

Pesticide incidents report

Field Operations Directorate investigations

1 April 2007 - 31 March 2008

Summary

During the year, FOD staff investigated 94 reported pesticide incidents, including 32 cases involving allegations of ill health. The downwards trend in the number of complaints of alleged ill health appears to be continuing. The majority of people involved in reported incidents were, as in previous years, members of the public.

PIAP considered 30 of the 32 reported incidents. The panel assessed four cases as 'likely' to be linked to pesticide usage.

Introduction

1 This report provides information on incidents and complaints involving pesticides investigated by the Field Operations Directorate (FOD) of the Health and Safety Executive (HSE) between 1 April 2007 and 31 March 2008.

2 The report comprises:

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

3 FOD's activity on pesticides is not limited to the investigation of incidents and complaints and formal enforcement. HSE staff also provide advice and guidance to members of the public and to employers, the self-employed and employees during site visits and inspections.

4 When investigating pesticide incidents and complaints, HSE staff are concerned not only with the health of people at work and members of the public who may be affected by work activities, but also 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, qualified medical and occupational health professionals and scientists from the Health and Safety Laboratory (HSL) may all be involved. Inspectors also liaise locally with other bodies that have enforcement responsibilities for pesticide activities, including other government departments such as the Environment Agency (EA), the Department for Environment, Food and Rural Affairs (Defra), the Pesticides Safety Directorate (PSD) and the local authorities (LAs) in Great Britain, to ensure a consistent and co-ordinated approach.

5 This report does not include investigations for which these other bodies are the enforcing authority. Similarly, products such as veterinary medicines (including sheep treatments), which are subject to the Medicines Act 1968, are outside the remit of the report.

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

Statistical summary

7 During 2007/08, FOD inspectors investigated 94 reported pesticide incidents (complaints). Thirty-two complaints involved allegations of ill health, with the remaining 62 complaints involving other issues to do with pesticide use. The total of 94 incidents is a decrease of 6 from the previous year's figure of 100 (2006/07) and 46% lower than the average for the previous ten years.

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

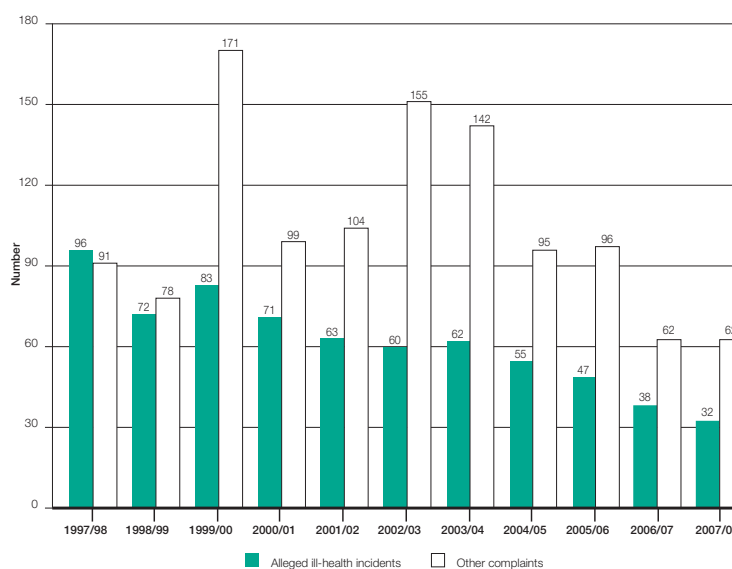


Figure 1 FOD alleged ill-health incidents and other complaints 1997/98-2007/08

9 The number of complaints alleging ill health is 6 (16%) less than in 2006/07 and half the average of the previous ten years. This is the lowest figure recorded since 1997/98. Further analysis of these complaints is in paragraphs 15-42.

10 The number of other complaints is the same as the previous year's figure and 47 (43%) lower than the average of the previous ten years. Further analysis of these complaints is in paragraphs 43-48.

11 Inspectors issued six enforcement notices under the Food and Environment Protection Act 1985 (as amended) (FEPA) and the Control of Pesticides Regulations 1986 (as amended) (COPR) during the year, compared with seven in 2006/07.

