

# Draft Code of Practice for the Safe Use of Plant Protection Products in Scotland

This Code of Practice has been prepared jointly by the Scottish Executive and the Health and Safety Commission (HSC).

Photograph  
of  
field  
crop  
sprayer

**Agriculture**

Photograph  
of  
ATV-mounted  
slug pellet  
applicator

Photograph  
of  
knapsack  
sprayer  
(amenity use)

**Amenity**

Photograph  
of  
shrouded-boom  
sprayer  
(golf course)

Photograph  
of  
orchard  
sprayer

**Horticulture**

Photograph  
of  
glasshouse  
sprayer

Photograph  
of  
spot-gun  
treatment

**Forestry**

Photograph  
of  
Electrodyn  
sprayer

## **Emergency procedures**

Many product labels will have specific advice on the procedures to follow if an operator is contaminated or there is a spillage or fire. This information is always on the manufacturer's material safety data sheet (MSDS) for each product. All professional pesticide users must be trained in emergency procedures and must have, and understand, their own action plans.

### **Adverse health effects resulting from personal contamination**

You can be exposed to pesticides through your skin (usually the main route of exposure), by breathing them or by swallowing them.

If you, or people you are working with, feel unwell when using pesticides or after pesticide use, you should:

- stop work and call for medical help immediately;
- avoid further exposure if you are helping a contaminated colleague or handling contaminated surfaces (use appropriate personal protective equipment);
- move the casualty away from the source of contamination and remove all contaminated clothing;
- wash contaminated skin or hair thoroughly with plenty of clean water;
- if eyes are contaminated, flush them with plenty of clean running water and cover with a sterile eye pad or similar lint-free dressing;
- if the casualty has swallowed a pesticide, do not induce vomiting unless the product label specifically recommends this;
- keep the casualty warm and at rest;
- if the casualty is unconscious, check their breathing and pulse and put them in the recovery position (if there are no signs of breathing or a pulse, begin cardiopulmonary resuscitation (CPR), as appropriate, using a method of artificial respiration which will avoid the risk of swallowing or breathing the pesticide);
- give the doctor or hospital a copy of the product labels and material safety data sheets or, if this is not possible, give them details of the active ingredients and product names.

### **Dealing with spillage**

You must never hose down spilt pesticide or allow it to enter surface water, ditches, drains or soakaways.

If you spill a pesticide concentrate or spray solution, you should:

- keep people and animals away from the affected area;
- avoid personal contamination (wear appropriate personal protective equipment);
- attempt to contain the spill (as a priority, divert the contamination away from surface water, ditches and drains);
- if the spill causes any water contamination or contaminates soil on a large scale, tell the Scottish Environment Protection Agency (telephone 0800 80 70 60) and warn others at risk (for example, people using the water downstream of a spill);
- if the spill enters a sewage system, tell Scottish Water;
- for spilt liquids, put inert absorbent material (such as cat litter or dry sand) around the spill and use the same material to soak up the spillage;

- for solids (including material used to contain liquid spills), sweep up gently to avoid raising dust, sprinkle the area with inert absorbent material and sweep again;
- for leaking containers, either use the contents immediately, pour the contents of the damaged container into an empty container (in good condition and with an intact label) that originally held the same product, or put the entire leaking container into a suitable larger container that is clearly labelled with the product name and the appropriate hazard classification and risk and safety phrases (never use an empty food or drink container to hold a pesticide); and
- dispose of all contaminated material through a licensed waste disposal contractor.

### **Suspected animal poisoning**

If you find an animal which you suspect has been exposed to pesticides, you should:

- get the animal away from the source of contamination taking care to avoid being exposed yourself (wear appropriate personal protective equipment);
- take the animal to a vet or contact a vet immediately, keeping the animal sheltered and at rest;
- give the vet the product labels where available or, if possible, the name of the products and active ingredients.

If you find wild animals, birds, livestock, domestic animals, honeybees or beneficial insects dead and you suspect they may have been poisoned by pesticides or if you find spilt pesticide or suspect baits, you should:

- telephone the Wildlife Incident Investigation Scheme (WIIS) on 0800 321 6000;
- avoid contact with animal carcasses, suspect baits, pesticides or containers and never try to unblock a badger sett or fox earth which may have been gassed;
- if it is safe to do so, cover dead animals, baits or pesticides.

### **Fire**

If you discover a fire that involves pesticides, you should:

- for small fires which can be dealt with quickly without a significant risk of exposure to pesticides or combustion products, use appropriate fire-fighting equipment;
- in all other circumstances, call the fire brigade and alert the police;
- give the fire brigade a complete and accurate list of the products involved and their active ingredients; and
- deal with any spillage of pesticides resulting from the fire or fire-fighting activities as described above.

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## Notices

### **Notice of issue of this Code under Section 17 of the Food and Environment Protection Act 1985**

This Code of Practice has been prepared and issued to provide practical guidance to all professional users of pesticides in respect of Part III of the Food and Environment Protection Act 1985 (FEPA) and, in particular, the regulations controlling the use of pesticides under that part of the Act in Scotland.

As required by Section 17 of FEPA, Scottish Ministers have consulted organisations representing the interests concerned.

The Code was laid in draft before The Scottish Parliament on XXXX and there was no resolution, within a period of 40 days that the Code should not be issued.

The Code comes into effect on XXXX and, on that date, the second edition of the Code of Practice for the Safe Use of Pesticides on Farms and Holdings shall cease to have effect.

### **Notice of approval of this Code by the Health and Safety Commission under Section 16 of the Health and Safety at Work etc. Act 1974**

Under Section 16(1) of the Health and Safety at Work etc. Act 1974 (HSWA) and with the consent of the Secretary of State, the Health and Safety Commission has, on XXXX, approved the relevant paragraphs of this Code, which are listed below, so far as they relate to the health and safety of people at work or those who may be affected by the activities of people at work.

The following paragraphs of this Code are approved for the purpose of providing practical guidance on the control of exposure to pesticides at work with respect to the Control of Substances Hazardous to Health Regulations 2002 (COSHH) (SI 2002 Number 2677).

Annex A: paragraphs in the section 'The official status of this Code' below 'Approved Code made under the Health and Safety at Work etc. Act' and 'Other guidance'

Annex C: the meaning of 'approval', 'consent' and 'user'

Paragraphs 58 to 77 (except paragraphs 62 and 67), 114 and 242  
(Regulation 6: Assessment)

Paragraphs 78 to 80, 85 to 86, 89 to 91, 100 and 121 to 125  
(Regulation 7: Control of exposure)

Paragraphs 91 to 92  
(Regulation 8: Use of control measures)

Paragraphs 93 to 97 and 245  
(Regulation 9: Maintenance requirements)

Paragraphs 102 to 103 and 244  
(Regulation 10: Monitoring exposure)

Paragraphs 104 to 108 (except paragraph 105), 110 to 112 and 246  
(Regulation 11: Health surveillance)

Paragraphs 9 to 11 and 18  
(Regulation 12: Information, instruction and training).

The Code comes into effect on **XXXX** and on that date the second edition of the Code of Practice for the Safe Use of Pesticides on Farms and Holdings shall cease to have effect.

The definitions in this Code are also approved where they are of words or phrases used in the paragraphs above.

Signed: Secretary to the Health and Safety Commission  
Date:

### **Notice of approval of this Code under Regulation 21 of the Groundwater Regulations 1998**

On **XXXX**, Scottish Ministers approved the paragraphs of this Code specified below, under Regulation 21 of the Groundwater Regulations 1998. The following paragraphs have been approved to give practical guidance to all professional users of pesticides (except when undertaking disposal activities) on how to prevent substances in List I of the Regulations from entering groundwater and prevent substances in List II of the Regulations from polluting groundwater.

Annex A: paragraphs in the section 'The official status of this Code' below 'Approved Code made under the Groundwater Regulations 1998'

Annex C: the meaning of 'groundwater'

Paragraphs 10, 11 and 20 (training and competence)

Paragraph 27 (consideration of the need to use pesticides)

Paragraph 29 (consideration of how to minimise the impact of pesticide use)

Paragraphs 32 and 33 (choice of pesticide)

Paragraphs 36 to 38 (understanding and following the product label)

Paragraphs 52, 53, 55 and 56 (storage)

Paragraphs 149, 151 to 155, 157 and 159 (preventing contamination of surface water and groundwater)

Paragraph 165 (procedures before application)

Paragraph 171 (handling damaged containers)

Paragraphs 177 to 184 and 187 to 189 (transportation)

Paragraph 191 (filling)

Paragraphs 193 to 194, 204, 207, 210, 216, 219 to 223, 231 (procedures during application)

Paragraph 69 (procedures after application)

Paragraphs 234 to 235 and 243 (record keeping)

## **Introduction**

### **Is it necessary to use a pesticide?**

1. Using pesticides unnecessarily can involve risks to the health of people, and may be detrimental to biodiversity, causing adverse effects on other creatures (including beneficial insects), plants and the environment. As well as wasting money, the unnecessary use of pesticides may increase the possibility of pesticide resistance. In some cases, unnecessary use might also damage a treated crop.
2. For these reasons, you must take care when deciding whether or not to use a pesticide. You must first identify correctly the specific weed, disease or pest affecting the crop or present in the area of concern. The mere presence of a pest, weed or disease does not justify taking action against it and it is important to consider whether the economic loss likely to be caused by a specific pest, weed or disease problem is outweighed by the cost of using the pesticide. Have you considered the thresholds above which there could be economic damage to the current or following crops? Are you able to forecast them yourself, or do you need to use other sources of information or advice to assess the likely damage which could be caused by the pest, weed or disease attack, and the resulting economic effects?

### **What is this Code of Practice about?**

3. This Code of Practice is about using plant protection products safely to protect people and safeguard biodiversity. Plant protection products are defined as active substances or preparations intended to:
  - protect plants or plant products against all harmful organisms or prevent the action of such organisms (for example agricultural/horticultural fungicides and insecticides);
  - influence the life processes of plants, other than as a nutrient (for example as a growth regulator);
  - preserve plant products, providing such substances or products are not subject to the provisions of Community law on preservatives;
  - destroy undesired plants; or
  - destroy parts of plants or check or prevent the undesired growth of plants.

This Code applies to the use of plant protection products (the commonly used term pesticide(s) is used in the text) in the following situations (note that this Code is not intended to cover the amateur or home garden use of pesticides: see paragraph 4).

## Crops and Situations Covered by the Code

### **Edible crops (including pre-planting treatment of the crop, seed or soil (or other growing media) and post-harvest treatments)**

All edible agricultural and horticultural crops (outdoor and protected crops including cereals, oilseeds, vegetable brassicas, top fruit, legumes, soft fruit, leafy vegetables, stem vegetables, bulb vegetables, fruiting vegetables and root and tuber crops)

#### **Herbs**

#### **Agricultural herbage**

#### **Edible fungi**

#### **Apiculture**

Other edible crops (for example hops, figs, quinoa)

### **Non-edible crops**

**Green cover** (on land that is temporarily removed from production)

#### **Forestry**

- Forest nursery

Forestry or woodland for commercial timber production, coppicing, amenity, recreation, conservation and landscaping.

- Farm forestry established on arable land or improved grassland, including short rotation coppicing and hedgerows around arable fields.

- Cut logs and felled timber before saw mill stage.

#### **Ornamental plant production**

**Industrial crops** (for example *Miscanthus spp* grown for any industrial use)

### **Non-crop uses**

#### **Structural treatments**

- Crop storage areas and handling equipment
- Protected cropping structures
- Interior landscapes

### **Use in or near water**

#### **Land immediately next to water**

#### **Areas of an estuary between the low and high tide marks**

#### **Use in open or enclosed waters**

### **Industrial and amenity areas**

**Amenity grassland** (areas of semi-natural or planted grassland that need little management such as golf fairways, road verges and parkland)

**Amenity vegetation** (areas of semi-natural or ornamental vegetation, including trees and bare soil around ornamental plantings)

**Managed amenity turf** (areas of frequently mown, intensively-managed turf such as sports pitches, golf and bowling greens and tennis courts)

### **Plant-free areas (herbicides only)**

**Natural surfaces that are not intended to bear vegetation** (areas of soil or natural rock outcrops such as strips around fields, fence lines and barriers but not including land between rows of crops)

**Permeable surfaces on top of soil** (any man-made permeable surface such as gravel that lies over the soil and is not intended to bear vegetation: this includes permeable sports surfaces but not railway ballast).

**Hard surfaces** (any man-made impermeable surface, such as concrete or tarmac that is not intended to bear vegetation, including railway ballast)

**Wooden surfaces** (such as decking)

### **Vertebrate control in plant protection situations**

**Vertebrate control products** for use in the situations described above (such as agricultural fields, glasshouses, forestry and amenity areas) to protect plants or plant material.

You can get more detailed information on these definitions of crop types and usage situations on the PSD website at: [www.pesticides.gov.uk](http://www.pesticides.gov.uk)

## Who should read this Code?

4. This Code should be read by all professional users of pesticides:
  - on farms and holdings;
  - in horticulture;
  - in amenity situations; and
  - in forestry;and people who provide advice or practical support, or sell and supply pesticides, to professional users.

If you are a professional user of pesticides in other circumstances, you should read the Health and Safety Commission's Approved Code of Practice 'The safe use of pesticides for non-agricultural purposes'.

If you are an amateur user, you can get general advice on the correct use of home garden pesticides from garden centres, trade organisations (for example, the Crop Protection Association website at [www.cropprotection.org.uk](http://www.cropprotection.org.uk)) and a wide range of publications as well as specific advice on the product label.

## What advice is contained in the Code?

5. This Code explains how to use pesticides safely and, by so doing, meet the legal requirements which cover the use of pesticides.
6. Certain paragraphs of this Code give specific advice on how to meet the requirements of the Health and Safety at Work etc. Act 1974, the Food and Environment Protection Act 1985 and the Groundwater Regulations 1998 (you can find detailed information on this legislation in Annex A). These paragraphs, which have a special legal status, are sidelined in the right hand margin (in the same way as this paragraph).

## What other advice is available?

7. To use pesticides safely and correctly, you may need to read other advice issued by the Scottish Executive, other Government departments, the industry or other organisations, much of which is referred to in the text. Annex B gives a comprehensive list of codes of practice, guidance notes and other advice.

## Special terms

8. The special terms used in this publication are explained in Annex C. In addition, the terms most commonly used to describe application equipment and methods are explained in Annex D (this may be helpful when deciding which type of pesticide application techniques are covered by a certificate of competence).

## Part 1: training and certification

### Who must be trained in the use of pesticides?

9. By law, everyone who uses a pesticide must have received adequate training in its safe, efficient and humane use and be competent for the job they are carrying out. This applies to:
- users/operators/technicians (including contractors);
  - managers;
  - employers; and
  - self-employed people.
- Although there is no legal requirement for advisers and consultants (other than those selling or supplying pesticides) or contract specifiers to be trained in the use of pesticides, such knowledge will ensure that the advice given or the terms of the contract take account of the risks to human health and the environment resulting from pesticide use, and the need for users to minimise these risks.

### What training is required?

10. Before using a pesticide, you will need basic training to gain a working knowledge of the following subjects.
- (a) The relevant legislation, to help you understand and comply with the wide range of regulations affecting the use of pesticides and the legal requirements relating to the conditions of approval of a particular product.
  - (b) The hazards associated with pesticides and how to identify and control the risks to humans (operators, bystanders, people entering treated areas and those handling or eating treated items), non-target species and the environment.
  - (c) Safe working practices for storing, handling and mixing pesticides, calibrating, using and cleaning of application equipment, controlling operator exposure (including the use of engineering controls and the use and care of personal protective equipment) and disposing of pesticide waste, to minimise the risks to humans, non-target species and the environment.
  - (d) Emergency action to protect human health and the environment, get help and notify others, as appropriate, if there is a pesticide spillage, a personal contamination/poisoning, wildlife incident or fire.
  - (e) Health surveillance, to ensure that employers and the self-employed use appropriate exposure monitoring and health surveillance methods, when required, and understand how to make, keep and provide access to records to meet statutory obligations.
  - (f) Record keeping, to ensure that you know how to make and keep records of pesticide treatments (including any specific records needed to comply with, for example, crop or woodland assurance schemes and LERAP schemes, as appropriate), COSHH assessments, inspection and maintenance records for engineering controls of operator exposure and respiratory protective equipment and exposure monitoring and health surveillance (as above).
  - (g) The use of application equipment, to ensure that pesticide users are able to operate all the application equipment they need to use safely

and effectively and have had further training for specific application techniques or operations (for example, reduced volume spraying or applying pesticides in or near water).

### **When is a certificate of competence required for users of pesticides?**

11. Although all users of pesticides must be trained to be competent, some users are required by law to have an appropriate certificate of competence. This requirement applies to:
- those born after 31 December 1964;
  - those providing a commercial service, such as contractors and those working for local councils; and
  - fumigators using methyl bromide.

Pesticide application is considered to be a commercial service when the crops, land, produce, materials, buildings or the contents of buildings treated are not in the ownership or beneficial occupation of the pesticide user or the user's employer. Similarly, the application of a pesticide on seed is considered to be a commercial service unless the treated seed is to be used only by the person applying the pesticide or that person's employer (even if the materials are provided by the site owner).

Operators who need to hold a certificate of competence must produce an appropriate certificate if a person authorised to enforce pesticide legislation asks them to do so.

12. Certificates of competence for pesticide users recognised in Scotland are those issued by the Scottish Skills Testing Service (SSTS). Certificates for using fumigants are issued by the British Pest Control Association (BPCA) and those for vertebrate control agents (in various situations) are issued by both the SSTS and the BPCA. Candidates for SSTS certificates of competence generally need to complete successfully a foundation module before taking other modules that are appropriate for the type of equipment to be used (the only exception is for users of products for treating tree stumps during forestry harvesting operations: this use is covered under the certificate of competence for chainsaws). You should get advice from the SSTS if you are not sure which certificate of competence is required for a particular use.
13. Certificates of competence issued by the National Proficiency Test Council (NPTC) are also recognised in Scotland.
14. Although the SSTS foundation module is not recognised on its own as a certificate of competence, it is a useful qualification for people with responsibility for working with pesticides but who do not apply them themselves. The NPTC also issues the Certificate of Competence in Pesticide Application for Managers and Supervisors which is specifically intended for people who make policy and operational decisions about applying pesticides.

15. Users of some types of pesticides do not need a certificate of competence, but, as for all pesticide users, they must have been given adequate and relevant training. For example, the use of vertebrate control agents on farms does not necessarily require a certificate of competence but training is available and must be undertaken before the pesticide is used. Users of some gas generating vertebrate (and other pest) control agents (such as phosphine-generating products) are legally required to have had specific training in the use of these products.
16. Even if you do not necessarily need a certificate of competence it will provide evidence you have been properly trained to use the application equipment safely, effectively and accurately. Also, some crop assurance schemes, contract specifiers and professional registers (for example, the BASIS Advanced Contractors Certification Scheme (BACCS) for amenity/industrial contractors) may demand that pesticides are only applied by certificated operators.

### **What training and certification are required for salespeople, advisors and contract specifiers?**

17. People selling and supplying pesticides must have a certificate of competence, this being the appropriate Certificate in Crop Protection issued by BASIS (Registration) Limited. Although, people only offering advice on pesticide recommendations are not legally required to have a BASIS Certificate, this qualification will provide evidence that their advice is likely to be correct.
18. People buying pesticides or using advisors should take reasonable steps to make sure that the people they rely on are competent to provide that service.
19. People who draft contracts must be competent and have received suitable training, and it is preferable for them to have the appropriate BASIS certificate. The Amenity Pest Management Certificate (APMC), also awarded by BASIS, is specifically designed for contract specifiers and should also be considered. The NPTC Certificate of Competence in Pesticide Application for Managers and Supervisors may also be appropriate for contract specifiers.

