX, Tel: 0645 556000

*Pesticides 1998: Your guide to approved pesticides* ISBN 0 11 243032 5 available from The Publications Centre, Tel: 0171 873 9090

*Guidance on storing pesticides for farmers and other professional users* AIS 16 HSE Books 1996

*The Control of Pesticides (Amendment) Regulations 1997* SI 1997/188 ISBN 0 11 063695 3 TSO 1997, available from The Publications Centre, Tel: 0171 873 9090

The future availability and accuracy of the references listed in this publication cannot be guaranteed.



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