12 No charges were laid before the courts during the year under FEPA or COPR.

13 These enforcement figures are provisional and may be revised before publication in the Health and Safety Annual Report 2007/08.

14 Inspectors also enforce matters relating to the use of pesticides under health and safety legislation, principally the Health and Safety at Work etc Act 1974 (HSWA) and the Control of Substances Hazardous to Health Regulations 2002 (as amended) (COSHH). This report does not include information on any related enforcement under this legislation.

Alleged ill-health incidents

The Pesticide Incidents Appraisal Panel

15 HSE's Pesticide Incidents Appraisal Panel (PIAP) considers all incidents reported to FOD where there is any allegation that the use of a pesticide has caused ill health. PIAP is notified of these incidents only on completion of the inspector's investigation.

16 On occasion, PIAP also considers a small number of other incidents, which fall within the jurisdiction of other parts of HSE or of a different enforcing authority, such as a local authority.

17 The data in this report is presented in line with that of previous reports since 1995/96. However, the role of PIAP remains under continuing review within HSE as part of a wider discussion, both within government and by its Advisory Committee on Pesticides (ACP), on pesticide monitoring and surveillance schemes.

18 The PIAP membership for 2007/08 is listed below:

Dr D Sen, HSE, Corporate Medical Unit, Chair
Ms F Northall, Guys and St Thomas' Poisons Unit
Ms G Cullen, Guys and St Thomas' Poisons Unit
Dr S Bradberry, NPIS, Birmingham
Dr A Robertson, IOM HQ, Edinburgh
Dr N Langford, City Hospital, Birmingham
Dr J Battershill, Health Protection Agency
Mr R Hadway, HSE, Agriculture and Food Sector

19 The main purpose of PIAP, however, remains 'to provide an overview of alleged ill health attributed to pesticide exposure (as reported to and investigated by HSE) so that new issues and trends can be identified, and to inform the pesticides approval process'.

20 To fulfil this purpose, PIAP considers individual incident and case reports, not to establish the cause, but to consider the strength of the association between exposure and ill health. During the year the panel has, therefore, continued to assess reports based on 'balance of probability' from available information and not, as before 2002, making an assessment 'beyond reasonable doubt'.

21 This shift in the approach to case assessment should lower the threshold for recording cases as being potentially relevant or important. It should also help identify any new associations. While the change might cause some distortion to the comparative year-on-year results presented in the annual report series, it will provide a 'categorisation' of cases more appropriate to PIAP's defined purpose.

22 Appendix 1 outlines the current case/incident classification scheme, which remains largely unchanged from previous years, and Appendix 2 is a flow chart showing how PIAP reviews cases to reach its decision.

Summary information on alleged ill-health incidents for 2007/08

23 Table 1 shows the outcome for the 32 incidents forwarded to PIAP in 2007/08 (there were no incidents forwarded by local authorities in this year) 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 working with pesticides		Members of public/ others	
	Incidents	(People)	Incidents	(People)	Incidents	(People)
Confirmed	0	(0)	0	(0)	0	(0)
Likely	4	(5)	1	(1)	3	(4)
Open assessment (i)	1	(1)	1	(1)	0	(0)
Open assessment (ii)	0	(0)	0	(0)	0	(0)
Unrelated	6	(7)	1	(1)	5	(6)
Insufficient information	19	(27)	2	(2)	17	(25)
Pending	2	(3)	1	(2)	1	(1)
Not an incident	0	(0)	0	(0)	0	(0)
Total	32	(43)	6	(7)	26	(36)

Table 1 Number of alleged ill-health incidents and people affected analysed by PIAP decision and employment status 2007/08

24 In this and subsequent analyses, incidents in which more than one individual was alleged to have been made ill and for which the individuals received a different assessment by the panel, have been classified according to the most serious individual assessment. The ranking of severity is taken as being 'confirmed', 'likely', 'open assessment', and 'insufficient information'. There is also an 'unrelated' category.

25 Of the 32 reported incidents a final decision is awaited on two, pending further information which has been requested.