### **Can I work without a certificate of competence?**

20. If you need a certificate of competence to apply pesticides but do not have one yet, you can work under the direct supervision of a person who holds a certificate for that particular type of equipment. The supervisor will need to be within sight and sound of the person using the pesticide so that the process can be properly supervised. This requirement for supervision applies to all tasks including preparation, calibration, mixing, loading, application, cleaning and disposal of washings, excess pesticide and containers.

## **Continuing professional development**

21. Although a certificate of competence or evidence of other training will provide a good basis on which to start using pesticides, it is important that users, managers and others keep up to date and develop technical knowledge and practical skills in the use of pesticides. Evidence of continuing professional development for people applying pesticides is provided through membership of the National Register of Sprayer Operators (NRoSO) and, for those selling or supplying pesticides, through membership of the BASIS Professional Register. To join these registers, you must have the appropriate certificates of competence (unless you are a pesticide user born before 1 January 1965) and to continue to be a member, you must take part in an appropriate number of eligible training events and conferences each year to achieve a specified target number of points.

### **Where can I get training?**

22. Training for SSTS certificates of competence is provided by many agricultural colleges, independent training providers and trade associations. Training in using fumigants and vertebrate control agents is provided by the BPCA. You can get a list of local training providers from Lantra National Training Organisation Limited (the national training organisation for land-based industries), and details of other relevant qualifications for pesticide users meeting the National Occupational Standard provided by Lantra Awards.
23. Training for the BASIS Certificate in Crop Protection is provided by some agricultural colleges and independent training providers. You can get more information from BASIS (Registration) Limited.
24. If employers provide their own training, it needs to be of an equivalent standard to that described above.
25. You must make sure that you keep a record of all training (see Part 4). You may need these records to prove that you have been appropriately trained, as required by law.

## **Part 2: planning and preparation**

26. This part of the Code provides guidance on what you need to consider before applying a pesticide to make sure that the application is safe and effective and meets the relevant legal obligations.

### **Section 2.1: minimising the impact of pesticide use**

27. It is Scottish Executive policy to minimise the impact of pesticide use while making sure that pests, diseases and weeds are effectively controlled in a way which protects the health of people and safeguards biodiversity, which means, other creatures (including beneficial insects), plants and the environment. All public bodies, in the course of their functions, have a duty, under the Nature Conservation (Scotland) Act 2004, to further biodiversity, so far as it is consistent with the proper exercise of those functions. Always consider whether you need to use a pesticide at all (see paragraphs 1 and 2). Although it is important to act on a problem as soon as you identify it, you should only consider using pesticides after considering whether the problem can be tackled in other ways, for example, by using cultural or biological control methods or a combination of these methods in line with the principles of integrated crop management (ICM) and integrated pest management (IPM).

The booklet 'Pesticides and integrated farming' gives more guidance on ICM and IPM.

28. Using pesticides unnecessarily is not just a waste of money, it can also present a risk to human health, creatures, plants and the environment and may contribute to the build up of resistance which may make product selection more difficult in the future. All pesticide users should be aware of the principles of sustainable pesticide use and should consider the long-term implications of short-term solutions when tackling pest, disease and weed problems.

### **What to do if you decide the use of a pesticide is necessary**

29. If, after considering all the alternatives, you decide that the use of a pesticide is necessary, there are still a number of ways in which you can minimise any undesirable effects of pesticide use. For example, it is essential that the correct product is used at the right time and in the right way, to make sure it is as effective as possible. The product must always be used in line with its statutory conditions of use (see section 2.2). In certain situations, it may be possible to use an appropriate dose which is lower than the maximum dose permitted on the product label. In some circumstances, it may be appropriate to apply the product as a spot, patch or varied dose treatment, possibly using GPS-based crop, pest, weed or yield mapping techniques or optical sensing of weeds on hard surfaces. It may be possible to apply some herbicides in grassland and similar situations using weed wipers (if the approved conditions of use permit this) to treat only the target vegetation. In all situations, you must bear in mind the possible effects the product may have on human

health (see section 2.4) and the environment (see section 2.8) and always follow the statutory conditions of use.

30. The COSHH assessment and assessment of risks to the environment may confirm that the pesticide you have chosen is the most appropriate. However, if you find that using another pesticide may involve less risk to human health and the environment and be equally effective you will need to consider your choice again.
31. A range of pests, weeds and diseases show resistance to certain pesticides and it is important that pesticides are used in a way which is planned to minimise the development of resistance in order to maintain the effectiveness of currently available pesticides and prolong the usefulness of new products. You should use all pesticides as part of a resistance management strategy which should include non-chemical methods of pest, weed and disease control (see paragraphs 27 and 28) and you should consider, where appropriate, the whole rotation and not just the current crop. It is important that you monitor the effectiveness of pesticide treatments and note any potential resistance problems (see part 4). You can get information on pesticide resistance and the work of the various resistance action groups (RAGs) dealing with fungicides (FRAG), weeds (WRAG), insecticides (IRAG) and rodenticides (RRAG) on the PSD website at [www.pesticides.gov.uk/committees/Resistance](http://www.pesticides.gov.uk/committees/Resistance). You can also get advice on resistance management from some product labels and from advisors and pesticide manufacturers.

### **Selecting the right pesticide**

32. It is essential that you select the right product in each situation. If you do not have the competence to choose the most appropriate pesticide, you should consult a suitably qualified advisor (see paragraphs 17 to 18) who will also be able to advise on when and how to use the pesticide and what dose to apply.
33. When discussing pesticide requirements with a supplier, distributor or advisor, you should check whether the product:
  - (a) is approved for the intended use and situation;
  - (b) can be safely prepared and applied using the intended application equipment;
  - (c) has a harvest interval, an access restriction for workers or livestock (stated on the product label) or an application restriction (such as a buffer zone requirement specified on the product label) that you can comply with;
  - (d) presents the least risk to human health;
  - (e) presents the least risk to livestock, the environment (including surface water and groundwater) and other creatures that may be sensitive to pesticides (including biological control agents used, or to be used in the future, on the same crop or area); and
  - (f) makes a positive contribution to your resistance management strategy.

## Section 2.2: understanding the product label

You must read and understand the label before you start to use the product, and follow all statutory conditions of use

34. The main source of information to allow you to use a pesticide safely and effectively is the product label. This must be supplied with the container at the time you buy the product. The product label includes the information that is permanently fixed to the container itself and, if supplied by the manufacturer, any detachable or separate leaflet. If a product is supplied with both a fixed label and a leaflet, the label fixed to the container will always include all of the 'approved text' referred to below with the possible exception of the directions for use (which will be included in the leaflet). The leaflet will always include all of the information referred to below.
35. Where appropriate, you may get other relevant information about the product from the supplier. The material safety data sheet (MSDS) contains important information on what to do in an emergency. For many amenity products, information cards are available for giving to members of the public (such as bystanders) who show an interest in the treatment operation. Environmental Information Sheets (EIS) are available for some products to add to the information on the product label.
36. It is essential that you carefully read and understand all the label information before using a pesticide. This information tells you how to use the product safely, effectively and humanely, and provides the basic information you need to assess the risks to human health and the environment.
37. If you are applying a pesticide which has been pre-mixed by another person (for example, a spray solution or prepared bait), you must have read and understood the product label and should have a copy available.
38. Never use a pesticide that has not been approved for use in the UK or does not have an approved, legible UK label. You could be breaking the law. If you are not sure, talk to your supplier. Product approvals may change and a product used in the previous season may no longer be approved for the same use: you may be committing an offence just by storing it. You can find up to date information on the approval status of pesticide products on the PSD website ([www.pesticides.gov.uk](http://www.pesticides.gov.uk)).

You should be able to get the labels, leaflets, MSDS and information cards referred to above from the supplier of the product when you buy it.

## Approved text and other text

39. The 'approved text' on a professional product label is the information which is governed by pesticide legislation and relates to using the product safely, effectively and humanely. The approved text is divided into four sections.
- Product identity
  - Statutory area
  - Safety information
  - Directions for use
40. The 'other text' on a professional product label is extra advice which is not required by pesticide legislation. This can include:
- company advisory information (such as extra agronomic guidance and other advice on handling and using the product, which may benefit the user);
  - information required by other legislation (such as some health and safety information); and
  - information relating to other, non-pesticidal uses of the product.

## Product identity

41. The product identity information will include:
- the trade name of the product;
  - the product registration number;
  - the name and address of the marketing company or the approval holder of the product (or both);
  - the product's active ingredients, their concentrations and the formulation type;
  - details of any co-formulants which need to be specified for safety reasons;
  - a brief statement on the biological use of the product (for example, 'For the control of aphids on top fruit');
  - the requirement to carry out a COSHH assessment, as appropriate;
  - the net quantity of the product; and
  - the product batch number.

## The statutory area

42. The label for a professional pesticide product includes a boxed 'statutory area' which contains the statutory conditions of using and storing the product (that is, the conditions you must follow by law). The information in the 'statutory area' will include:
- (a) the phrase 'compliance with the following conditions of use and all safety precautions marked \* is a legal requirement' (this explains that the following points in the statutory area and the individual safety precautions marked \* are all statutory conditions of use);
  - (b) the approved 'Field of use' of the product (for example, 'For use only as an agricultural, horticultural, amenity, industrial and forestry herbicide');
  - (c) the crops on which (or situations in which) the product can be used;

- (d) the maximum individual dose (or maximum concentration for some products applied as high volume sprays);
  - (e) the maximum number of treatments (or maximum total dose);
  - (f) the latest time of application (which may be given as a date, a crop growth stage or a harvest interval);
  - (g) other specific restrictions (for example, the maximum concentration of the product in the spray solution (or the minimum water volume), the minimum interval between applications or restrictions on using certain types of application equipment); and
  - (h) the phrase 'Read all other safety precautions and directions for use before use'.
43. You must follow all of the statutory conditions for using the product to make sure you do not break the law and to protect human health, wildlife and the environment. However, when you use the product under the terms of an off-label approval (see paragraphs 49 to 51), you must follow all the conditions specified for intended use together with those shown on the product label where relevant.
44. If you are using a vertebrate or slug control product or similar for test baiting to assess the extent of a pest attack, you must follow all of the statutory conditions of use of the product and adequately protect baits.

### **Safety information**

45. The safety information section of the product label will include the following details, when needed. Some of these precautions or requirements may also be statutory conditions of use or storage, and these will be clearly marked as such on the label.
- (a) The hazard classification of the product (in terms of its physico-chemical properties and effects on human health, wildlife and the environment), hazard symbols and associated risk phrases.
  - (b) The safety precautions (relating to human health, wildlife and the environment) which need to be taken when handling, applying, storing and disposing of the product. The following will be included in the safety precautions section.
    - Operator protection requirements, such as:
      - the need to use engineering controls (for example closed cabs when making broadcast air-assisted applications);
      - the need to use specified personal protective equipment (PPE);
      - for products containing anticholinesterase organophosphate or carbamate active substances, the phrase 'This product contains an anticholinesterase organophosphate (or carbamate or carbomoyl triazole). Do not use if under medical advice not to work with such compounds'; and
      - other safety phrases relating to, for example, the cleaning of PPE, the action to be taken if a person is contaminated, avoiding exposure, the need for specific training for certain products, good occupational hygiene practice, and the use of refillable containers.
    - Environmental protection requirements, such as:
      - prohibiting outdoor use;

- the need for specified withholding periods after application to protect livestock entering treated areas;
  - the need to bury (where this is an approved condition of use) or remove spillages to protect game, wild birds and animals;
  - requirements for buffer zones to protect aquatic life (including any LERAP requirements);
  - requirements for buffer zones to protect non-target insect and other arthropod species; and
  - application restrictions to protect non-target insects, other arthropods or (specifically) bees.
  - Consumer protection requirements, such as:
    - prohibiting use on food crops, in food storage or preparation areas or in occupied buildings;
    - the need for specified exclusion periods and ventilation periods after application to protect workers entering treated areas; and
    - the need to remove pets and livestock before treatment or to keep animals and birds out of the treatment area.
  - Storage and disposal requirements, such as:
    - requirements to store away from food, drink, animal feed and out of the reach of children;
    - specific requirements for products to be kept under lock and key or for products which are supplied in sachets; and
    - container rinsing, emptying, disposal, returning and reusing instructions as appropriate for the container type (washable, non-washable, single trip or returnable).
- (c) Medical advice, as appropriate, which may include:
- standard medical advice to be followed if someone is contaminated or suffers adverse health effects related to specific types of pesticides;
  - contact details of the National Poisons Information Service (NPIS) centres; and
  - other first aid advice.

### **Directions for use**

46. The directions for use section may include detailed claims, recommendations and instructions as follows (some of which will repeat the information given in the statutory area).
- Restrictions or warnings relating to, for example, use on inappropriate soil types or crops under stress.
  - Problems or pests controlled, possibly including advice on resistance management and any 'positive' tank mix recommendations (those for which specific claims are made).
  - Information on specific crops and situations to cover each use.
  - Restrictions on the planting of a following crop, if appropriate.
  - Mixing and spraying information including, for example, recommendations for application methods, water volume, spray quality, equipment cleaning and advice to use mechanical handling for containers that hold more than 20 litres of product or weigh more than 25 kilograms in total.

- Compatibility information including a list of ‘convenience’ tank mixes (those for which no specific recommendations for use are made) and any ‘positive’ tank mixes.
47. By following the directions for use, you can be sure that you are using the product safely and effectively. However, you do not have to follow the directions for use exactly, as long as you follow the statutory conditions of use and carry out a COSHH assessment and an environmental risk assessment (as described in this Code).

### **Labelling of treated seed and other propagating material**

48. Although the labelling of treated seed and treated plant propagating material is not covered by the arrangements described above, voluntary labelling guidelines have been agreed to make sure that appropriate safety information is provided with these types of treated material. By following these label instructions, you will meet your legal obligations to protect the health of people, creatures and plants and to protect the environment.

### **Extension of use**

49. For many reasons, label recommendations of approved pesticides do not cover the control of every problem which may arise. This is particularly true for crops that are grown on a relatively small scale in the UK, as well as for pests and diseases which are only an occasional problem. The ‘long term arrangements for extension of use’ have been developed to deal with this problem. These arrangements permit many professional pesticide products to be used for additional specific minor uses, subject to certain conditions which must be strictly followed. You can find full details of these arrangements on the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)
50. If the ‘long term arrangements for extension of use’ do not meet the need to control a particular pest, weed or disease, pesticide users (or organisations representing them) may apply for a ‘specific off-label approval (SOLA) for a pesticide product which already has approval for other uses. As off-label approval details are not given in the information provided by pesticide manufacturers (for example, the product label or leaflets) it is essential that if you need to use a pesticide product in accordance with a SOLA, you must read, understand and follow the Notice of Approval. This is to make sure that the off-label use will not increase the risk to the operator, the consumer or the environment. You can find these notices on the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)
51. If you choose to apply a pesticide in line with an extension of use, you will be responsible for any resulting commercial risk.

For more information on the labelling of pesticide products, see ‘The Labelling Handbook’ available on the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)

## **Section 2.3: storage of pesticides by users**

52. You can find detailed guidance on how pesticides should be stored by all professional users in Annex F (Health and Safety Executive (HSE) information sheet 16). This sets out the appropriate standards for fixed and mobile stores to make sure that pesticide users meet their legal responsibilities. If you need to use mobile storage for longer than 24 hours (for example, if you are a contractor routinely involved in large tasks away from your base), you should make sure that your store meets any appropriate higher standards set for fixed stores.
53. If you are storing over 200 kilograms or 200 litres of pesticides for sale or supply to others (this could be to an individual or company intending to resell or to apply the pesticide, or for sale or supply as part of an application service), further storage requirements (and storekeeper training requirements) are likely to apply. These are explained in the 'Code of practice for suppliers of pesticides to agriculture, horticulture and forestry' (the Yellow Code).
54. You must only store pesticides in the original container with the approved product label (the procedure for dealing with leaking containers is described in 'Emergency procedures'). Where pesticides are mixed with diluents, carriers, markers or adjuvants, you should use the resulting mixture immediately and should not store it.

### **Moving pesticides in and out of the store**

55. You must move containers in and out of the store carefully, particularly if you suspect that they may have deteriorated or been damaged. Before you move containers, check that they are not leaking, that closures are secure and that the product label (including associated information) is intact and readable.
56. Contain any spillage immediately (see 'Emergency procedures') and dispose of any contaminated material safely and legally (see part 5).

### **Do not leave pesticide containers unattended**

57. When pesticides are not in a secure store, you must not leave them unattended or out of sight of the person in charge of them. Stolen pesticides may be misused, causing harm to people and the environment. Unattended pesticides are a risk to people (especially children), pets, working animals, livestock and wildlife (it is not unheard of for dogs to eat through the unopened packaging of slug pellets). A competent person should be present when pesticides are being moved or transported and all deliveries should be supervised to make sure that stocks are stored safely and securely.

## Section 2.4: the COSHH assessment

58. If you have decided to use a pesticide, you must take account of various health and safety considerations.
59. Many pesticides are substances which are hazardous to health. A substance is hazardous if it has the potential to cause harm. The risk from a substance is the likelihood of it causing harm given the way in which it is, or will be, used.
60. The COSHH Regulations (see Annex A) apply to pesticides which have the following phrase on the container label: 'The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work'. COSHH may apply if the product:
- is classified as 'very toxic', 'toxic', 'harmful', 'irritant' or 'corrosive';
  - includes a substance which has a maximum exposure limit (MEL) or occupational exposure standard (OES) under the COSHH Regulations (see HSE guidance note EH40);
  - includes a micro-organism which may be a hazard to health;
  - includes dust which may be present in a 'substantial concentration' in the air (as explained in the HSC 'General approved code of practice on the COSHH Regulations', COP 29) when the pesticide is used; or
  - includes any substance not mentioned above which creates a similar hazard to health.
61. Under the COSHH Regulations, an employer or self-employed person must carry out a suitable and sufficient assessment of the risks to health likely to result from the use of a pesticide before work starts. This will help you to identifying the measures that you need to take to protect the health of any person who could be harmed.
62. The Health and Safety Executive (HSE) publishes extensive free information and guidance on how to carry out a COSHH assessment. You can get this from your local HSE office or from the HSE website at [www.hse.gov.uk](http://www.hse.gov.uk) You can also get further information through the HSE Infoline (telephone 08701 545500, fax 02920 859260 or e-mail [hseinformationservices@natbrit.com](mailto:hseinformationservices@natbrit.com)).

### When is an assessment suitable and sufficient?

63. A COSHH assessment will be suitable and sufficient if you use a systematic approach to identifying risks by:
- (a) considering the hazards presented by the pesticide selected for use;
  - (b) deciding who could be harmed and how;
  - (c) identifying action to prevent or achieve adequate control of exposure and to comply with COSHH requirements;
  - (d) recording the findings of the assessment as necessary; and
  - (e) revising the assessment when necessary.
64. The level of detail needed in the assessment will depend on the nature and the degree of risk involved in the work. You can get more advice

and examples of assessments in the Health and Safety Executive (HSE) publication 'A step by step guide to COSHH assessment'. You can also find advice and guidance in the free leaflet AS28, 'COSHH in agriculture' published by the HSE.