Overall trends

26 Figure 2 shows the number of incidents forwarded to PIAP in each of the last 11 years, analysed according to whether the panel classified the link between pesticide usage and the alleged ill health as 'confirmed' or 'likely', or came to some other decision.

27 At 32, the total number of alleged ill-health incidents in 2007/08 was the lowest figure yet recorded, and the previously noted trend of a falling number of cases reported annually since 1999/2000 would therefore appear to continue.

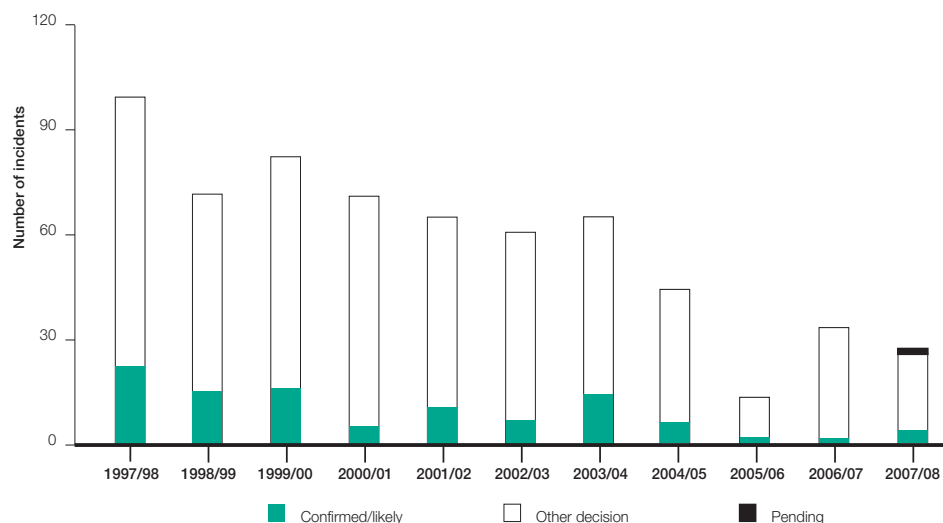


Figure 2 Trends in PIAP decisions

28 The proportion of the total (excluding 'pending') incidents assessed as 'confirmed' or 'likely', has been in the order of 20% to 25% since 1995/96 except in 2000/01 when it was 10%. In 2002/03 the figure was 13%, while for 2003/04, taking into account the pending cases, the final figure was 29% (18 of 62). In the current year, if one considers just those cases (32) reported to HSE in 2007/08, the number of 'confirmed' or 'likely' cases accounts for 4 out of 30 (with two decisions pending) or 13%.

29 The suggestion that the proportion of incidents assessed as 'confirmed' or 'likely' might be increasing, a finding that had been predicted from the change in approach to the assessment of incidents outlined in paragraphs 20 and 21, is not therefore confirmed. The proportion continues to remain considerably lower than in the early 1990s, when nearly half of the cases considered by the panel were assessed as 'confirmed' or 'likely'.

30 The number of people involved in reported incidents considered by the panel in each of the last ten years, either people using pesticides as part of a work activity or members of the public, is shown in Figure 3 (excluding a small number of cases where employment status was not recorded).

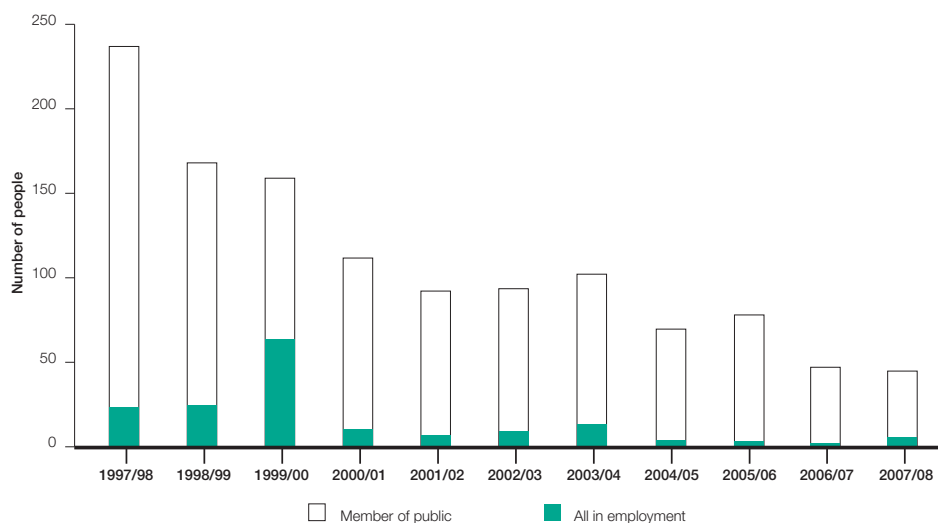


Figure 3 Trends in employment status: all alleged ill-health incidents

31 Figure 3 shows that the majority of people involved in reported incidents each year continue to be members of the public. The proportion in employment has fluctuated over the past ten years although for the past five years it has remained less than 15%. The total number of people involved in alleged ill-health incidents has also fluctuated greatly from one year to the next. Much of this fluctuation reflects the occurrence of single incidents involving large numbers of people. By contrast, the number of incidents reported each year has not been so variable, as Figure 2 shows.

Recent ill-health data

32 Since 1994/95, the panel has recorded the type and severity of the ill health experienced by people involved in incidents with a 'confirmed' or 'likely' assessment. In 2002/03 this was extended to include cases receiving an open assessment. Symptoms are recorded as 'acute' and/or 'chronic', 'local' and/or 'systemic' and their severity as 'mild' (requiring no or self-treatment), 'moderate' (presenting to a GP or hospital Accident and Emergency Department) or 'severe' (in-patient treatment).

33 There were no cases investigated by FOD inspectors during the current year where complaints of chronic ill health were recorded.

34 Table 2 summarises the information on severity of symptoms for the current year 2007/08. It incorporates the assessments of all incidents (5) and associated individuals (6) with a 'confirmed', 'likely', or 'open' assessment.

	Mild		Moderate		Severe	
	Incidents	(People)	Incidents	(People)	Incidents	(People)
Confirmed	0	(0)	0	(0)	0	(0)
Likely	3	(4)	1	(1)	0	(0)
Open assessment (i)	1	(1)	0	(0)	0	(0)
Open assessment (ii)	0	(0)	0	(0)	0	(0)
Total	4	(5)	1	(1)	0	(0)

Table 2 Severity of ill health

35 The one person who was assessed as having 'moderate' symptoms was classified as being 'systemic', and five were assessed as having 'mild local' symptoms.

36 Mild local symptoms are most commonly a self-limiting skin rash or an irritation of the skin, eyes or respiratory tract, while mild systemic symptoms include transient headaches and nausea.

Recent and historical data on pesticides

37 For each of the pesticides reported to be involved in an incident, the database records the trade names and the names of the active ingredients where these have been identified. In addition to an assessment of cases against the known toxicology of active ingredients the panel has, since April 2001, included a consideration of the hazards associated with co-formulants.

38 For many incidents, however, information relating to product identification is not available and this contributes to the high proportion of cases categorised as 'insufficient information'. During 2007/08, products could not be identified in 10 of the 32 reported incidents (32%).

39 The full interpretation of the overall PIAP database is not only limited by the lack of product information, but also by the fact that the relative importance of particular categories of pesticide may simply reflect the fact that their usage is more widespread rather than indicating that they are more hazardous. Also, mention of an active ingredient in the report of an incident need not imply that it contributed to any ill-health effect: many pesticides include more than one active ingredient, as well as non-active components, and it may be that one of these was responsible.

40 Accepting these limitations, the most common pesticide function associated with incidents reported to PIAP is herbicide, followed by fungicide and insecticide. In 2007/08, of the 39 identified products involved in the reported incidents, there were 20 herbicides, 11 fungicides, 3 insecticides, and 5 'other' groupings.

41 The most commonly recorded active ingredient during 2007/08 was glyphosate (3), pendimethalin (3), epoxiconazole (3) and 2,4-Dichlorophenoxyacetic acid (3) with no other actives having a greater involvement.