### **Finding out about the hazards**

65. The hazard presented by a product depends on the nature and concentration of the active ingredients and the other ingredients (co-formulants), and its form (for example, whether it is a liquid, granule, powder, gas or other type of product).
66. The main source of information on the hazards associated with a pesticide is the product label, which will show:
  - the hazard classification (for example, 'Irritant'),
  - the risk and safety phrases (for example, 'Irritating to eyes' and 'Wear eye protection...', respectively),
  - any restrictions relating to who should use the product (for example, certain people may have been advised not to work with anticholinesterase compounds), and
  - other safety-related restrictions and conditions (see section 2.2).
67. Other sources of information on hazards include:
  - (a) information provided by the manufacturer or supplier of the pesticide, for example, the material safety data sheet (MSDS) also known as the product hazard data sheet or material hazard data sheet (MHDS);
  - (b) the Schedules to the COSHH Regulations (see the HSC 'General approved code of practice on the COSHH Regulations', COP 29 for more information) and HSE's publication EH 40: 'Occupational exposure limits' (this sets out the acceptable levels for inhalation exposure which apply to some active ingredients used in pesticides);
  - (c) relevant guidance material on the use of pesticides published by HSC, HSE, Scottish Executive, Defra, PSD and other authorities;
  - (d) any previous experience of work with the pesticides; and
  - (e) technical, scientific or legal information on pesticide use in relevant trade and professional publications.

### **Assessing the risks: who might be harmed and how**

68. Employers or self-employed people need to consider whether any person might be at risk from exposure to pesticides. In doing so, they need to bear in mind how the product is to be applied, where and for how long it will be used, how containers will be handled and the possibility of an accident. Talking with workers' safety representatives, if your business has them, will help you to identify risks from particular working practices. Remember to consider:
  - (a) your employees (even those not using the pesticide);
  - (b) other people on the premises;
  - (c) anyone else in or near the area where the pesticide is used; and
  - (d) anyone likely to enter treated areas or be in contact with treated materials after the pesticide has been applied.

69. Assessing how employees and other people might be affected will mean using the hazard information (see paragraphs 65 to 67) and applying it to the circumstances of the work to be carried out. You should consider in particular:
- (a) who could be exposed and how (through the skin or by breathing or swallowing the pesticide), the extent of exposure and what could happen if the control measures fail; and
  - (b) what adverse effects the pesticide can have through the most likely routes into the body.
70. Absorption through the skin (for example, from handling the concentrate and from contamination with spray drift) is likely to be the main route of exposure for most pesticides, but there may also be risks resulting from breathing a pesticide (especially for volatile active ingredients and indoor uses) or swallowing a pesticide (possibly resulting from hand-to-mouth (or object-to-mouth) contamination for operators, and people entering treated areas or handling treated material).

### **Deciding what needs to be done to control exposure**

71. The next stage in the assessment is to identify which control measures are needed and decide how to put these into practice and properly maintain them. As an employer or self-employed person, you will need to consider whether you (if you use pesticides) and your employees are:
- (a) suitably and sufficiently instructed and trained in the use of pesticides, control systems and PPE where required (see part 1);
  - (b) aware of the hazards and familiar with the outcome of the risk assessment associated with using pesticides;
  - (c) familiar with the information on the product label and on any relevant data sheets and able to understand them (see section 2.2);
  - (d) provided with suitable equipment to handle, mix, load and apply the pesticide safely;
  - (e) provided with systems or equipment which will prevent or, where this is not reasonably practicable, adequately control exposure, including any PPE needed;
  - (f) able to take effective action if equipment fails or breaks down; and
  - (g) aware of the sort of ill-health effects that could be linked to exposure to pesticides and what signs or symptoms to look out for.
72. The COSHH assessment will also need to take account of any risks to people who enter treated areas or handle treated materials. This will include, for example:
- nursery workers entering treated glasshouses following fogging or misting operations;
  - members of the public using treated amenity turf;
  - forestry and nursery workers handling treated planting material;
  - farmers and growers handling and drilling treated seed, tubers, bulbs or onion sets;

- people handling treated foliage during harvesting, pruning or packing operations;
- workers handling treated compost or other growing media; and
- people handling freshly treated material during dipping or drenching operations.

Remember that most of these groups of people will have no knowledge of what pesticides have been applied or of the precautions they need to take as a result.

73. You can find guidance on a range of preventive and control measures to protect anyone who might be exposed to pesticides in section 2.5.

### **Recording the assessment**

74. In all but the simplest cases (where the results can be explained easily and at any time), you must record assessments and make the results available to everyone who needs to know them.
75. You should tell employees or their representatives about the results of the assessment, in particular the parts relating to any operation they have to carry out.

### **Reviewing the assessment**

76. Under the COSHH Regulations, you must review the assessment regularly. The COSHH assessment should state when you will carry out the review. The interval between reviews will depend on the risk, the type of work and a judgement on the likelihood of anything changing. In any case, you should review the assessment at least every five years.
77. You must carry out a review straight away if you suspect that the assessment is no longer valid or if there has been a significant change in the work the assessment relates to (for example, a change in what the pesticide is used for or the way it is applied). This may arise from discussions with safety representatives or workers. An assessment may also become invalid because of; for example, changes in the conditions of the product approval or the results of health surveillance (see section 2.6).

<p>Get advice from your supplier or the manufacturer if you believe the conditions of the pesticide approval have changed (see paragraph 38).</p>
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## Section 2.5: preventing and controlling work-related exposures of people to pesticides

The provisions described in this document for compliance with the requirements of the COSHH and PPE Regulations are in addition to the wider requirements for risk assessment of all aspects of the work in question under the Management of Health and Safety at Work Regulations.

78. Under the COSHH Regulations, the exposure of anyone (including members of the public) who may be affected by a work activity involving the use of substances hazardous to health must be properly prevented or, where this is not reasonably practicable, properly controlled.

### How can exposure be prevented or adequately controlled?

79. Preventing or properly controlling exposure involves a combination of measures. In order of priority, these are:
- (a) prevention, for example, by substitution (see paragraph 82);
  - (b) technical, engineering or operational controls (see paragraphs 83 to 84);
  - (c) personal protective equipment (PPE) (see paragraphs 85 to 91).
80. Under the COSHH Regulations, engineering or other control measures must be used in preference to PPE. However, in the case of pesticides, PPE will usually be needed as well as engineering or other controls in order to control exposure properly. Even if the COSHH Regulations do not apply, employers may still have duties under other legislation, such as that relating to the use of protective equipment at work (see Annex A).

The HSE publishes guidance on how to comply with 'The Personal Protective Equipment at Work Regulations 1992'.

81. When considering how to prevent or control the exposure of workers and members of the public entering treated areas or handling treated materials (see examples in paragraph 72), remember that, in many situations, these people will have no knowledge of what pesticides have been used or of the precautions they need to take. Because of this, you should use appropriate operational controls in these situations.

### Measures for preventing exposure to pesticides

82. These include:
- (a) using alternative methods of pest control (see paragraphs 27 to 28);
  - (b) substituting a pesticide that is less hazardous, or using the same pesticide in a less hazardous form (for example, using a product supplied in water-soluble bags); and
  - (c) organising the work to keep non-essential people away from the areas that are being treated (for example, the use of DGPS swath matching systems when applying pesticides from the air to avoid the need for people to act as ground markers).

## Measures for controlling exposure to pesticides

83. Methods for controlling exposure during preparation, for example when opening containers, transferring, diluting or mixing the contents or when handling empty containers or unwanted pesticides might include using:
- (a) pesticides in the correct pack size to treat the intended area (or to suit the volume of spray solution being prepared) to avoid having to weigh or measure the correct dose;
  - (b) induction bowls or closed transfer systems; and
  - (c) purpose-designed mixing tanks with closed transfer of the pesticide mixture to the sprayer.

The HSE publication 'COSHH Essentials' gives guidance on control measures for processes such as transferring, weighing and mixing hazardous substances. You can get more information at [www.coshh-essentials.org.uk](http://www.coshh-essentials.org.uk)

84. Measures for controlling exposure to pesticides during application, cleaning, repairing or adjusting equipment, dealing with spillages or disposing of any pesticide wastes include:
- (a) choosing the right equipment for the job (for example, using automated or remotely-operated equipment for treating glasshouse crops): if the proposed application method is likely to increase the risks to users, consider using alternative methods of pest control or application;
  - (b) before buying new equipment, making sure it has been manufactured to relevant standards and designed to reduce to a minimum any contamination during use or maintenance (for example, equipment with in-cab controls for major functions, self-flushing filters, hydraulically-operated boom folding and integral tank washing systems);
  - (c) fitting remote controls to equipment where these were not originally provided, located in the cab where appropriate (but avoiding the routing of hoses through the cab) or away from areas of likely contamination;
  - (d) making sure nozzles are in good condition and do not drip when sprayer is switched off (for example, by fitting and maintaining suitable check valves and associated pressure-relief systems);
  - (e) shrouding nozzles, other atomisers and powder dispensers where possible, especially for hand-held equipment and for application equipment operated near workers (for example, conveyor belt-mounted equipment and equipment mounted on manned planting machines);
  - (f) isolating users from application equipment, this is especially important for application techniques involving a high risk of user contamination (for example, using closed cabs when making broadcast air-assisted applications);
  - (g) keeping the application equipment clean, both inside and out, and well maintained;
  - (h) calibrating spraying equipment using only water and, for products applied as granules using the manufacturer's dummy calibration

- formulations or fixed, product-specific, metering rotors (where available); and
- (i) reducing the product dose when this is appropriate.

The Scottish Executive booklet 'Is your sprayer fit for work?' provides guidance on maintaining and checking field crop sprayers.

To make sure that your application equipment is working as it should be and is correctly calibrated, read the manufacturer's instructions. You can find further useful information in the BCPC publications 'Boom and Fruit Sprayers Handbook', 'Hand-Held and Amenity Sprayers Handbook' and 'Fertiliser and Granular Pesticide Handbook' (see Annex B).

The National Sprayer Testing Scheme (NSTS), managed by the Association of Agricultural Engineers (AEA), is a voluntary, independently validated inspection and testing scheme for a variety of application equipment. This scheme is intended to make sure that application equipment is operating accurately and efficiently, and so reduce the risk of contaminating the operator and the environment. A valid test certificate provides evidence to customers, crop assurance schemes and the general public that application equipment is working correctly. You can find more information on the NSTS website at [www.nsts.org.uk](http://www.nsts.org.uk)

### Using personal protective equipment (PPE)

The HSE publishes practical advice and guidance on choosing, using and maintaining respiratory protective equipment (RPE) (covered in the HSE booklet HSG53) and other types of personal protective equipment (PPE).

85. Employers must provide pesticide users with PPE where other controls are not reasonably practicable, or may fail to give the necessary level of protection.
86. The label (see section 2.2) may specify the use of PPE. However, to achieve the standard of control required by the COSHH Regulations, the assessment may conclude that a higher standard of PPE is needed. This is particularly the case when the risk to users may be increased through the legitimate use of products in ways other than those covered by the label information (see paragraph 87).
87. In some situations you may need to use PPE even though there is no requirement for it on the product label, or you may need to use more PPE than that specified on the product label (you may also need other measures to control exposure). These situations include:
- (a) permitted off-label extensions of use;
  - (b) use with adjuvants;
  - (c) some tank mixes;
  - (d) use in confined spaces;

- (e) work with a pesticide for more than eight hours during any day;
  - (f) reduced volume application;
  - (g) hand-held application;
  - (h) maintaining and cleaning equipment.
88. You can find guidance on the appropriate PPE to use in the situations described in paragraph 87, and similar situations, in Annex G. In all situations, even when there is no label requirement for PPE, it is good occupational hygiene practice for professional users to wear basic PPE such as coveralls, suitable protective gloves and boots at all times when handling and applying pesticides. If you are a professional user of home garden pesticides (for example, a professional gardener who uses amateur products), you should also consider using PPE, especially if you are using a product in greater quantities, more frequently or for a longer period of time than would be the case for a typical amateur user.

### **Suitable PPE**

89. The PPE you choose must comply with any relevant conditions of approval for the pesticide as shown on the product label. For off-label uses, you must also use any additional PPE specified on the relevant Notice of Approval (see paragraphs 49 to 51).
90. PPE has to be suitable for the purpose, including being correctly matched to the job and to the wearer. Employers should consult workers (or their safety representatives) about choosing PPE to make sure it fits and is suitable for them. You should pay particular attention to:
- (a) the nature of the pesticide and the level of exposure;
  - (b) the protection, comfort (for example, with regard to heat stress) and fit for the user, taking account of the environment in which the equipment is to be worn, the nature of the work being carried out, how long the equipment has to be worn for, and whether it is compatible with other clothing requirements (for example, high visibility clothing and protective head gear);
  - (c) the ability of the material from which the equipment is made to resist penetration by the pesticide;
  - (d) any limits on its performance stated in any relevant approved standard or by the manufacturer; and
  - (e) the face-fit (seal) for wearers of respiratory protective equipment (RPE) which relies on being close-fitting (most types other than air-fed visors and helmets).

You can get information on testing the face-fit of RPE from the HSE website at [www.hse.gov.uk](http://www.hse.gov.uk)

When choosing and using a disposable filtering facepiece respirator, remember:

- 'nuisance dust masks', which are commonly used by farmers when carrying out dusty tasks, are not suitable when using pesticides; and
- you should dispose of a respirator (safely and legally) at the end of each working day, or more often if it is significantly contaminated.

91. The PPE you choose will only perform effectively if you wear it and use it correctly. In some situations, the careless use of PPE or the use of unsuitable PPE may result in increased, rather than reduced, levels of operator contamination.

The BCPC booklet 'Safety Equipment Handbook' gives guidance for pesticide users on how to choose, use and maintain PPE and RPE.

### **Maintaining control measures**

92. Engineering controls and PPE will only be effective and meet the requirements of the COSHH Regulations, if they are maintained properly.
93. Keeping control measures in good repair usually means:
- carrying out regular, visual checks and more detailed inspections;
  - checking any fault-detection equipment; and
  - carrying out preventive servicing and repair work to remedy any defect that could reduce the level of protection. You must make sure that any faults reported are put right quickly, and do not let employees use equipment that is faulty.
94. Engineering control measures, such as closed transfer systems or specialised pesticide dispensing systems, should be:
- (a) visually checked at the beginning of the treatment season and before each use; and
  - (b) examined in detail and tested at suitable intervals.
95. You should regularly review operational procedures to prevent or control exposure to make sure they are still effective.
96. Maintenance will need to include inspecting PPE (including RPE), before, during and after each day's use so that damaged items can be replaced before further work with pesticides is carried out.
97. In addition, RPE needs to be thoroughly examined and, where appropriate, tested at least once a month (more often if conditions are particularly severe). You must keep records of these examinations and tests, as appropriate (see part 4), and correct any faults before the RPE is used again.
98. It is important to remove any PPE which is contaminated by pesticides as soon as possible to avoid an increased risk of exposure. Protective gloves should be thoroughly washed inside and out at the end of each

day's use, or disposed of if this is specified on the product label or if the gloves are not in a good condition. Other contaminated PPE should be disposed of safely and legally or, where appropriate, cleaned according to the manufacturer's instructions. All cleaning and disposal operations must result in an acceptable risk to the environment and meet legal requirements (see part 5). People handling contaminated PPE or other clothing will need to take appropriate precautions, and contaminated protective clothing should not be washed with domestic or personal items.

99. You should provide suitable storage facilities for PPE to keep it clean, dry, well ventilated and secure. Separate storage will be needed for personal clothing, such as coats and other items removed while working with pesticides.

### **Welfare facilities**

100. If you have full-time or part-time, casual or permanent staff, you should provide convenient and accessible washing facilities, located so that they do not become contaminated. These facilities will be in addition to the washing and decontamination equipment carried on the sprayer or available where the pesticide is being used.

### **What employees and self-employed people need to do**

101. Employees and self-employed people need to:
  - (a) use the control measures provided;
  - (b) wear suitable PPE provided and make sure it is fitted properly;
  - (c) remove contaminated PPE, wash affected skin and put on clean PPE before continuing to work;
  - (d) keep PPE in the storage provided when using it and after appropriate cleaning and maintenance has been carried out;
  - (e) before eating, drinking or smoking, take off any PPE which could contaminate food, drink or cigarettes; and
  - (f) practise a high standard of personal hygiene, by making full and proper use of the washing facilities provided.

## **Section 2.6: monitoring exposure and health surveillance**

### **When is exposure monitoring required?**

102. Monitoring exposure is not usually necessary if:
  - a pesticide is used in line with the conditions of the product approval and the manufacturer's recommendations; and
  - if the necessary control measures are properly used and maintained.
103. However, under the COSHH Regulations, there are circumstances where employers must make sure that their employees' exposure to substances that are hazardous to health is monitored by competent people. These include:

- (a) when the failure or deterioration of a control measure could result in a serious effect on health because of a pesticide's toxicity, or the extent or duration of exposure (for example, this could happen when people are working in confined spaces);
- (b) when the substance has an occupational exposure standard (OES) or maximum exposure limit (MEL), see below; and
- (c) when necessary as an extra check on the effectiveness of control measures (for example, to check the level of contamination affecting respiratory protective equipment).

You can find advice on monitoring methods in HSE Guidance Note HS(G) 173 'Monitoring Strategies for Toxic Substances'.

You can find information on those chemicals which have an OES or a MEL in the latest version of the HSE publication EH40.

### **What is health surveillance?**

104. Health surveillance is concerned with preventing ill health resulting from work activities. The COSHH assessment should identify the need to check the health of employees who could be exposed to substances that are hazardous to health.
105. Health surveillance covers a wide range of activities including:
- keeping health records;
  - checking by trained supervisors for signs of disease;
  - examinations by qualified nurses; and
  - medical surveillance under a doctor's supervision.
- Its purpose is to protect the health of employees by detecting, at an early stage, any adverse effects which may be caused by exposure to substances that are hazardous to health. It also helps employers to judge the effectiveness of their control measures and the validity of their COSHH assessment.

### **When is health surveillance necessary?**

106. Under the COSHH Regulations, employers must make sure that their employees are placed under suitable health surveillance if:
- (a) an identifiable disease or adverse effect on their health may be related to their exposure;
  - (b) there is a reasonable likelihood that the disease or effect may occur under the particular conditions of work; and
  - (c) there are valid techniques for detecting the disease or effect.
107. In practice, the pesticides that these requirements are most likely to apply to are those that can cause skin disorders and anticholinesterase products (for example, certain organophosphate products). Health surveillance can be carried out by a suitably trained person who does not need to be medically qualified. Most anticholinesterase products will be labelled with warning phrases, such as 'This product is an anticholinesterase organophosphorus (or carbamate or similar)

compound. Do not use if under medical advice not to work with such compounds’.

108. If it is reasonably likely that an adverse health effect could occur, surveillance should include biological monitoring of employees to detect the level of exposure or to look for signs of adverse effects. Biological monitoring should be carried out under the supervision of a registered medical practitioner.

Employers can find advice about biological monitoring for staff working with anticholinesterase products in HSE Guidance Note MS 17 ‘Biological monitoring of workers exposed to organophosphorus pesticides’.

109. Any registered medical practitioner supervising biological monitoring for exposure to pesticides should be familiar with the risks associated with working with the substances under investigation and the general principles of health surveillance (possibly gained through a formal training in occupational medicine).

You can find advice on other health surveillance procedures which may be appropriate in the HSC ‘General approved code of practice on the COSHH Regulations’, COP 29, as well as in other HSE Guidance, including the HSE booklets ‘Health surveillance under COSHH’ and ‘Surveillance of people exposed to health risks at work’.