42 Finally, a point of observation – the panel met only once in 2007/08, a consequence of the steady fall in numbers of reported cases with a possible health outcome. This meeting took place on 5 September 2008.

Environmental and other non-health complaints 2007/08

43 During the year there were 62 environmental and other complaints, ie complaints in which there were no allegations of ill health relating to exposure. This is the same number as the previous year's figure and compares with an average of 109 and a range of 62 to 171 in the previous ten years (1997/98-2006/07). See Figure 1 and paragraphs 7 to 10 for statistical analysis of the figures.

44 Figures 4 to 6 summarise the number of complaints in 2007/08, classified according to the industry sector in which the pesticides were used, the work activity involved and the method of application.

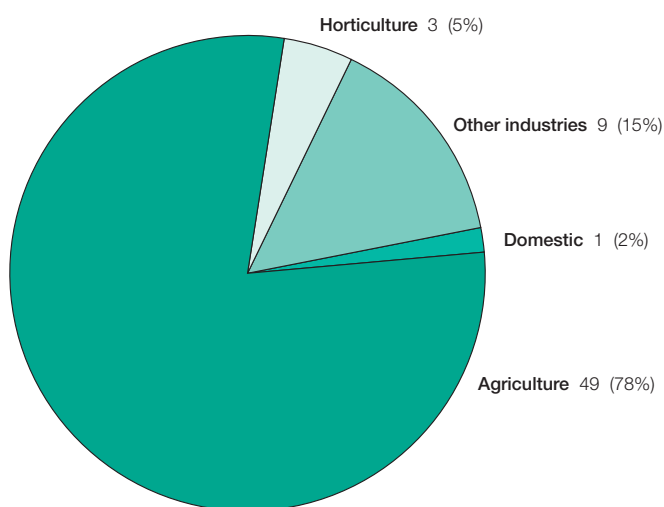


Figure 4 Number of environmental and other non-health complaints 2007/08: classified by sector

45 Of the 62 complaints, 49 (78%) originated from the use of pesticides within the agricultural sector. Horticulture use accounted for 5%, domestic use for 2% and the remaining 15% were associated with 'other industries'.

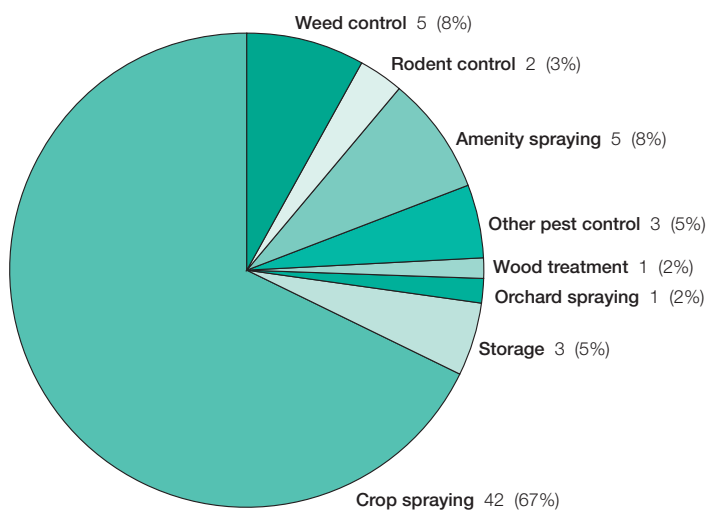


Figure 5 Number of environmental and other non-health complaints 2007/08: classified by activity

46 Crop spraying accounted for 67% of all environmental and other non-health complaints investigated during 2007/08. Other significant activities included weed control and amenity spraying 8% each, storage 5%, rodent control 3%, and orchard spraying and wood treatment 2% each. The remaining 5% occurred within a group of miscellaneous activities, including other pest control.

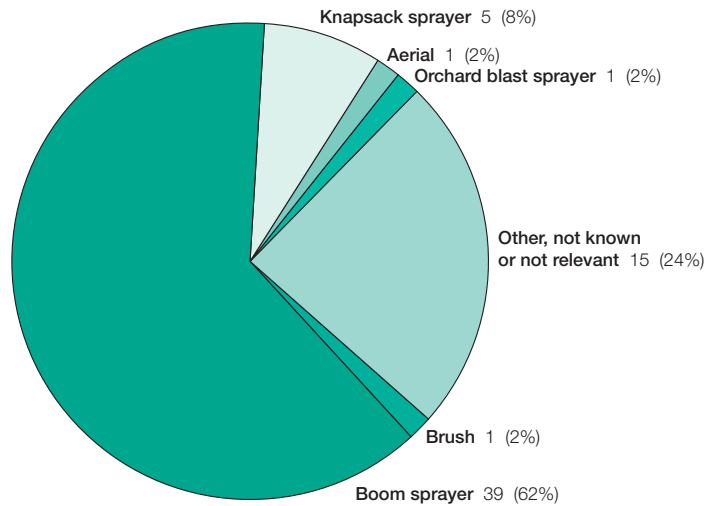


Figure 6 Number of environmental and other non-health complaints 2007/08: classified by application method

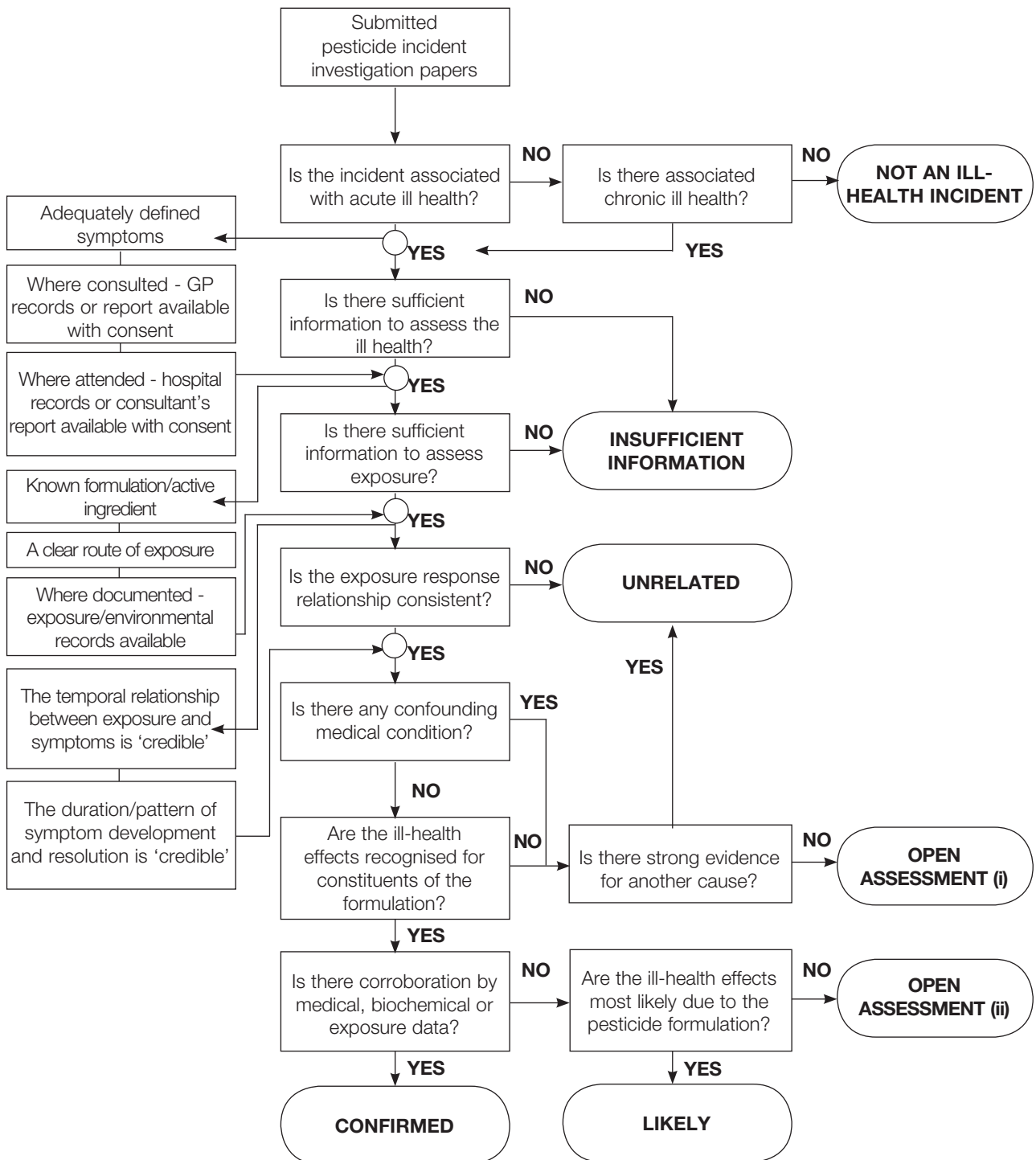
47 Conventional crop boom sprayers were involved in approximately 62% of all environmental and other non-health complaints. Knapsack spraying accounted for 8%, orchard blast sprayer, brush application and incidents involving aerial spraying a further 2% each. For the remaining 24% of complaints, the application method was either not recorded or not relevant.