#### **What else do employers need to do?**

110. Employers may need to reconsider your COSHH assessments in the light of the results of health surveillance.
111. Under the COSHH Regulations, employers must keep a health record for each employee who undergoes health surveillance (see part 4).

#### **What about sudden illness?**

112. Employers should make sure that any employees who are taken ill during or following work with pesticides are referred to a doctor (GP or A&E department) for diagnosis and treatment. Information on the pesticide involved, labels, safety data sheets and possible causes of contamination should accompany the patient. Employers should not allow the people affected to continue to work with pesticides until the doctor advises that it is safe to do so.
113. Employers must report these incidents in the appropriate way (see paragraph 126).

## Section 2.7: protecting the public

114. A COSHH assessment of work with pesticides must take account, as far as is reasonably practicable, of the way in which exposure could affect members of the public. The COSHH assessment should cover any extra measures needed when spraying near premises where there are vulnerable groups of people. Where these people could be affected, the assessment should take into consideration any need to notify or otherwise warn anyone about the work activity. Telling people beforehand will simply provide people who might otherwise be affected, with information about a future pesticide application. It is not, in itself, a control measure or an alternative to control measures.

### When is notification necessary?

115. If you apply pesticides from a helicopter or fixed-wing aircraft, by law you must notify others that a spray operation is to take place (see Annex I). Also, the conditions of approval for certain pesticides, such as sulphuric acid when used as a desiccant, may contain detailed requirements for notifying people and displaying warning notices.

If you are using sulphuric acid as an agricultural desiccant (or using another commodity chemical for an approved pesticidal use) you must comply with all the conditions of use set out in the appropriate commodity chemical approval. You can find guidance on the safe and legal use of sulphuric acid as an agricultural desiccant in the 'Code of best practice: safe use of sulphuric acid as an agricultural desiccant', produced by the NAAC (see [www.naac.co.uk/Codes/acidcode.asp](http://www.naac.co.uk/Codes/acidcode.asp))

### Notifying occupiers of adjacent property and bystanders

116. The application of pesticides in line with the label instructions should not pose a significant risk to the health of people outside the area being treated, as long as you follow the general advice in this Code (see section 3.6). The COSHH assessment may also conclude that it is not necessary to tell neighbours that you intend to apply pesticides. However, wherever practicable, it is generally good practice to inform occupiers of land, premises or houses close to the target area that pesticides are to be applied, and this may help to settle any concerns that neighbours may have about possible ill-health effects. You should also consider telling neighbouring growers of organic or sensitive crops when you are planning to apply a pesticide.
117. Pesticide application, especially in amenity situations, may attract the attention of members of the public. For some products, information cards are available that you can give to interested bystanders (see paragraph 35).

## Vulnerable groups

118. You need to take particular care when applying pesticides near premises where there are vulnerable groups of people (for example, hospitals, schools and retirement homes). Application operations near schools may attract children to the boundary of adjacent play areas to watch. Where vulnerable people could be affected, the assessment should consider any need to notify or otherwise warn anyone that you are going to apply pesticides and, if necessary, agree with those in charge any extra precautions that need to be taken to avoid exposure.
119. Measures to prevent or control any risks to vulnerable people identified by the COSHH assessment may include leaving an untreated area next to the neighbouring property.

Remember, you should never use notification of neighbours as an alternative to control measures.
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## Buffer zones

120. There is no legal requirement for an unsprayed buffer zone to be left between a treated area and neighbouring residential property (although this may be done on the basis of a COSHH assessment, see paragraph 119). However, spraying right up to a neighbour's boundary will increase the likelihood of drift onto their property. You must not allow this to happen as 'any person who uses a pesticide shall confine the application of that pesticide to the land, crop, structure, material or other area intended to be treated' (see Annex A, 'COPR').

## Public rights of way

121. Application of a pesticide on a public right of way may result in a health risk for those using the right of way, particularly until the spray has dried. Pets could also be affected. Because landowners and occupiers have no power to close a public right of way (even temporarily), you should not use pesticides on these areas if there is a significant risk to people and animals. You will need to take special care in some amenity and forestry situations, which may have largely unrestricted public access.
122. You should not overspray public rights of way including roads, footpaths and bridleways or allow spray to drift onto them when treating an adjacent crop.
123. Where a public right of way crosses or runs alongside a field or other area to be treated, members of the public could be at risk during the application of pesticides. You should always consider using notices, warning people that pesticides are being applied and advising that they keep themselves, children and pets to the public right of way.
124. Notices should not aim to stop people from using a right of way. If, despite warning notices, members of the public use the footpath or

bridleway, you must temporarily stop applying pesticides if there is a possible risk to their health.

125. Always remember to remove warning notices when they are no longer needed. Take account of any remaining risks, such as to children and pets straying into freshly treated areas. With some pesticides it is a condition of approval that unprotected people and livestock should be kept out of the treated area for a specific period. You should not use these pesticides if you are not able to comply fully with the requirements for exclusion or withholding periods.
126. When public rights of way are treated for weed control in amenity situations, you should follow the guidance in paragraphs 121 to 125 relating to the safety of people and animals, as appropriate. In addition, when using vehicle-mounted or trailed application equipment on public rights of way, you must consider the safety and legality of the intended use. It is essential to consult, and if necessary get the permission of, the local authority before carrying out this work.

You should report any incident involving people and pesticides to your nearest HSE office (the address and phone number will be in the local phone book under 'Health and Safety Executive'). You can get further details from HSE Information Services (see Annex E).

Certain incidents need to be reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995. You can get a guide to these regulations from HSE. If you are not sure whether an incident needs to be reported, you can phone the HSE to check.

## **Section 2.8: protecting wildlife and the environment**

127. Just as you must carry out a COSHH assessment when you plan to use pesticides, you should also carry out an assessment of the environmental effects to identify which precautions you should take to protect wildlife and the environment.
128. The information on the product label will provide the basis for the environmental risk assessment (see section 2.2). Further information, such as environmental information sheets (EIS), may be available for some products (see paragraph 35).

### **How can wildlife and plants be protected?**

129. When planning to use pesticides, you should consider the impact on biodiversity. The Scottish Biodiversity Strategy produced by the Scottish Executive, in conjunction with the Scottish Biodiversity Forum, provides a framework for the protection and enhancement of Scotland's biodiversity (see [www.scotland.gov.uk/biodiversity](http://www.scotland.gov.uk/biodiversity)). Guidance at a UK level is also available from the UK Biodiversity Partnership (see [www.ukbap.org.uk](http://www.ukbap.org.uk)). Hedges, ditches or bodies of water are all important wildlife habitats. These areas are relatively insignificant as

sources of pests or diseases under normal circumstances. You should avoid contaminating such areas by pesticides (either by direct application or from drift) in order to protect beneficial or harmless insects and other wildlife. Similarly, contamination by herbicides could kill a wide range of wild plants and may encourage aggressive weed species to become established. It is important that you recognise these sensitive features in the area to be treated, you assess the risks to them which could result from pesticide use and you protect them appropriately (possibly by using untreated buffer zones).

130. For field crops, it may be possible to establish a permanent grass margin to prevent weeds moving into the crop, while providing a habitat for wildlife (including beneficial insects) and protecting hedgerows. In some situations, it may be possible to establish a conservation headland (usually the outermost six metres) to allow grasses and broad-leaved plants to grow and to encourage the insects that live on them. These insects are food for farmland wildlife and birds. Where conservation headlands have been established, you should follow agreed management principles to avoid any risk to non-target plants and animals. Some pesticides will have specific restrictions on the label which you must follow.

You can get more information on protecting field margins and conservation headlands from The Game Conservancy Trust, the Farm and Wildlife Advisory Group (FWAG) and Linking Environment and Farming (LEAF).

In agricultural situations, the drawing up of a crop protection management plan (CPMP) or carrying out a LEAF or EMA audit (or similar) will help to make sure that you are taking a planned approach to reducing the environmental impact of pesticides on your farm or holding (see the link from [www.cropprotection.org.uk](http://www.cropprotection.org.uk)).

### **Designated Areas for Nature Conservation**

131. Some areas have a special status in law, for example sites of special scientific interest (SSSIs) or Natura sites (SACs and SPAs). All these sites must be protected from the potentially harmful effects of using pesticides in or near them. You should always consult Scottish Natural Heritage (SNH) before you apply pesticides in or close to these areas. You may be committing a criminal offence if you use pesticides without first consulting SNH, or if the use of pesticides results in damage to (or the deterioration of) a protected site. If you intend to apply pesticides from an aircraft in or near these areas, you must follow specific rules (see Annex I).

Examples of special areas are:

- sites of special scientific interest (SSSIs);
- special areas of conservation (SACs);
- al protection areas (SPAs).
- local nature reserves;
- marine nature reserves and

- national nature reserves.

132. The owner or occupier of the area to be treated is legally responsible for notifying the appropriate conservation agency of any proposed use of a pesticide. A contractor who damages a protected site may, however, also be prosecuted and fined. Any person applying pesticides should confirm in writing with the owner or occupier whether the area to be treated or its surroundings need special consideration. If in doubt, advice should be sought from Scottish Natural Heritage. Detailed treatment records are particularly important if pesticide use is in or near these sites.

### **Wild birds and mammals**

133. Wild birds and mammals (including pets) are at particular risk from treated seed and from pesticides in granule, pellet or bait form. Make sure you follow all label precautions to protect birds and mammals. In particular, you must make sure that all treated seed is adequately covered by soil when drilling, and that soil-incorporated granules and pellets are not left on the soil surface. Also, you must not leave any spills of treated seed, granules or pellets lying around. The same requirements apply when test baiting using pesticides for vertebrate control or slug control (see paragraph 44).

### **Honeybees**

134. Products that may harm bees will be labelled as 'harmful', 'dangerous', 'extremely dangerous' or 'high risk' to bees. During those times of the year when bees are at risk or when you intend to use a pesticide that may harm bees, you should inform the beekeepers identified in your environmental risk assessment or the local beekeepers' spray liaison officer 48 hours before you plan to use the pesticide. This will allow beekeepers to take the necessary precautions. You should also tell beekeepers if you change your plans.

The Scottish Beekeepers' Association (SBA) will be able to give you details of the beekeepers' spray liaison officer for the area (see [www.scottishbeekeepers.org.uk](http://www.scottishbeekeepers.org.uk))

135. After assessing which pesticide is the most appropriate, you should also consider the following:

<b>Measures for protecting bees</b>	
<p><b>Do</b></p> <ul style="list-style-type: none"> <li>• check for bees foraging, or visiting plants (remember that the honeydew produced by aphids is attractive to bees);</li> <li>• follow closely the environmental protection instructions on the label and the guidance in this Code;</li> <li>• spray in the evening when bees have stopped flying, as this allows several hours for the pesticide to dry before bees become active again; and</li> <li>• if you have to spray during the day, choose a cool cloudy one, or the early morning.</li> </ul>	<p><b>Do not</b></p> <ul style="list-style-type: none"> <li>• spray unless you have to;</li> <li>• use pesticides labelled 'harmful', 'dangerous', 'extremely dangerous' or 'high risk' to bees if crops or weeds are in open flower or part bloom, unless this is allowed by the product label; or</li> <li>• let pesticide drift into bee hives where it can kill brood and adult bees or into hedgerows or fields where bees, including bumblebees, may be foraging.</li> </ul>

### **Other beneficial insects and non-target arthropods**

136. Your assessment of the environmental risks needs to take account of the effect of the use of pesticides on other beneficial insects (for example, ladybirds and lacewings) and non-target arthropods in general. The product label may require or advise that an unsprayed margin (of a fixed, specified size) is left around the treated area to protect non-target arthropods. Also, the product label may specify or recommend other spraying restrictions to protect these species (see section 2.2).

### **Livestock**

137. Where there is a risk to livestock from the use of a pesticide, a period of time for which animals need to be kept away from the treated area will be specified on the product label. Make sure you comply with this.

138. Some poisonous weeds, such as ragwort, can become more attractive to grazing animals after they have been treated with herbicides. Keep livestock out of treated areas until the foliage of these such weeds has died and completely disintegrated. This may take a longer time than the livestock withholding period stated for the pesticide used (see paragraph 137), where one is specified on the product label.

### **Fish and other aquatic life**

139. Fish and other aquatic life can be at risk from exposure to pesticides.

140. For pesticides which present a risk to aquatic life, it is a statutory condition of use that you must leave an untreated buffer zone between the treated area and the top of the bank of an adjacent watercourse (or dry ditch) to reduce the level of spray drift affecting the watercourse. In some circumstances, you can adjust the size of a buffer zone to protect aquatic life on the basis of a local environmental risk assessment for pesticides (LERAP) to suit your individual situation. The continuing approval of some products may depend on you complying fully with the LERAP schemes.

141. The product label (see section 2.2) will state whether a pesticide needs a buffer zone to protect aquatic life and whether this buffer zone may be adjusted on the basis of a LERAP.
142. You can find detailed guidance on how to carry out and record a LERAP when applying pesticides using a ground crop sprayer or broadcast air-assisted sprayer in the booklets 'Local environmental risk assessment for pesticides: horizontal boom sprayers' and 'Local environmental risk assessment for pesticides: broadcast air-assisted sprayers'. You can download these booklets from the PSD website (where you will also find lists of accredited low drift spraying equipment and pesticide products eligible under the LERAP schemes) at [www.pesticides.gov.uk/farmers/leraps.htm](http://www.pesticides.gov.uk/farmers/leraps.htm)
143. When you use accredited low drift spraying equipment (both nozzles and complete spraying systems) under the LERAP schemes, you must operate the equipment exactly as stated in the operational parameters associated with its listing on the PSD website.
144. There is a legal requirement to record the basis for LERAP decisions (even if you have chosen not to reduce the buffer zone stated on the product label to reflect local conditions) and all records must be kept for a period of 3 years from the date of the spray operation (see part 4).
145. The LERAP schemes for the protection of watercourses and dry ditches do not apply to kerb-side gullies, French drains or similar structures often present in amenity and industrial situations. In these situations, you should take all the necessary precautions to avoid contaminating surface water and groundwater (see paragraphs 149 to 159) and you should follow the guidance for applying pesticides on hard surfaces (see paragraph 210). Similarly, the LERAP schemes do not apply in situations where temporary ditches are created, such as in some forestry operations.

### **Wildlife incident investigation scheme (WIIS)**

146. Very occasionally, using an approved pesticide correctly may result in animals, birds or other wildlife being accidentally poisoned. However, most poisoning incidents caused by pesticides are the result of the misuse or deliberate abuse of a substance with the intention of killing an animal or a bird. This happens in urban areas as well as the countryside. These practices are illegal and may result in prosecution.
147. If you suspect that a pet has been poisoned or if you find a wild animal, bird or other wildlife dead in unusual or unexplained circumstances, report it immediately to the WIIS (Freephone 0800 321 600). If appropriate, an officer from the scheme will investigate.
148. Avoid contact with animal carcasses, suspect baits, pesticides or containers and never try to unblock a badger sett or fox earth which may have been gassed (see 'Emergency procedures').

## Preventing pesticides from contaminating surface water and groundwater

149. Water can be contaminated, either directly or indirectly, by the use of pesticides, and this could have serious consequences for the environment. When spraying alongside watercourses, take appropriate precautions to reduce spray drift (see part 3, section 3.6) and follow any buffer zone and LERAP requirements for the protection of fish and other aquatic life (see paragraphs 139 to 145).
150. Watercourses can also be contaminated by pesticides leached through the soil to field drainage systems. You should take care to avoid applying pesticides when the risk of loss through drainage systems is high. Stewardship schemes to reduce this problem have been agreed for specific pesticides (you can get more information on the Crop Protection Association website at [www.cropprotection.org.uk](http://www.cropprotection.org.uk)).
151. Groundwater (defined as 'all water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil') can be contaminated by pesticides. To protect groundwater, you must not dispose of waste pesticide washings or residues onto land without an authorisation under the Groundwater Regulations 1998 having been granted by SEPA. Before an authorisation can be granted, the suitability of the proposed disposal area must be assessed. However, when you use a pesticide in line with the product approval, you do not require a Groundwater Regulations authorisation. This normal approved use includes spraying the washings back onto the treated crop or area provided that, when doing so, you do not exceed the maximum approved individual dose (see part 5).
152. There are some circumstances when the approved use of a pesticide may present a risk to groundwater. Where groundwater is vulnerable (for example, because of a shallow water table, thin soil or very sandy soil), pesticides may move rapidly through the unsaturated zone and enter groundwater. This may be of particular concern where the groundwater is feeding a drinking water supply. In general, persistent pesticides should not be applied within 50m of a spring, well or borehole used for water supply and you should consider the use of all pesticides carefully within these areas, especially on rapidly draining surfaces such as railway ballast, gravel, hard standing and similar areas. SEPA can be consulted for site-specific advice on groundwater protection in such areas. If there is a public water supply nearby, then a larger zone of restriction on pesticide use may be appropriate. In these cases, Scottish Water may be able to provide more information on protection zones identified around their sources.
153. Take particular care when you prepare a pesticide for use (see part 3, section 3.4), when you transport it to the area being treated (see part 3, section 3.3) and when you clean equipment (see part 5). Carry out all mixing and filling operations well away from watercourses, ditches and drains. If it is necessary for you to use a specific area for all your mixing and filling operations, this should be sited where it will not be affected by flooding or by cross contamination (for example, by vehicle

movements) and should be designed to protect groundwater (possibly by including an appropriately constructed and operated biobed in the design). In other situations, it may be possible to mix and load the pesticide at the area being treated (see paragraph 184). If you spill any pesticide or spray solution, make sure you contain the spillage to minimise any contamination. Do not allow pesticides to get into any yard or field drain, ditch or other watercourse. Never hose down a spill. Instead use an inert absorbent material (such as cat litter or dry sand) to soak it up and dispose of the material safely and legally (see 'Emergency procedures' and part 5).

Very small quantities of a pesticide concentrate can have a significant effect on the environment. A spillage of only 1 gram of active ingredient will need to be diluted by 10 million litres of water to meet the European maximum limit for a pesticide in drinking water (0.1 parts per billion). This is equivalent to the quantity of water needed to fill a stream 1 metre wide and 0.3 metres deep for 35 kilometres (22 miles).

You can get more guidance on preventing water pollution from the Scottish Executive booklet 'Keeping pesticides out of water' and from the CPA publication 'Every drop counts: keeping water clean'.

154. When you are driving or transporting application equipment to and from the area you are treating, make sure it is not overfilled and cannot leak or drip. Avoid fording water at all times and, where possible, it is the best option to avoid crossing watercourses by any means (see part 3, section 3.3).
155. Whenever possible, you should decontaminate application equipment (inside and out) within the treated area, and avoid using a single dedicated cleaning area. Generally, repeatedly flushing spraying equipment with low volumes of water will be at least as effective as a single rinse using a large volume, and will create less rinse water. If spraying equipment is fitted with a low volume tank washing device, you should use this as recommended by the manufacturer (see part 5).
156. Portable bunded drip trays of various types and sizes designed to catch spillage of concentrate during mixing and loading operations and to contain washings during sprayer cleaning are commercially available. Using them may help to reduce environmental contamination.
157. You should always store sprayers and other application equipment under cover to avoid contaminated rainwater run-off, which may result in groundwater and surface water contamination.
158. In forestry re-stocking operations and similar activities involving treated propagating material, it is important to make sure that pesticide-treated plants are kept away from ditches and other surface water. Managers should make sure that planters are aware of this and do not try to 'freshen up' treated material in this way.

159. There may be occasions when it will be necessary to use a pesticide to control weeds in or near water. Aquatic and bank-side plants are an important part of the ecosystem, so you should consider other methods of control before deciding to use a pesticide (see paragraphs 27 to 28). If you decide that it is necessary to use a pesticide in or near any water (not just rivers and streams) you must only use one approved specifically for use in or near water. You must also consult the local Scottish Environment Protection Agency office before you use the pesticide.

You can get more guidance on using pesticides in or near water in the booklet 'Guidelines for the use of herbicides on weeds in or near watercourses and lakes' and in the book 'Use of herbicides in or near water'.

### **Direction of spraying near watercourses**

160. As a general principle, spraying operations near a watercourse with a significant flow should take place in the opposite direction to the main water flow (that is, always spray in an 'upstream' direction). This approach will reduce the maximum concentration of pesticide that could occur at any one point in the watercourse and hence reduces the risk to aquatic life. You should follow this principle, which also applies to the application of pesticides approved for use in or near water (see paragraph 159) through ground-based equipment, in addition to (not instead of) the guidance contained in paragraphs 149 to 158.

### **Application of pesticides from an aircraft**

161. The specific legal requirements you must meet before, during and after applying a pesticide from the air (and details of the consultation process needed) to minimise the risk to the environment are set out in Annex I.

### **Invasive weeds**

162. Invasive and non-native weeds which have the ability to establish rapidly and out-compete native species can cause major problems. Plants such as Japanese Knotweed can cause extensive damage to paving, tarmac; buildings flood defences and archaeological sites. Aquatic plants such as *Crassula helmsii* (commonly known as New Zealand Pigmyweed or Australian Swamp Stonecrop) can rapidly invade freshwater habitats, creating a risk to people (especially children) and animals by hiding the water surface, and increasing the risk of flooding by blocking streams and drainage channels. You will need to be careful to prevent further problems (such as soil erosion) when controlling these invasive weeds.
163. When you are planning the control programme, you should make sure that you follow all the relevant guidance in this Code. You should also consult, and take advice from, organisations such as the Biodiversity Research Working Group (BRWG) and the Scottish Biodiversity Forum

Action Plan Science Group (APSG), who may be able to provide information about ongoing research in this area.

The Pesticides Forum booklet 'Pesticide use – the environmental issues' provides background information on the major environmental issues associated with using pesticides (see the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk))

## Part 3: working with pesticides

164. Part 3 of this Code provides guidance on:

- how to handle, transport and prepare pesticides for use;
- how to use them safely; and
- what action to take after using them.

### Section 3.1: preparing to apply pesticides

165. It is important to carry out a series of checks before using any pesticide, and regularly during the treatment season. Make sure that you have taken the following action.

➤	You have read and understood the product label and any additional information relating to off-label uses, where appropriate (see part 2, section 2.2).
➤	You have made a suitable and sufficient COSHH assessment, recorded it as necessary, and it is still valid (see part 2, section 2.4).
➤	Any operational and engineering measures to control human exposure are in place and properly maintained, and suitable PPE is available (see part 2, section 2.5).
➤	You have carried out an appropriate environmental risk assessment (including an assessment of the risks to groundwater and surface water and a LERAP, where appropriate), recorded it as necessary, and it is still valid (see part 2, section 2.8).
➤	You can comply with any measures to protect wildlife and the environment (such as buffer zones to protect aquatic life, buffer zones to protect non-target arthropods, application restrictions to protect bees, non-target arthropods, surface water and groundwater, and to meet LERAP requirements) when using the pesticide (see part 2, section 2.8).
➤	You have taken account of the need to avoid contamination of feed stores or areas that livestock have access to (such as milking parlours).
➤	You have taken measures to meet any requirements for withholding livestock or excluding people from treated areas. You have also made sure that all requirements for specific time periods for exclusion, withholding or ventilation following the treatment will be followed (see paragraph 125).
➤	You have received permission from the appropriate agencies before using pesticides in specified areas of special environmental status (see paragraphs 131 to 132), in or near water (see paragraphs 159 and 220), from the air (see paragraphs 161 and 221) and, where necessary, on public rights of way (see paragraph 126).
➤	Where necessary or appropriate, you have given adequate notice to beekeepers, occupiers of neighbouring properties and members of the public, and you have displayed warning notices (see part 2, section 2.7). Specific requirements apply when spraying from the air and when spraying sulphuric acid (see paragraph 115).
➤	You have checked application equipment to make sure it is in good working order and is correctly and accurately calibrated (see paragraph 84).

➤	Established emergency procedures are in place and operators have the appropriate emergency equipment (such as spill kit and decontamination equipment for skin and eyes), emergency details for the products being used (such as the MSDS) and a list of emergency contact details for the environment agencies and medical services (see 'Emergency procedures' section).
➤	The pesticide can be transported safely and legally to the treatment area (see part 3, section 3.3).
➤	There is enough of the correct pesticide to complete the job and the calculations of the quantity of pesticide needed for each tank, load or run is correct, possibly allowing for an untreated or underdosed area for sprayer washings (see paragraphs 258 to 262).
➤	You have made appropriate arrangements for cleaning application equipment (with any special decontamination procedures where needed) and for disposing of any waste pesticide and pesticide packaging, such as containers, closures and foil seals, safely and legally (see part 5).

### **Dangerous practices**

166. The following activities are dangerous when pesticides are being used. They should be forbidden by employers and never practised by anyone using pesticides.

- (a) Sucking or blowing by mouth at any nozzle pipe connection or device which forms part of the pesticide transfer or application equipment.
- (b) Continuing to work after being contaminated, unless the affected skin has been washed and all contaminated items of clothing have been removed and replaced with clean ones.

167. You should also make sure that you do not eat, drink, smoke or go to the toilet while working with pesticides. You should carry out these activities outside the treated area, after you have removed your PPE and washed your hands and face.

### **Section 3.2: handling pesticide containers**

168. Read the label before opening any pesticide container. Make sure that you follow the precautions shown on the product label to protect human health, wildlife and the environment. Comply with any requirements for operator protection given on the label and, for any extensions of use, the relevant Notices of Approval (see part 2, section 2.2).

169. Even when there is no label requirement for PPE, it is good occupational hygiene practice for professional users to wear basic PPE (such as coveralls, suitable protective gloves and boots) at all times when handling pesticides or their containers.

170. All pesticides will need to be handled in a well-ventilated area to avoid any possible build up of vapours. Avoid sources of ignition as some pesticides may present a fire risk.

If you handle flammable products you should read and understand HSE Guidance booklet HS(G)51 'The storage of flammable liquids in containers'.

171. If pesticide containers are damaged, you will need to take extra precautions.
- (a) Wear the PPE stated on the label (or if this section of the label has become illegible the appropriate PPE specified in Annex G) and also that specified on the MSDS.
  - (b) Contain any spillage immediately (see 'Emergency procedures') and dispose of any contaminated material appropriately (see part 5).
  - (c) If the contents cannot be safely used immediately, either put the damaged container with its contents in another suitable container or transfer the contents to a useable container which has held the same product. Whichever alternative you choose, the container must be clearly labelled with the name of the pesticide, the appropriate hazard information and the precautions to be taken. Where possible, use original labels: your supplier should be able to help.

Never use an empty food or drink container to hold a pesticide.

172. Take care when moving pesticide containers in and out of the store (see paragraphs 55 to 56) and never leave pesticide containers unattended (see paragraph 57).

### **Section 3.3: transporting pesticides by users**

173. This section contains guidance for pesticide users on how to transport pesticides safely and meet the requirements of legislation relating to the carriage of dangerous goods (see Annex A). Most of the legal requirements only apply above certain quantity thresholds which depend on how the goods are being carried (for example, in packages, in tanks or in bulk) as well as on their transport category which may be given in the approved carriage list (ACL). In addition, agricultural pesticides (see Annex C) or plant protection products (but not sulphuric acid) are exempt from some of these legal requirements as long as they:
- (a) have been given approval under the Control of Pesticides Regulations 1986 (as amended) or an approval under the Plant Protection Products Regulations 2003;
  - (b) are transported in or on an agricultural vehicle (see Annex C) or any associated trailer;
  - (c) are diluted ready for use, or supplied in a ready-to-use form; and
  - (d) are being carried from one piece of land occupied for the purpose of agriculture to another within a radius of 50 kilometres.
174. Although a significant proportion of pesticide transport operations (especially on farms and holdings) will meet these conditions, users collecting pesticides from their suppliers or transporting pesticides from their store to other locations (such as contractors, especially in amenity

and forestry situations) may not be exempt from these requirements, depending on the type of vehicle being used and the amount of pesticide being transported.

175. Even if these exemptions apply, you must still meet other conditions applying to the carriage of dangerous goods. These include requirements relating to, for example:
- the suitability of vehicles and containers for certain dangerous goods;
  - displaying information on containers and vehicles; and
  - providing and carrying emergency information relating to the goods.

### **General precautions to be taken when transporting pesticides**

176. By following this guidance, you can minimise the likelihood of spillage or similar incidents and, if these incidents do occur, this will make it easier for the emergency services, and other agencies, to deal with them.

177. Drivers of tractors and vehicles which tow trailers and crop protection equipment will need to check that coupling pins and other fastening devices are secure before moving off. Anyone involved in transporting pesticides will need to be aware of the procedures to be followed if there is an emergency (see 'Emergency procedures').

178. If there is a spillage and a possibility of a risk to other people, animals or the environment, you should take immediate action to limit the effects (for example, to contain the spill). You should also warn others who may be affected or who have an interest; for example, the appropriate environment agency.

179. To protect water from the risks of pesticide pollution, avoid fording water at all times. Wherever possible, avoid crossing watercourses at all, or, if unavoidable, use a bridge or tunnel.

180. If a fire breaks out, call the fire brigade, the police and the appropriate environment agency. You should give them the relevant information about the nature and the quantity of the pesticide involved.

181. Take advice from the pesticide manufacturer or fire authority on providing suitable fire extinguishers. Any fire water run-off could contain high levels of pesticides and so could be as dangerous and polluting as a spillage (see 'Emergency procedures').

182. If pesticides are transported in application equipment, make sure that there are no leaks or spills. Check that hoses, nozzles and other fittings are maintained in line with the manufacturer's instructions. Make sure that valves which control the flow of pesticide to the spraying equipment are shut during transport to minimise the risk of dripping and leakage. Make sure all covers on application equipment are securely closed after tanks or hoppers have been filled.

183. Take care not to overfill application equipment as this may cause the tank contents (as spray solution or foam) or hopper contents to spill during transport, especially over rough terrain. This could lead to environmental and operator contamination.
184. Pesticides which require constant agitation as a spray solution should, whenever possible, be added to the sprayer tank when you reach the area you are going to treat. This is to avoid the need to have the sprayer pump and recirculating system operating during transport. When considering this, you should take account of the mixing instructions for the pesticide products and the type of induction equipment fitted to the sprayer. By using a suitable bowser (possibly fitted with a stand-alone, high flow rate transfer pump), it should be possible to carry out all mixing and loading operations at the treatment site. This will avoid the environmental problems associated with using a single dedicated filling site and may increase work rates significantly.
185. You should not transport pesticides with children, animals, farm produce or animal feed. When mixed loads need to be transported, you must separate them appropriately.

### **Transporting pesticides inside a vehicle**

186. When pesticide containers and equipment are transported inside vehicles, you should separate them from the driver and any passengers by a chemical and vapour-proof barrier.
187. To prevent the containers being damaged, avoid carrying them in tractor cabs, tool boxes or in other ways which might lead to the containers being crushed or punctured.
188. Put small or medium-sized quantities of pesticides in a secure chest.

### **Loading and unloading pesticides**

189. Take care to prevent damage to pesticide containers and associated equipment when loading or unloading trailers or vehicles. In particular, check whether:
- (a) the containers are stacked as recommended by the manufacturer;
  - (b) the trailer needs to have side boards fitted;
  - (c) the containers can move about (if so, consider physically restraining them or putting them in any stowage facilities fitted to the vehicle);
  - (d) the packaging and label need to be protected from the weather (for example, if they are made of cardboard or paper);
  - (e) mechanical handling is required or recommended for any of the containers (the product label may advise you to use mechanical handling for containers that hold more than 20 litres or weigh more than 25 kilograms: see part 2, section 2.2).

## Further action

190. After use, thoroughly clean equipment in which pesticides have been moved or transported, and dispose of the washings in a safe and legal way (see part 5).

You can get detailed guidance on how to meet the legal requirements for transporting dangerous goods from the HSE. Requirements and recommendations for transporting pesticides safely and legally are summarised in 'Guidance on the safe carriage of agrochemicals by road' published by BASIS.

## Section 3.4: filling equipment

191. Always follow the label instructions when mixing and loading a pesticide into the application equipment. Take the following precautions.

➤ <b>Do:</b>	<b>X</b>	<b>Do not:</b>
➤ use any purpose-designed device which is fitted or available to remove container seals;	X	use bare or gloved fingers to break the seal on a container;
➤ follow label instructions when opening containers designed for use with closed transfer equipment;	X	try to remove valves and other fittings on returnable containers to remove residual product (these containers are overfilled to allow for residual product, and removing tamper-evident seals is unsafe and may result in extra charges);
➤ re-seal partly-used containers;	X	open more than one container at a time;
➤ make sure there can be no run-back or back-siphoning of pesticides into the water supply;	X	make a direct connection between a domestic water supply and a spray tank;
➤ use an intermediate tanker or system to prevent back-siphoning;	X	take water straight from a stream into application equipment;
➤ pay close attention to the level of the tank contents when filling;	X	leave the sprayer unattended while filling or allow the tank to overflow or to be overfilled;
➤ take care when filling equipment with a narrow filler opening (such as some back packs for use with spot guns and CDA lances): use a suitable funnel and fill slowly;	X	contaminate the outside of hand-held equipment or knapsack sprayers when filling, as this will result in operator contamination;
➤ use pesticide containers of appropriate sizes to minimise the need for measuring or weighing;	X	transfer pesticides between containers, measuring equipment and application equipment unless you have to;
➤ use pesticides in water-soluble packaging where appropriate;	X	try to open water-soluble bags if the unit dose of pesticide is too large;

➤	measure out pesticides accurately using suitable equipment used only for this purpose and rinse it immediately (for pesticides which need to be weighed, use scales dedicated to the task);	X	use measuring and dispensing equipment (for example, jugs, buckets and drum pumps) which is used for products other than pesticides;
➤	transfer pesticides from small volume returnable (SVR) and intermediate bulk containers (IBC) directly to the application equipment using a compatible closed transfer and metering system or the container's integral transfer device;	X	try to use incompatible transfer equipment, use gravity discharge from an IBC or transfer a pesticide from a bulk container into smaller containers;
➤	make sure of a good foothold if you have to pour directly into a tank, preferably on the ground or a platform at the right height;	X	lift containers above shoulder height;
➤	use mechanical handling for containers where the label advises this;	X	try to shake large containers before use (the label will provide guidance on how the product should be agitated or re-circulated before use);
➤	use filling devices such as low level induction bowls or separate mixing hoppers;	X	climb up a sprayer with an open container;
➤	use a mechanical rinsing device to rinse containers (and contaminated closures and foil seals) if you can, or manually rinse three times;	X	try to rinse non-washable single-trip packaging, returnable containers not intended for rinsing or packaging which has held gassing powders;
➤	pour slowly with the container opening positioned so that air can enter (take extra care with narrow-necked containers);	X	cause glugging;
➤	replace caps on containers after rinsing (with foil seal inside) and store upright in outer carton;	X	leave empty containers upside down to drain or discard foil seals on the ground;
➤	avoid foaming by using induction and agitation systems appropriately and fixing leaks in the suction system (use an antifoam or defoamer if necessary);	X	cause foaming by sucking air into the tank or using excessive agitation;
➤	if two or more pesticides are to be mixed together, follow the correct procedure: add them to water separately (except where this is not possible for some 'twin-pack' products) and in the recommended order;	X	mix two or more concentrates before or at the same time as loading them into the tank;

➤	if pesticide products are to be applied in combination with other chemicals, follow the label instructions for all the relevant products, and use all the information provided by the supplier;	X	pre-mix a pesticide concentrate with an adjuvant, carrier, marker or any other material unless this is specifically recommended on the product label and the appropriate COSHH assessment has been carried out;
➤	measure out powder and fine granules in sheltered conditions;	X	let fine particles become airborne.
➤	make sure that the person applying the pesticide has read and understood the product label (and ideally has a copy), in situations where a different operator is mixing and loading; and	X	pre-mix spray solution in bulk to supply more than one user unless it is to be applied using equipment not needing calibration to suit individual users (such as stump treatment bottles and spot guns) and does not require constant agitation; and
➤	have a spill kit readily available at all times, know how to use it and what other action to take if there is a spillage.	X	try to hose down any spillage.

192. When mixing and loading pesticides, it is illegal (and may be unsafe) to:

- mix two or more pesticides which are anticholinesterase compounds unless such a mixture is expressly permitted by the approved conditions of use (as stated on the product label) for at least one of the pesticides; or
- use a pesticide with an adjuvant unless the adjuvant appears on the authorised list (you can get details from the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)), and the use of the pesticide with the adjuvant is in line with both the approved conditions of use for the pesticide and the authorised use of the adjuvant with that pesticide.

### Section 3.5: application methods

193. You must use pesticides in line with the conditions of the product approval as stated on the label. For off-label uses, you must also follow the conditions given on the relevant Notice of Approval (see paragraphs 49 to 51). Unless these documents place a legal requirement on you to use a specific type of application equipment, you may apply the product using methods other than those recommended as long as:

- (a) the equipment you have chosen is suitable for the intended application of pesticides;
- (b) the COSHH assessment has shown that the method of application does not involve an increased risk to health or safety;
- (c) you have assessed the environmental effects of using the pesticide by this application method and your assessment shows there is no increased risk to wildlife or the environment; and
- (d) the necessary control measures to reduce the risks as far as is reasonably practicable are in place.

194. A glossary of the most common terms used to identify application equipment and methods is at Annex D. Remember, in certain circumstances you will need a certificate of competence which is relevant to the type of application method you are going to use, unless you are working directly under the supervision of a person holding the relevant certificate (see part 1).

### **Which application methods need special precautions?**

195. You need to take special precautions when using the following application methods. These precautions will be stated on the product label (and, for off-label uses, on the relevant Notice of Approval), when these methods of application are recommended.

### **Ground-based reduced-volume spraying**

196. The following paragraphs provide guidance on reduced-volume spraying where water is used as the diluent. This guidance does not apply to application as fogs and mists (which is considered separately in paragraphs 199 to 202), use as a concentrated solution through weed wipers, or the application of a pesticide concentrate (for example, for some products approved for chemical thinning in forestry): these methods of application should only be used when recommended on the product label.

'Reduced-volume spraying' refers to spray applications where the concentrate is applied diluted with a lower volume of water than the minimum volume recommended on the label for that dose.

197. Using reduced spray volumes may result in smaller droplet sizes, which may result in an increased risk of drift. If the dose of pesticide is not reduced in the same proportion as the water volume, the more concentrated solution applied can increase the risk to people and the environment. Because of this, you should not spray pesticides using lower volumes of water than the label recommends for that dose, if the label:

- (a) prohibits reduced-volume or low-volume spraying (for example, if there is a statutory maximum in-use concentration or minimum application volume specified); or
- (b) states that PPE must be used during application when the pesticide product is applied at the minimum volume recommended on the label for that dose; or
- (c) has the hazard classification 'corrosive', 'very toxic' or 'toxic', or carries the risk phrase 'risk of serious damage to eyes'.