48 Of the 62 complaints, 59 were reported by members of the public, consistent with experience in previous years. The other three incidents were reported by employees.

Appendix 1: Pesticide Incidents Appraisal Panel classification scheme

Confirmed	<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">■ corroborating medical and (where appropriate) biochemical evidence; or■ evidence of overexposure.
Likely	<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>
Open assessment	<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> <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.</p>
Unrelated	<p>There is strong evidence, eg evidence about exposure or from medical reports, that the reported ill health is not pesticide-related.</p>
Insufficient information	<p>The available information is insufficient, incomplete or conflicting and the panel is unable to classify a case for one or more of these reasons.</p>

Appendix 2: Flow chart for PIAP assessments



Further reading

- 1 *LERAP: Horizontal boom sprayers. A step-by-step guide to reducing aquatic buffer zones in the arable sector* PB5621 Pesticides Safety Directorate 2001, available from Defra Publications, ADMAIL 6000, London SW1A 2XX Tel: 08457 556000 or view online at www.pesticides.gov.uk
- 2 *LERAP: Broadcast air-assisted sprayers. A step-by-step guide to reducing aquatic buffer zones* PB6533 Pesticides Safety Directorate 2002, available from Defra Publications, ADMAIL 6000, London SW1A 2XX Tel: 08457 556000 or view online at www.pesticides.gov.uk
- 3 *The Control of Pesticides Regulations 1986* SI 1986/1510 ISBN 978 0 11 067510 7 The Stationery Office 1986, available from The Publications Centre Tel: 0870 600 5522
- 4 *The Control of Pesticides (Amendment) Regulations 1997* SI 1997/188 ISBN 978 0 11 063695 5 The Stationery Office 1997, available from The Publications Centre Tel: 0870 600 5522
- 5 *Code of Practice for using plant protection products* PB11090 Defra and HSE, available from Defra Publications, ADMAIL 6000, London SW1A 2XX Tel: 08457 556000 or view online at www.pesticides.gov.uk
- 6 *Code of best practice - Safe use of sulphuric acid as an agricultural desiccant* available from the National Association of Agricultural Contractors (NAAC), Samuelson House, 62 Forder Way, Hampton, Peterborough PE7 8JB Tel: 08456 448750
- 7 *Guidance on storing pesticides for farmers and other professional users* Agriculture Information Sheet AIS16 HSE Books 1996 (free)
- 8 *Reporting incidents of exposure to pesticides and veterinary medicines: What to do if you think people, animals or the environment have been harmed by exposure to pesticides or veterinary medicines* Leaflet INDG141 (rev1) HSE Books 1999 (single copy free)

Further information

Information on approved pesticide products is available online at www.pesticides.gov.uk (agricultural pesticides) and www.hse.gov.uk (non-agricultural pesticides). The sites are continually updated so that the most up-to-date information is freely available.

Enquiries concerning this report should be addressed to:

Health and Safety Executive, Agriculture and Food Sector,
City Gate West, Toll House Hill, Nottingham NG1 5AT.

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