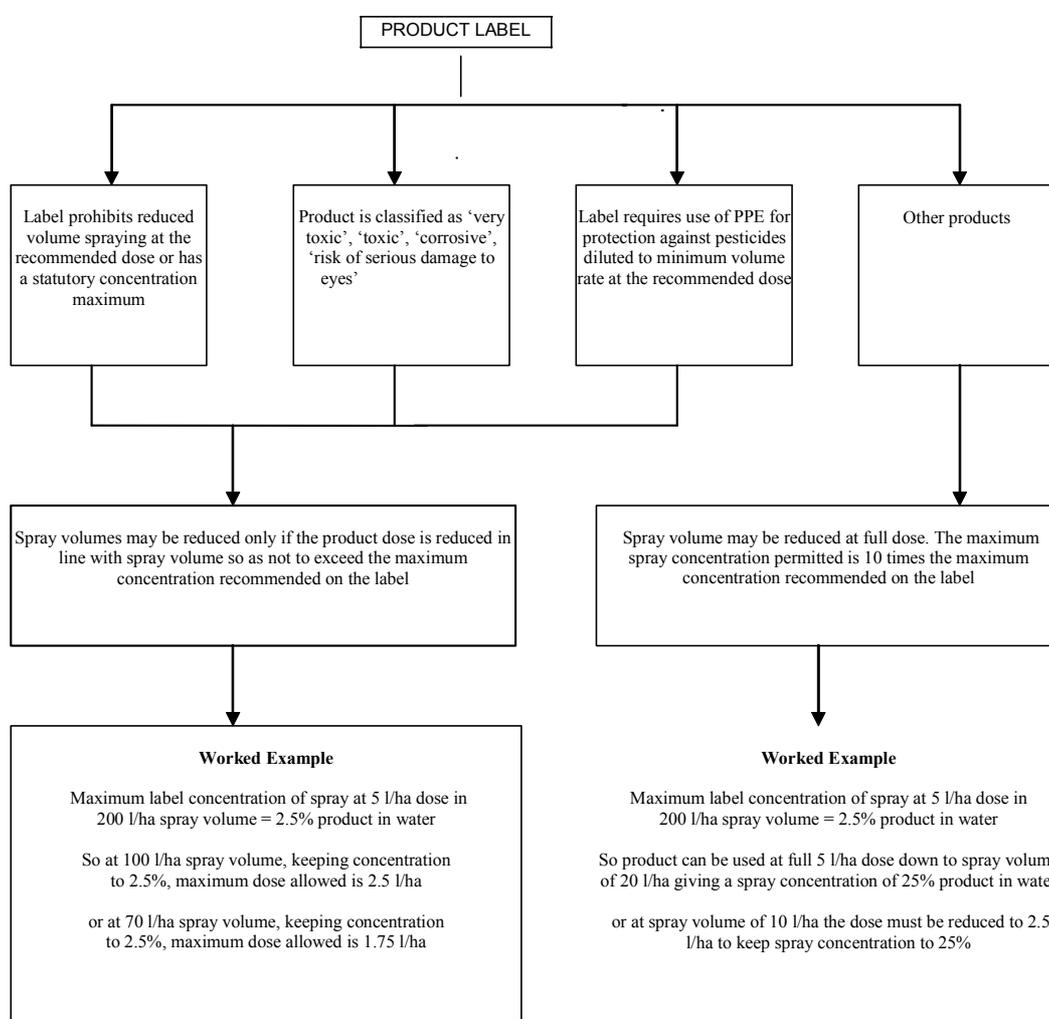
198. In all other cases you may apply a pesticide as a reduced-volume spray (with you accepting responsibility for the effectiveness of the treatment) as long as:

- (a) the concentration of the 'reduced-volume' spray is no greater than ten times the maximum concentration recommended on the label;
- (b) you meet all the conditions of the product approval, including the maximum individual dose of the product;

- (c) you fully understand how use the spraying equipment and know exactly how to control spray quality;
- (d) you use a spray quality no finer than 'fine' for ground-based vehicle-mounted or trailed sprayers and no finer than 'medium' for equipment that is pedestrian-controlled or hand-held;
- (e) you have assessed the risk to human beings (made a COSHH assessment) and the risk to other creatures, plants and the environment (based, where appropriate, on advice from a competent adviser), and made sure that the necessary controls are in place; and
- (f) operator protection is at least as good as that shown in Annex G.

**Table 1. Use this chart for products without a statutory minimum spray volume.**

Identify conditions of use and maximum concentration. Follow all statutory conditions of use.



### Fogs, mists and smokes as space treatments

199. The reduced-volume spraying advice in paragraphs 196 to 198 does not apply to these methods of application. Fogs, mists and smokes are treatments used in enclosed spaces or indoors, where possible particle drift is contained. If you want to use such techniques you must meet the

label requirements and make your own assessments of risk to human health and the environment. The COSHH assessment must consider the possible risk of breathing in the very small particles or droplets associated with these treatment methods. Fogs (like smokes) use finer particles than mists, and so stay in the air for considerably longer after application. If you are not sure whether the equipment you are planning to use is suitable for a space treatment technique, you should get advice from the supplier.

200. If you are using a space treatment technique in an area where people normally work (for example, in a glasshouse), you must make sure that all personal property has been removed from the area before treatment begins. You will also need to make sure that contaminated surfaces (such as unprotected work benches) have been adequately cleaned after the treatment. It is especially important to remember these precautions when you are using automated glasshouse misting equipment which operates overnight.
201. Make sure that nobody is in any part of the building or structure being treated when you are using hazardous chemicals in these forms, particularly smokes. Check that adequate exclusion notices are clearly displayed as necessary, especially at all entry points. Make sure that all entrances are secured throughout the treatment period.
202. Consider where any smoke, drifting particles or vapour from the treatment will end up (for example, by penetrating to another part of the building). Make sure that nobody goes into the building unnecessarily by checking that items that may be needed (for example, tools) are removed from the building before treatment. Assess the risks to humans and the environment which might arise from any escape, and make sure that the treated area is adequately ventilated before anyone goes back into it. The method of achieving adequate ventilation will need to be safe (for example, sending an unprotected worker into the building to open windows would not normally be acceptable).

### **Fumigants**

203. Fumigation is a very specialised task. The nature of fumigants and the risks associated with their use are such that no one should carry out a fumigation operation until they have received proper training. Any fumigation task has to be properly planned to prevent the spread of the fumigant beyond the area to be treated. You can find guidance on the correct use of fumigants in the HSE guidance document CS22.

### **Dust, granule, pellet and bait application**

204. When using pesticides in the form of a dust, apply them only in suitable conditions and take care to avoid breathing airborne dust or allowing your skin to become contaminated. Take similar precautions when handling and applying fine granules or granules that give rise to a dust which may be hazardous. You will need to take extra care when applying these products (where permitted) by hand or hand-held equipment. Pesticide released as a vapour by some granules

(especially in warm conditions) may also be hazardous, particularly in confined spaces. It is important to follow all label instructions carefully and make sure that you use appropriate application equipment. Clear up and safely dispose of spilt granules or baits. If it is recommended, make sure that granules are incorporated into soil or other growing medium correctly and within the time specified.

205. Broadcast slug pellets present a significant risk to wildlife and pets. You can reduce this risk by drilling pellets with seed, where this is appropriate and recommended. Wildlife and domestic animals may be put at risk during test baiting operations to check how severe a slug problem is. Only carry out test baiting in line with the conditions of product approval and make sure that all bait is adequately protected. Never leave packs of slug pellets unattended (see paragraph 57) and do not store slug pellets mixed with seed.

206. Before using these products in areas that members of the public have access to, you must assess the risks of accidental exposure and use appropriate operational controls.

207. In all situations, you should take every precaution to avoid spillages and localised overdosing.

### **Using vehicles without cabs**

208. Some types of pesticide spraying using uncabbed vehicles may result in a high level of operator exposure through skin contamination or by breathing in the spray (for example, when using tractors without cabs when making broadcast air-assisted applications in orchards or when using trailed boom sprayers with quad bikes or similar uncabbed all terrain vehicles (ATVs)). You should take care to minimise operator exposure to spray drift and you must wear appropriate PPE (possibly in addition to that specified on the product label).

209. Similarly, the application of slug pellets and granular pesticides using ATVs may result in significant levels of operator exposure, especially when the product is inherently dusty or dust is created during the application process. You must carry out an appropriate COSHH assessment to identify how to avoid or control exposure.

### **Paved areas and public footpaths**

210. Applying pesticides on hard surfaces may lead to run-off and you should take extra care to make sure that pesticides do not enter drains or watercourses. Run-off can also cause point source pollution of groundwater. In general, persistent pesticides should not be applied within 50m of a spring, well or borehole used for water supply and you should consider the use of all pesticides carefully within these areas, especially on rapidly draining surfaces. Under such circumstances, alternative methods of pest, weed or disease control should be considered.

211. Before using a vehicle to apply a pesticide on a footpath, check with the local authority that this use is acceptable. When choosing the product and application method, you should bear in mind that people and animals are likely to be using the footpath. Always drive the vehicle at an appropriate speed and be prepared to stop if necessary.

### **Using hand-held equipment**

212. When using a knapsack sprayer, you must take care to achieve the intended application rate and to prevent off-target drift. Using a suitable spray pressure control valve and nozzle hood may help.

213. When filling equipment, be careful:

- not to allow the outside of a knapsack sprayer or a backpack used with a CDA lance or spot gun to become contaminated (special care needs to be taken when filling narrow necked backpacks);
- to avoid over filling; and
- to make sure that you replace the filler cap correctly and firmly.

214. Do not pre-mix a batch of pesticide for several users unless the application equipment does not need calibration to suit individual operators (for example, equipment such as spot guns). If you are applying a pesticide which has been prepared for use by another person (for example, if one person is mixing and loading pesticide for others to apply), make sure that you have read and understood the product label.

215. You should not operate hand-held equipment while driving an ATV or other vehicle.

### **Seed treatments**

216. Some seed treatments leave a dusty deposit on the seed and a residue in the seed container and drilling equipment. Be careful to avoid breathing dust or contaminating your skin, especially when handling treated seed, calibrating seed drills and cleaning equipment after use. Dispose of seed bags, other contaminated material and surplus treated seed safely (see part 5) and take care to avoid contaminating people or the environment. If you spill any treated seed, clear it up.

### **Dipping and drenching treatments**

217. Using pesticides as a dip or a drench may result in high levels of skin contamination from splashes of the dipping or drenching solution, run-off from the freshly treated material and contact with contaminated debris when cleaning the equipment. Breathing of pesticide vapour may also be a problem when dipping and drenching, and adequate ventilation must be provided for those applying the product, handling the treated material or working in contaminated areas. Follow the operator protection requirements on the product label (see also Annex G).

218. Where possible, avoid manual dipping operations and make full use of equipment which will minimise operator exposure during the treatment process and result in minimal run-off from treated material (for example, using the Electrodyn sprayer for forestry transplants or using foam treatment equipment for onion sets). Using this equipment will also reduce the environmental problems associated with the production of surplus or contaminated pesticide solutions and run-off from freshly treated material.
219. Always dispose of spent or surplus pesticide mixtures and surplus treated material safely and legally (see part 5). Make sure that treated material is adequately labelled and not left unattended. Remember that, when carrying out your COSHH and environmental risk assessments, workers who plant treated propagating material or handle treated produce may not have any knowledge of what pesticides have been used or the precautions they should take as a result (see paragraph 72).

### **Weed control in or near water**

220. Very few pesticides are approved for use in or near water and you must consult with the Scottish Environment Protection Agency before using a pesticide in these situations. Before using a pesticide in water or in areas immediately next to watercourses, you must have had relevant additional training and, where appropriate, you must have any additional certificates of competence relating to the methods of application used in these situations (see part 1).

### **Application of pesticides from an aircraft**

221. The various statutory requirements and general obligations relating to the application of pesticides from the air are explained in Annex I.

## **Section 3.6: spray drift**

222. By law, you must confine the application of pesticides to the land, crop, structure, material or other area to be treated. Off-target spray drift is a common result of misusing pesticides and is a source of friction between pesticide users and their neighbours.
223. Spray drift can also cause much damage to wildlife. In some cases, spraying may be illegal if the proper procedures for consulting and notifying the appropriate environment or conservation agency have not taken place (see paragraph 131).
224. Remember, pesticides applied as dusts or fine granules can also drift. You must take care to apply these products in suitable weather conditions with suitable equipment, correctly adjusted for the product you are using.

## What causes spray drift?

225. A combination of factors may contribute to spray drift, including:
- (a) the wind speed at the height of the spray nozzles;
  - (b) the stability of the local atmospheric conditions;
  - (c) the wrong nozzles or pressure affecting spray quality;
  - (d) the vehicle speed;
  - (e) the boom height;
  - (f) poor equipment maintenance; and
  - (g) incorrect equipment settings.

## Weather conditions

226. The Meteorological Office gives wind speed information measured at 10 metres above the ground. When spraying a typical field crop or grassland, the wind speed at the correct boom height (an important factor affecting drift) will be roughly half the value measured at 10 metres. Where there is no crop (for example, in amenity situations when spraying hard surfaces) wind speed at boom height may be more than half of the 10 metre value. As wind speed and direction will be influenced by a variety of local factors, it is important to assess the suitability of the conditions at the area you intend to treat.
227. When you arrive at the area you intend to treat, check the wind speed and direction by looking for visible signs (see table 2, below). If you have a suitable wind speed meter (anemometer), this may provide you with a useful confirmation of the visible signs. However, you should take care to make sure that individual meter readings reflect the general situation.
228. Remember that high temperatures combined with low humidity will reduce the size of spray droplets by evaporation and increase the risk of spray drift.
229. The safest conditions in which to spray are when there is a steady Force 2 (light breeze) blowing away from any sensitive areas or neighbours' land. Points to watch out for include:
- (a) where there is little or no wind, air movement tends to be unpredictable particularly on warm sunny days; and
  - (b) fluffy cumulus clouds indicate warm turbulent air which may carry spray droplets and vapour for long distances in an unpredictable way.
230. Table 2 (below) is a guide to wind speed with spraying recommendations for standard field crop sprayers. The relationship between the wind speed at boom height and the Beaufort scale (measured at a height of 10 metres above the ground) assumes that there is a crop covering the ground. If there is no crop or grass cover, the wind speed at boom height will be higher. If you are using a different type of application equipment, make sure that you do not operate it when the wind will cause off-target drift. In general, if you have low drift spraying equipment, you should use this to improve the accuracy of your

pesticide application, not to allow you to spray in unsuitable weather conditions.

**Table 2. A guide to wind speed.**

Approximate air speed at boom height	Beaufort scale (measured at a height of 10 metres above the ground)	Description	Visible signs	Guide for the use of a standard field crop sprayer
Less than 2 kilometres/hour (less than 1.2 miles/hour)	Force 0	Calm	Smoke rises vertically	Use only 'medium' or 'coarse' spray quality
2 to 3.2 kilometres/hour (1.2 to 2 miles/hour)	Force 1	Light air	Smoke drifts (showing the wind direction)	Acceptable spraying conditions
3.2 to 6.5 kilometres/hour (2 to 4 miles/hour)	Force 2	Light breeze	Leaves rustle and you can feel the wind on your face	Ideal spraying conditions
6.5 to 9.6 kilometres/hour (4 to 6 miles/hour)	Force 3	Gentle breeze	Leaves and twigs are in constant motion	Increased risk of spray drift. Avoid spraying herbicides and take special care with other pesticides.
9.6 to 14.5 kilometres/hour (6 to 9 miles/hour)	Force 4	Moderate breeze	Small branches are moved and dust and loose paper are raised	Spraying not advised

If conditions are unsuitable or unpredictable, do not spray

### How can spray drift be prevented?

231. When using pesticides, you must take all reasonable precautions to prevent spray drift. Reasonable precautions include using the right spraying techniques and equipment, taking account of the weather conditions, taking account of neighbours' interests and protecting members of the public, wildlife and the environment. You will need to do the following.

- (a) Check the weather forecast before starting off. Do not spray if the wind direction and speed would cause the spray to drift or if there is a likelihood that air movement will carry spray droplets or vapour away from the target area, especially when spraying near sensitive areas (see paragraphs 131 to 132).
- (b) Use the coarsest appropriate spray quality at all times.
- (c) Keep the spray boom as low as possible, consistent with an even spray pattern at the correct target height. The correct boom height will depend on the spray pattern and angle of the individual nozzles, the nozzle spacing, the flatness of the area being treated and the type of boom suspension.

- (d) When using a boom sprayer, reduce the operating pressure and forward speed but maintain the dose, volume and spray quality within the recommendations on the label.
- (e) Consider not treating the boom-width (or part of the boom-width) closest to the downwind margin of the treatment area.
- (f) Use one of the various spraying systems which are available to help reduce spray drift when used according to the manufacturer's instructions. For example, using low drift nozzles and air-assistance for field crop sprayers, using shrouded boom sprayers for sports turf and other amenity spraying and using recirculating tunnel sprayers for bush and tree fruit spraying.
- (g) Use an authorised drift-reducing adjuvant in appropriate situations.

Individual manufacturers and suppliers will be able to give you information on their nozzles and spraying systems.

## **Section 3.7: after working with pesticides**

### **What needs to be done after a pesticide has been applied?**

232. The following is a brief guide on what to do when you have finished applying a pesticide.
- (a) Clean the application equipment before leaving the treatment area. If you are spraying, wash out the sprayer (using built-in tank rinsing systems if fitted) and spray out the washings on a part of the crop that has not received the maximum dose (see part 5).
  - (b) If it is not possible to spray out the tank washings, collect them in a suitable container (mark containers with their contents and store them properly for use or disposal, as appropriate).
  - (c) If possible, decontaminate the outside of the application equipment and tractor in the treatment area.
  - (d) Store the sprayer (or other application equipment) under cover.
  - (e) Return any unused pesticide concentrate to a safe store.
  - (f) Complete records as appropriate (see part 4).
  - (g) Remove warning notices when they are no longer needed.
  - (h) Let the appropriate manufacturers know (either directly or through the supplier) if you have found any product-related, packaging-related or equipment-related problems when mixing, loading or applying the product.
  - (i) If you have given warnings to beekeepers, tell them that you have completed the job.
  - (j) Make sure that you properly clean all PPE you have used before you store it.
  - (k) Washings arising from cleaning PPEs should be collected and disposed of appropriately.

## Part 4: keeping records

233. This part of the Code provides guidance on the different types of records that you need to keep and explains exactly what you need to record and why. Table 3 (at the end of this part) gives a summary of the records you need to keep and the reasons for them.

### Records of pesticide treatments

234. Keep good records of all operations involving storing and using pesticides (not just those products applied as a spray). These records are necessary, not only as a matter of good management practice, but also to provide a source of reference if people, honeybees, other creatures, land, water or non-target plants are accidentally contaminated (or if someone claims that this type of contamination has happened).

235. Accurate records will also help you comply with any required:

- harvest intervals;
- intervals between repeat applications;
- livestock withholding periods; and
- exclusion periods for workers entering treated areas.

Good records will also help with stock control, making it easier to avoid over-stocking giving you an accurate inventory of the contents of the chemical store if there is an emergency.

236. You can keep treatment records in any convenient way. However, make sure that they can be completed easily and without mistakes, and that they can be quickly consulted and understood.

237. Records can be written by hand in a book (preferably not a loose-leaf binder where pages can be lost) or entered on a computer. Annex H gives a suggested format for an adequate treatment record. If you think that an alternative format to the one shown in this Code would be better in your case, consult your adviser or pesticide supplier. You should keep treatment records for at least three years.

238. If you are a member of a crop assurance scheme or the Woodland Assurance Standard, you will need to meet specific requirements for taking and keeping treatment records.

239. If someone suggests that they may have been affected by a pesticide, it is most important to give them or their advisers full and accurate information as soon as possible. That means the full name of the product (including prefixes or suffixes) and any other information which may be needed for treating people or animals, or for a decision to be taken on whether crops will be safe to eat.

240. So that information is readily accessible, you should make sure that records are kept on the farm, holding or other area treated, and not just kept by suppliers, contractors or advisers. When you use a contractor, they must make and keep records relating to the pesticide application. The contractor must also give a copy of the treatment records relating to the crop or area treated to the owner or occupier.
241. In addition to the records you make at the time of a pesticide application, you should assess and record the effectiveness of each pesticide treatment after a suitable interval. This information is important in identifying problems relating to:
- the application technique or equipment;
  - crop damage (possibly only affecting certain varieties);
  - or the possible build up of resistance.
- You can use these records to improve application techniques and product choice. Where appropriate, you should share this information with pesticide and equipment manufacturers and PSD. You can find information on pesticide resistance and the work of the various resistance action groups on the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)

#### **COSHH assessment records.**

242. A record of a COSHH assessment should include:
- (a) the full name of the pesticide (and the relevant HSE or MAPP number);
  - (b) the possible risks to health which may result from operations involving the pesticide;
  - (c) the steps which you need to take to prevent, or adequately control, exposure in line with COSHH; and
  - (d) the other action necessary to meet the requirements of COSHH for example:
    - using and maintaining measures which control exposure;
    - exposure monitoring;
    - health surveillance; and
    - training and instructing of operators.
- You must keep COSHH assessment records readily accessible.

#### **Environmental risk assessment records.**

243. A record of an environmental risk assessment should include:
- (a) the identity of the pesticide (as for a COSHH assessment record);
  - (b) the possible risks to wildlife and the environment which may result from operations involving the pesticide;
  - (c) the steps which you need to take to prevent, or adequately control, exposure of wildlife and the environment;
  - (d) the specific details needed when you apply a pesticide in line with the LERAP schemes (see part 2, section 2.8), and any other information which may be relevant when you use pesticides in certain situations (for example, in or near water); and
  - (e) details of any nearby springs, wells or boreholes and the action you need to take to prevent groundwater contamination.

## **Exposure monitoring records.**

244. In situations where you need to monitor exposure to pesticides (see part 2, section 2.6) the monitoring records should provide adequate information on:
- (a) when you carried out the monitoring and what the results were;
  - (b) what monitoring procedures you used and how long the monitoring periods were; and
  - (c) the type and location of each sample you took, the operations in progress at the time and, in the case of personal samples, the names of the people being monitored.

## **Maintenance records of exposure control measures.**

245. Under the COSHH Regulations, employers and self-employed people must keep suitable records of examinations and tests of engineering controls and respiratory protective equipment (RPE). A suitable record of each thorough examination and test of RPE will include:
- (a) the name and address of the employer responsible for the RPE;
  - (b) details of the equipment and the distinguishing number or mark (together with a description that is adequate to identify it), and the name of the maker;
  - (c) the date of the examination and the name and signature (or unique authentication) of the person who carried it out;
  - (d) the condition of the equipment and details of any faults found including, in the case of canister or filter respirators, the condition of the canister and filter;
  - (e) details of any repairs carried out as a result of those tests;
  - (f) in the case of compressed air or oxygen apparatus, the pressure of the air or oxygen in the supply cylinder; and
  - (g) in the case of airline-fed apparatus, the volume flow and quality of the supplied air. You should note that:
    - if the air supply is from a mobile compressor, you should carry out this test immediately before the first use in any new location; and
    - in the case of half-mask respirators used occasionally against dusts or fumes of relatively low toxicity, you will just need to record the details listed above in (a), (c) and (d), as long as it is clear which item of RPE the record relates to.

## **Health surveillance records**

246. In situations where you need a formal procedure to assess the health of pesticide users (see part 2, section 2.6), you should record and keep the following details for every employee taking part.
- (a) Their full name, sex, date of birth, permanent address and post-code, National Insurance number, the date their current employment started and a record of their previous jobs involving exposure to substances requiring health surveillance.
  - (b) The results of all other health surveillance procedures, the dates when they were carried out and details of who was responsible for each surveillance programme. You should interpret these results in terms of an employee's fitness for their work and include, where

appropriate, a record of the decisions of the employment medical adviser or appointed doctor, or the conclusions of the medical practitioner, occupational health nurse or other suitably qualified or responsible person. You should not include confidential clinical information.

- (c) Where health surveillance only involves keeping an individual health record, you should record the details listed above in (a).
- (d) As well as these detailed records, you should also keep an index or list of the names of people undergoing, or who have undergone, health surveillance.

247. Employers should make sure that records are kept safe for the appropriate length of time and that they can be easily referred to. This is particularly important where there are significant changes in the business such as a change of ownership or change of business activities. In the case of health surveillance records, if a business stops trading, the employer should write and offer these records to the HSE.

**Table 3. Summary of records to be kept.**

Type of record	Time kept (years)	Reason for records	Paragraphs in this Code
Pesticide treatments and LERAPs	3	<ul style="list-style-type: none"> <li>• To show that you have used pesticides appropriately, safely and legally.</li> <li>• To help good management practice and stock control.</li> <li>• To provide other people with important information, especially in emergencies and in cases of accidental contamination of people, animals or the environment, or crop damage.</li> <li>• To help you to comply with harvest intervals and withholding or exclusion periods.</li> <li>• To meet the specific requirements of crop and woodland assurance schemes.</li> <li>• To show that you have met the statutory requirements of the LERAP schemes.</li> <li>• To allow you to assess the effectiveness of a particular pesticide use.</li> </ul>	234 to 241
COSHH assessment and environmental risk assessment	Until revised	<ul style="list-style-type: none"> <li>• To show that you have adequately and methodically assessed all risks to human health and the environment.</li> <li>• To provide evidence that you have met your legal obligations to protect human health and the environment.</li> </ul>	242 and 243
Maintenance, examination and test of operator exposure control measures	5	<ul style="list-style-type: none"> <li>• To confirm that exposure control measures are operating effectively.</li> <li>• To show that employers have met their legal obligation to maintain, examine and test engineering controls and respiratory protective equipment.</li> </ul>	245
Exposure monitoring (general workplace sampling)	5	<ul style="list-style-type: none"> <li>• To confirm that the level of occupational exposure to hazardous substances is acceptable.</li> </ul>	244
Exposure monitoring of individual, identifiable people	40	<ul style="list-style-type: none"> <li>• To show that employers have achieved and maintained adequate control of exposure to hazardous substances, as required by law.</li> </ul>	
Health surveillance	40	<ul style="list-style-type: none"> <li>• To identify any adverse health effects resulting from exposure to hazardous substances at work.</li> <li>• To show that employers have met any legal requirements to carry out health surveillance of their employees.</li> </ul>	246

## Part 5: disposal

### Note

Legislation applying to waste from premises used for agriculture (see 'The Waste from Mines, Quarries and Agricultural Premises (Scotland) Regulations' in Annex A) comes into force in 2004. These Regulations will place similar restrictions on farmers and growers to those that already apply in amenity and forestry situations. Until these Regulations apply, farmers and growers can continue to dispose of their waste in line with the guidance provided in the code of good practice for the Prevention of Environmental Pollution From Agricultural Activity and the Prevention of Environmental Pollution From Agricultural Activity Dos and Don't's Guide (see Annex B). If you cause any pollution of air, water or soil, you can be prosecuted under current legislation. However, farmers and growers should consider following the guidance presented in this Code to make sure that they dispose of waste pesticides in a responsible manner with minimal impact on the environment or human health. By following this advice now, farmers and growers will find it easier to comply with the new Regulations when they do come into force.

248. This part of the Code gives guidance on handling and disposing of pesticide waste (including concentrates, ready-to-use formulations and pesticide solutions), contaminated materials and equipment and pesticide packaging.

### How can the production of waste be minimised?

249. If you reduce your use of pesticides, you will also reduce the amount of waste pesticide and empty containers you produce. Consider the following questions.
- Do you need to use the pesticide in the first place?
  - Do you have suitable pesticides currently in stock and can you order less new stock? Have you chosen the most suitable pack sizes?
  - Can you manage and control the use of pesticides any better? Can you use any of the following methods to reduce packaging waste and minimise the production of washings?
    - Soluble packs
    - Returnable containers
    - Direct injection systems
    - Closed transfer systems
    - Low volume sprayer flushing systems
250. Will your supplier take back properly cleaned (rinsed at least three times) empty containers?
251. By reducing the amount of pesticide you use and the waste you produce, you will also save money.

## How to dispose of waste pesticide concentrates and ready-to-use formulations.

252. Whenever possible, you should use up pesticides in the approved way. When the approval of a pesticide product is to be revoked (for commercial, safety or other reasons), a 'wind-down' period is given (except when there are major safety concerns) to allow the product to be used up. The PSD website gives details of the approval status of individual products (see [www.pesticides.gov.uk/raid\\_info/prod\\_inf.htm](http://www.pesticides.gov.uk/raid_info/prod_inf.htm)) and details of the outcome of reviews which may affect a range of products. By checking this information, or using an adviser who does, you should be able to avoid having to dispose of unapproved products.
253. Similarly, by managing your chemical store properly, you should be able to avoid having to dispose of pesticides due to product deterioration (for example, frost damage) or because products are out of date with respect to shelf life.

You should be aware of the HSE advice on safe storage of pesticides given in the HSE Guidance Note AS 16 'Guidance on storing pesticides for farmers and other professional users' (see Annex G).

254. If a container (or other packaging) is damaged, but the product is still approved for use, you may be able to transfer the product carefully to the application equipment, leaving only the container to be disposed of.
255. However, you should avoid storing an unwanted pesticide, and it is illegal to do so if the approval for its storage and use has been revoked.
256. Despite good management, you may have some concentrates or ready-to-use pesticides that you need to dispose of. You must never dilute a waste concentrate in order to dispose of it as dilute pesticide waste. You should consider the following points.
- (a) Firstly, ask your supplier if they will take back any unwanted, unused pesticides that are packaged, labelled and of good quality.
  - (b) Waste concentrates are likely to be 'special waste' and may present a significant risk to the environment or to human health. Handling and disposing of this type of waste is tightly controlled and you will need to use an authorised and licensed specialist waste disposal operator.
  - (c) You must store waste concentrates in a secure place to make sure that the waste cannot escape and that the public cannot get access to it.
  - (d) You must fill in a 'special waste consignment note' if you are moving or disposing of 'special waste' and use the top copy of the consignment note to pre-notify the Scottish Environment Protection Agency of your intention to move the waste at least 72 hours prior to its movement. Consignment notes are available for a fee from the Scottish Environment Protection Agency. You and the people transporting and receiving the waste must keep copies of the consignment notes for at least three years.

- (e) When you have filled in the necessary consignment notes, you should pass the waste concentrates on to an authorised waste disposal operator.
- (f) As the producer of the waste you have a 'duty of care' to make sure that the person who takes your waste is authorised to take it and can transport it, recycle it or dispose of it safely.
- (g) You must also fill in a 'waste transfer note' and provide a written description of the waste (you can write this on the transfer note itself). Both people involved in the transfer must keep copies of the transfer note and written description for two years. If the waste is 'hazardous' and you have filled in a 'consignment note', you do not also need to fill in a 'waste transfer note'.
- (h) You can also take your own waste to a licensed treatment or disposal site, after checking whether the site will accept it.
- (i) If you need more guidance, contact the Scottish Environment Protection Agency.

257. For pesticide products which are applied undiluted and without a carrier (for example, ready-to-use formulations, granules, dusts, pellets and baits), with careful planning you should be able to complete the treatment with no, or very little, excess product left in the application equipment. The general guidance on cleaning application equipment presented in paragraph 261 applies to these formulation types, although equipment used for applying solid formulations is generally not cleaned using water.

### **How to dispose of dilute pesticide waste.**

- 258. By careful planning, you should be able to complete the pesticide treatment with no, or very little, surplus spray solution. This planning will minimise your waste disposal problems and will save you money.
- 259. When you are treating several sites one after another using the same pesticide and the same application equipment (as may frequently be the case for amenity contractors), you may be able to use surplus spray solution from one site to treat another, if you can transport the pesticide safely and legally.
- 260. You must dispose of all dilute pesticide waste (including any surplus spray solution and all sprayer washings) responsibly to protect human health, wildlife and the environment.
- 261. When you have completed the pesticide treatment, you should clean all equipment you have used. Read and follow the label requirements for using appropriate PPE when handling contaminated surfaces and follow any product-specific requirements when decontaminating application equipment (for example, to avoid damage to crops and areas which may be treated later using the same equipment). If possible, you should clean mobile application equipment at the site of the treatment (rather than using a single, dedicated site for cleaning). Take care to contain washings and spillages and avoid contaminating soil, groundwater or surface water. If fitted, you should use built-in tank rinsing systems to clean the inside of the equipment effectively while

using the minimum volume of rinse water. All equipment washing facilities should be designed to make sure that the pesticide solution cannot get into the water supply under any circumstances. In general, repeated tank washing operations, each using a small amount of water, will achieve better results than a single rinse using a larger amount of water. Repeated low volume tank rinsing will also produce a lower total volume of washings.

262. Possible options for disposing of dilute pesticide waste include the following.
- (a) Applying the contaminated water to the treated or untreated crop or area within the terms of the product approval. Make sure that you do not exceed the maximum dose.
  - (b) Storing the contaminated water in a suitable container until an authorised waste disposal operator can collect it.
  - (c) Spraying the dilute waste onto land under the terms of a Groundwater Regulations authorisation (see 'The Groundwater Regulations 1998' in Annex A) issued by the Scottish Environment Protection Agency. If you have chosen a suitable area of uncropped land (not stubble or fallow) for this purpose, it must:
    - be able to absorb the volume of liquid to be sprayed onto it without run-off or leaving puddles;
    - result in a minimal risk to wildlife and watercourses;
    - protect groundwater by not allowing the pesticide to reach the water table;
    - present a minimal risk to septic tanks, field drains or sewerage systems; and
    - where necessary, be signposted and fenced to keep out people and livestock.
  - (d) Discharging the dilute waste into a sewer under a 'trade effluent consent' issued by Scottish Water which operates the sewage treatment works the sewer is connected to. Wastes that contain substances classified as 'special category effluent' also require approval from the Scottish Environment Protection Agency before a 'trade effluent consent' can be issued by Scottish Water.
  - (e) Processing the dilute waste using suitable equipment (for example, effluent treatment plants designed to treat liquid waste containing pesticides or closed-system biobeds), as long as the treated effluent can be stored appropriately and be re-used or disposed of safely and legally.

#### **How to dispose of waste pesticide containers.**

263. Do not reuse empty pesticide containers for any purpose except:
- those specifically designed to be returned and refilled, when the container is returned and refilled in line with the label instructions; or
  - to contain an identical pesticide product transferred from a damaged container.
264. Before disposing of rigid, single-trip containers (except those referred to in paragraph 265), you should always thoroughly clean them in line with

the label instructions or, if there are no instructions, by rinsing them. You may also be able to rinse some types of flexible packaging designed for solid formulations, depending on the material and design of these packs. You should always rinse containers immediately after emptying them, once you have allowed the product to drain fully into the application equipment. When rinsing containers, always wear the personal protective equipment which is specified on the product label for use when handling the concentrate or product. If available, you should use purpose-made container-rinsing equipment in line with the manufacturer's instructions (for example, pressure rinsing devices forming part of many sprayer induction bowls). If not, you should rinse containers three times (or more until the container is visibly clean) with clean water, and add the rinsings to the spray solution. You should also rinse contaminated closures (caps and secondary seals) and any contamination on the outside of containers. If you cannot add rinsings to the spray solution (for example, when preparing ready-to-use formulations or products not applied as a spray), you should collect the contaminated rinsings in a suitable, appropriately labelled container, stored in a safe place. You should then dispose of the rinsings in line with the guidance in paragraph 262. You can get more information on cleaning containers on the CPA website at [www.cropprotection.org.uk](http://www.cropprotection.org.uk)

265. Because of the hazardous gases which they produce when they come into contact with moisture, you should not rinse or clean empty containers in which hydrogen cyanide gassing powders or aluminium, magnesium or zinc phosphides have been supplied or kept. You should dispose of these containers through an authorised waste disposal operator.
266. Replace caps firmly on containers immediately after rinsing (with the rinsed foil seal inside). Store the rinsed containers upright in a secure, weatherproof area away from stored pesticides, until you can dispose of them.
267. You can dispose of thoroughly rinsed waste pesticide containers in the following ways.
- (a) Pass them on to an authorised waste disposal operator.
  - (b) Take them to a licensed waste disposal or waste recovery site, after checking whether the site will accept rinsed containers.
  - (c) Burn them only under the following conditions.
    - In an incinerator authorised or permitted by the Scottish Environment Protection Agency.
    - In an exempt incinerator (see 'The Waste Management Licensing Regulations 1994' in Annex A). You will need to register a licensing exemption with the Scottish Environment Protection Agency to use an exempt incinerator for the disposal of any non-hazardous waste (you may not use an exempt incinerator to dispose of hazardous wastes).
    - You must pass on any residues resulting from the burning operation to an authorised waste disposal operator or take them to a licensed waste disposal or waste recovery site.

268. Containers that have been thoroughly rinsed may be accepted at licensed waste disposal (landfill) sites as long as the conditions of the site operator's licence allows this. The local office of the Scottish Environment Protection Agency can give you details of these sites.
269. Do not use empty pesticide containers or contaminated pallets for transporting food or animal feed.

#### **How to dispose of other pesticide waste materials.**

270. You should arrange to dispose of contaminated packaging and equipment, discarded protective clothing and waste resulting from dealing with spills and leaks of pesticides (see 'Emergency procedures') through an authorised waste disposal operator.
271. You should dispose of used rodenticide or other pesticide baits and carcasses in line with the guidance on the product label. If no advice is given on the label, you should arrange to dispose of this waste through an authorised waste disposal operator in line with the conditions set out in paragraph 256.
272. You should dispose of used compost and other growing media which have been treated with pesticides in line with the guidance on the product label. If no advice is given on the label, you should get guidance from your local Scottish Environment Protection Agency office. You can also get information on the disposal of treated growing media on the PSD website at [www.pesticides.gov.uk](http://www.pesticides.gov.uk)
273. You should arrange to dispose of other materials (such as treated seed, other treated plant propagating material and used crop covers which are contaminated with pesticides) through an authorised waste disposal operator in accordance with the conditions set out in paragraph 256.

#### **Where can I find further information?**

274. You can get more detailed, up-to-date information on how to dispose of waste resulting from the use of pesticides from the Scottish Environment Protection Agency (visit [www.sepa.org.uk](http://www.sepa.org.uk) or phone 01786 457700).

## Annex A: legislation

### Legislation referred to in this Code

This Code reflects the requirements of the following legislation and sets out the best practice to make sure you meet these requirements. Where the legislation listed applies only to certain parts of the United Kingdom, there is likely to be similar legislation applying elsewhere in the United Kingdom. In general, legislation relating to human health and safety is enforced by the Health and Safety Executive, and environmental legislation is enforced by the Scottish Environment Protection Agency in Scotland.

#### **The Food and Environment Protection Act 1985 (FEPA)**

Part III of FEPA aims to:

- protect the health of human beings, creatures and plants;
- safeguard the environment; and
- secure safe, effective and humane methods of controlling pests.

This Act also sets out enforcement arrangements and aims to make information about pesticides available to the public.

Part III of FEPA applies to:

- a. any pesticide; or
- b. any substance, preparation or organism prepared or used for any of the following purposes as if it were a pesticide.
  - Protecting plants, wood or other plant products from harmful organisms.
  - Regulating the growth of plants.
  - Protecting against harmful creatures.
  - Rendering such creatures harmless.
  - Controlling organisms with harmful or unwanted effects on water systems (including sewage treatment works), buildings or other structures, or on manufactured products;
  - Protecting animals against ectoparasites.

#### **The Control of Pesticides Regulations 1986 (as amended) (COPR)**

These regulations, made under FEPA, specify that:

- all pesticide products must gain approval; and
- selling, supplying, storing, advertising or using these products is only permitted in line with the Regulations.

COPR requires 'anyone who uses pesticides in the course of business or employment to have received adequate instruction and guidance in the safe, efficient and humane use of such pesticides and to be competent for the duties they are called on to perform' and 'any person who uses a pesticide shall confine the application of that pesticide to the land, crop, structure, material or other area intended to be treated'.

## **The Plant Protection Products (Scotland) Regulations 2003 (PPPR) The Plant Protection Products (Basic Conditions) Regulations**

PPPR implements the European Council Directive of 1 July 1991 in the UK, concerning the placing of plant protection products on the market (91/414/EEC). This aims to harmonise the 'approval' of plant protection products throughout the European Union. The Basic Conditions Regulations define the conditions for selling, supplying, storing, advertising and using pesticides approved under PPPR (and are essentially the same as for pesticide products approved under COPR). These regulations made under the European Council Directive apply to new active substances and to older actives once they have been reviewed in the European Union.

## **The Health and Safety At Work etc. Act 1974 (HSWA)**

This Act places general obligations on the following people.

- Employers, to protect (as far as reasonably practicable) the health, safety and welfare at work of their employees. This includes providing the necessary information, training supervision and protective equipment to carry out any job safely, and to protect employees and others.
- Employees and the self-employed, to take reasonable care of their own health and the safety of others. This includes wearing suitable protective equipment.
- Suppliers, to make sure that substances are safe and without risks to health when being used, handled, stored or transported. They must provide information about risks and ways in which the substances can be safely used and disposed of.

## **The Control of Substances Hazardous to Health Regulations 2002 (COSHH)**

Under the COSHH Regulations there is a legal duty to:

- assess the risks to health when working with substances hazardous to health (which includes many pesticides); and
- to eliminate or, where this is not reasonably practicable, adequately control exposure to these substances.

## **The Management of Health and Safety at Work Regulations 1999**

These Regulations, which implement the requirements of the European Health and Safety Framework Directive in the UK:

- set out broad general duties of employers to improve health and safety management; and
- explain what employers and employees must do under the HSWA.

## **The Personal Protective Equipment Regulations 1992**

These Regulations:

- set out the principles for selecting, providing, maintaining and using personal protective equipment (PPE); and
- require that PPE is suitable both for the individual user and for the risks it protects against.

These Regulations do not replace specific legislation dealing with providing appropriate PPE in certain situations.

## **The Nature Conservation (Scotland) Act 2004 and the Wildlife and Countryside Act 1981 (as amended)**

The Nature Conservation (Scotland) Act 2004 is the principal legislative mechanism which protects wildlife and habitats in Scotland. It replaces the Site of Special Scientific Interest (SSSI) provisions in the Wildlife and Countryside Act 1981 and amends the wildlife protection provisions in Part I of the 1981 Act. The 2004 Act introduces significantly enhanced penalties for intentional or reckless damage to SSSIs, including damage by third parties. Such damage includes acts which cause the protected features on a site to deteriorate. The Act also introduces a specific offence of possessing certain pesticides without lawful excuse. The 2004 Act should be read in conjunction with the Conservation (Natural Habitats &c.) Regulations 1994, which provide specific protection to sites and species of European importance, and Part I of the 1981 Act. Between them these instruments implement the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC).

## **The Conservation (Natural Habitats, &c.) Regulations 1994**

These Regulations implement the European Community Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) in Great Britain. The Regulations provide legal protection for European wildlife and habitats that require special protection in Great Britain. In addition to designated Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) the Regulations provide extra legal protection for certain European Protected Species such as otter, bats and wildcats. The Regulations should be read in conjunction with the Nature Conservation (Scotland) Act 2004 and Part I of the Wildlife and Countryside Act 1981.

## **The Groundwater Regulations 1998**

These Regulations, which implement the EU Groundwater Directive (Protection of Groundwater Against Pollution Caused by Certain Dangerous Substances 80/68/EEC), aim to prevent the pollution of groundwater by controlling discharges or disposal of certain substances, including all pesticides. Under these Regulations, a Groundwater Regulations authorisation is required before pesticide

waste can be applied to land apart from under the terms of the product approval.

**Although not a requirement under FEPA, this Code also provides advice on good practice for transporting, handling and disposing of pesticides to meet the requirements of the following legislation.**

<p><b>The Environmental Protection Act 1990 (as amended)</b></p>	<p>Under this Act, it is an offence to treat, keep or dispose of 'controlled waste' in a way that is likely to pollute the environment or harm human health. It is also an offence to deposit, keep, treat or dispose of 'controlled waste' without having a waste management licence, unless the activity in question benefits from a licensing exemption under the Waste Management Licensing Regulations 1994. The Act imposes a 'duty of care' on producers of waste to make sure that it is passed only to an authorised person who can transport, recycle or dispose of it safely. (Although waste from premises used for agriculture is currently excluded from the definition of 'controlled waste' under Part II of the Act, from 2004 agricultural waste will be included within the definition of 'controlled waste' and will be subject to these statutory controls.)</p>
<p><b>The Environmental Protection (Duty of Care) Regulations 1991</b></p>	<p>These Regulations describe the action which anyone who produces, imports, keeps, stores, transports, treats, recycles or disposes of 'controlled waste' must take. To comply with the 'duty of care', these people must:</p> <ul style="list-style-type: none"> <li>• store the waste safely so that it does not cause pollution or harm anyone;</li> <li>• transfer it only to someone who is authorised to take it (such as a waste management licence holder or a registered waste carrier); and</li> </ul> <p>when passing it on to someone else, provide a written description of the waste and complete a transfer note (these records must be kept for two years and a copy must be provided to the Scottish Environment Protection Agency if they ask for one).</p>
<p><b>The Environment Act 1995</b></p>	<p>This Act created Environment Agencies and introduced arrangements for:</p> <ul style="list-style-type: none"> <li>• the remediation of contaminated land;</li> <li>• protecting the aquatic environment;</li> <li>• managing air quality; and</li> <li>• the responsibility of producers for reducing packaging waste.</li> </ul> <p>Under this Act, the Environment Agencies have powers to serve notices on polluters (or potential</p>

	polluters) requiring them to carry out works to clean up or prevent pollution. Discharges to controlled waters require a consent from the Scottish Environment Protection Agency. The Scottish Environment Protection Agency may carry out anti-pollution works or operations if they believe that controlled waters have been (or are likely to be) polluted, and then seek to recover costs.
<b>The Water Framework Directive 2000</b>	Under this EC Directive, all inland and coastal waters must achieve 'good status' by 2015 and quantitative and chemical quality objectives must be met for groundwater, by creating river basin management plans within which environmental targets are set.
<b>The Water Environment and Water Services (Scotland) Act 2003</b>	The Water Environment and Water Services (Scotland) Act 2003 sets out new arrangements for the protection of the water environment and changes how new connections to the public water and sewerage infrastructure are to be funded, the Act will also give Scotland the opportunity to promote more sustainable use of our valuable natural resources. The Act requires the Executive to introduce controls on all human impacts on the water environment – including point source pollution, pollution from diffuse sources, abstractions and engineering works in the vicinity of the water environment.
<b>The Clean Air Act 1993</b>	This Act legislates against pollution by smoke, grit and dust from fires and commercial and industrial processes that are not covered by other legislation.
<b>The Carriage of Dangerous Goods by Road Regulations 1996</b>	These Regulations place requirements on operators who carry dangerous goods by road relating to vehicle design and construction, vehicle marking, transport documents, and providing information.
<b>The Carriage of Dangerous Goods and Use of Transportable Pressure Receptacles Regulations 20--</b>	These Regulations are still being drafted.
<b>The Carriage of Dangerous Goods by Road (Driver Training) Regulations 1996</b>	These Regulations set out the training requirements for drivers carrying dangerous goods.
<b>The Manual Handling Operations Regulations 1992</b>	These Regulations require that, where reasonably practicable, manual handling is avoided. When it cannot be avoided, a risk assessment must be carried out if there is a risk of injury due to the manual handling operation.
<b>The Waste Framework</b>	Under these Directives, waste must be disposed

<p><b>Directive 75/442/EEC (amended under EC Directive 91/156/EEC)</b></p>	<p>of without causing danger to humans or the environment, and waste management must include plans to reduce, re-use and recycle waste.</p>
<p><b>The Waste from Mines, Quarries and Agricultural Premises (Scotland) Regulations 20__</b></p>	<p>These Regulations implement in Scotland the remaining controls specified under the Waste Framework Directive (75/442/EEC as amended) which have not already been applied by the Landfill (Scotland) Regulations 2003 (as amended) and the Special Waste Amendment (Scotland) Regulations 2004. They ensure that the same controls apply to agricultural waste as to other waste. <b>These Regulations are still being drafted...</b></p>
<p><b>The Landfill (Scotland) Regulations 2003</b></p>	<p>These Regulations which include agricultural waste, make it an offence to landfill (including in a farm dump) or deposit waste for longer than a year without a landfill permit from the Scottish Environment Protection Agency. They fulfil the technical requirements of the Landfill Directive (1999/31/EC).</p>
<p><b>The Special Waste Regulations 1996 (as amended)</b></p>	<p>These Regulations affect people who produce, carry, receive, keep, treat (including recovery) or dispose of waste that is classified as 'special' or hazardous. They were amended during 2004 to include agricultural wastes, and to reflect the most recent Europe-wide list of hazardous wastes. Those parties who deal with special wastes have to obtain consignment notes tracking these wastes from source to recovery or disposal from the Scottish Environment Protection Agency.</p>

<p><b>The Waste Management Licensing Regulations 1994 (as amended)</b></p>	<p>Under these Regulations, people who deposit, recover or dispose of 'controlled waste', or store more than 23,000 litres of 'special waste' must have a waste management licence. The Regulations specify which activities qualify for a licensing exemption and cover the use of exempt incinerators. Unless it is carried by the producer, 'controlled waste' must be transported by a waste carrier who is registered with the Scottish Environment Protection Agency, or by an exempt carrier. Licensing exemptions have to be registered with the Scottish Environment Protection Agency.</p>
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## The official status of this Code

This document contains:

- an Approved Code made under the Health and Safety at Work etc. Act 1974;
- a Code made under the Food and Environment Protection Act 1985;
- an Approved Code made under the Groundwater Regulations 1998; and
- other guidance.

The paragraphs which are included in the Approved Code and Code have a special legal status (see below) and these sections are sidelined in the right hand margin, like this:

### **Approved Code made under the Health and Safety at Work etc. Act 1974 (HSWA)**

Certain paragraphs of this Code (see the 'Notices' section at the front of the Code) have been approved by the Health and Safety Commission with the consent of the Secretary of State. They give practical advice on how to comply with the law. If you follow the advice, you will be doing enough to comply with the law in respect of the specific matters on which these paragraphs give advice. You may use different methods to those set out in these paragraphs in order to comply with the law.

However, these paragraphs have a special legal status. If you are prosecuted for breaking health and safety law, and it is proved that you did not comply with the relevant paragraphs, you will need to show that you have complied with the law in some other way or a court will find you at fault.

### **Code made under the Food and Environment Protection Act 1985 (FEPA)**

Some paragraphs of this Code (see the 'Notices' section at the front of the Code) are made under Part III of FEPA and are intended to provide practical advice on how to meet the requirements of Part III of FEPA (and regulations made under it).

Although failing to follow these paragraphs of the Code will not, in itself, make you liable to prosecution, it may go against you if you are prosecuted for an offence under FEPA, legislation made under FEPA or any other relevant legislation.

### **Approved Code made under the Groundwater Regulations 1998 (GWR)**

Certain paragraphs of this Code (see the 'Notices' section at the front of the Code) have been approved by Scottish Ministers under the Groundwater Regulations. These paragraphs give practical advice on how to meet the requirements of the Regulations.

You may use different methods to those set out in these paragraphs in order to meet the requirements of the Regulations. However, if you are prosecuted for breaking the Regulations, and it is proved that you did not comply with the relevant paragraphs, you will need to show that you have complied with the law in some other way or a court may find you at fault.

### **Other guidance**

Other guidance contained in this Code is intended to help you meet your legal obligations by:

- explaining good practice;
- giving practical advice; and
- giving other useful information.

You do not have to follow the guidance and you are free to take other action. However, if you follow the guidance, you will normally be doing enough to comply with the law. Officials who are responsible for enforcing the law, may refer to this guidance as showing good practice.

## **Annex B: bibliography**

### **Acts of Parliament**

Clean Air Act 1993, ISBN 010541193.

Control of Pollution Act 1974, ISBN 010544074.

Environment Act 1995, ISBN 0105425958.

Environment Protection Act 1990, ISBN 0105443905.

Food and Environment Protection Act 1985, ISBN 010544885.

Health and Safety at Work etc. Act 1974, ISBN 0105437743.

Nature Conservation (Scotland) Act 2004, ISBN 0105900672

Poisons Act 1972, ISBN 0105466727.

Water Act 1989, ISBN 010545791.

Wildlife and Countryside Act 1981, ISBN 0105469815.

### **Regulations**

Carriage of Dangerous Goods by Road Regulations 1996, SI 2095, ISBN 0110629264.

Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations 1996, SI 2092, ISBN 011062923X.

Carriage of Dangerous Goods by Road (Driver Training) Regulations 1996, SI 2094, ISBN 0110629280.

Carriage of Dangerous Goods and Use of Transportable Pressure Receptacles Regulations 20—(this is still being drafted).

Control of Pesticides Regulations 1986, SI 1510, ISBN 011067510X.

Control of Pesticides (Amendment) Regulations 1997, SI 188, ISBN 0110636953.

Control of Substances Hazardous to Health Regulations 2002, SI 2677, ISBN 0110429192.

Environmental Protection (Duty of Care) Regulations 1991, SI 2389, ISBN 0110158539.

Groundwater Regulations 1998, ISBN 011079799X.

Health and Safety (First Aid) Regulations 1981, SI 917, ISBN 0110169174.

Landfill (Scotland) Regulations 2003, SSI 235, ISBN 0110622979.

Management of Health and Safety at Work Regulations 1992, SI 2051, ISBN 0110250516.

Manual Handling Operations Regulations 1992, SI 2793, ISBN 0110259203.

Personal Protective Equipment (EC Directive) Regulations 1992, SI 3139, 011025252.

Plant Protection Products (Scotland) Regulations 2003, SSI 2003 No. 579, ISBN 0110625390.

Plant Protection Products (Basic Conditions) Regulations 1997, SI 189, ISBN 0110636945.

Poisons List Order 1982 (as amended), SI 217, ISBN 0110262174.

Poisons Rules 1982, SI 218, ISBN 0110262182.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995, SI 3163, ISBN 0110537413.

Special Waste Amendment (Scotland) Regulations 2004 SSI 112, ISBN 0110690303.

Special Waste Regulations 1996, SI 972, ISBN 0110528654.

Waste from Mines, Quarries and Agricultural Premises (Scotland) Regulations 20—(this is still being drafted).

Waste Management Licensing Amendment (Scotland) Regulations 2003, SSI 171, ISBN 0110623010.

Waste Management Licensing Regulations 1994, SI 1056, ISBN 0110440560.

Workplace (Health, Safety and Welfare) Regulations 1992, SI 3004, ISBN 0110258045.

### **Codes of practice**

Code of Best Practice: Safe use of sulphuric acid as an agricultural desiccant, National Association of Agricultural Contractors (NAAC), 2002, also at [www.naac.co.uk/Codes/acidcode.asp](http://www.naac.co.uk/Codes/acidcode.asp).

Code of Good Agricultural Practice for the Protection of Air, Defra PB0618.

Code of Good Agricultural Practice for the Protection of Soil, Defra PB0617.

Code of Good Agricultural Practice for the Protection of Water, Defra PB0587.

Code of Good Practice for the Prevention of Environmental Pollution From Agricultural Activity, Scottish Office Agriculture Environment & Fisheries Department.

Code of Good Practice for the Prevention of Environmental Pollution From Agricultural Activity Dos and Don't's Guide, Scottish Executive, ISBN 0755905180

Code of Practice to Prevent the Spread of Ragwort, Defra PB9840.  
Code of Practice for Suppliers of Pesticides to Agriculture, Horticulture and Forestry (the Yellow Code), Defra PB0091.

Control of Substances Hazardous to Health 2002 Approved Code of Practice and Guidance, HSE L5, ISBN 0717625346.

Management of Health and Safety at Work Regulations 1992. Approved Code of Practice, HSE L21, ISBN 0717604128.

Safe Use of Pesticides for Non-agricultural Purposes. HSE Approved Code of Practice, HSE L9, 1995, ISBN 0717605426.

Safety Data Sheets for Substances and Preparations Dangerous for Supply, HSE L62, 1995, ISBN 071760859X.

Waste Management, the Duty of Care, a Code of Practice, Defra, 1996, ISBN 011753210X.

### **Other Government publications**

#### **Civil Aviation Authority (CAA)**

Information on Requirements to be met by Applicants and Holders of the Aerial Application Certificate, CAA CAP 414.

#### **Health and Safety Executive (HSE)**

Agricultural Pesticides, AS27, also at [www.hse.gov.uk](http://www.hse.gov.uk).

A Guide to RIDDOR 1995, L73, ISBN 0717624315.

Approved Carriage List, L90, updated regularly, ISBN 0717616851.

Approved Supply List, L129, updated regularly, ISBN 0717623688.

Arboriculture and Forestry Advisory Group (AFAG) leaflets:  
Application of pesticides by hand-held equipment, AFAG 202;  
Planting, AFAG 103; and  
Pre-planting spraying of container-grown seedlings, AFAG 102.

A Step by Step Guide to COSHH Assessment, HSG97, 1999, ISBN 0717614468.

COSHH Essentials, ISBN 0717624218, also at [www.coshh-essentials.org.uk](http://www.coshh-essentials.org.uk).

COSHH in Agriculture, AS 28, also at [www.hse.gov.uk](http://www.hse.gov.uk).

COSHH in Forestry, 1991, also at [www.hse.gov.uk](http://www.hse.gov.uk).

Fumigation Guidance Note, CS 22, 1996, ISBN 071761218X.

Guidance on Storing Pesticides for Farmers and Other Professional Users, Agricultural Information Sheet No.16, 1997.

Health Surveillance at Work, HSG61, 1999, ISBN 071761705X

Manual Handling Operations Regulations 1992, Guidance on Regulations, L23, ISBN 0717624153.

Medical Aspects of Work Related Exposures to Organophosphates MS17, 2000 (third edition), ISBN 0717617750.

Monitoring Strategies for Toxic Substances, HSG173, 1997, ISBN 0717614115.

Occupational Exposure Limits, EH 40, updated periodically.

Personal Protective Equipment at Work. Guidance on Regulations, L25, 1992, ISBN 0717604152.

Respiratory Protective Equipment: Legislative Requirements and Lists of HSE Approved Standards and Type Approved Equipment, 1995 (fourth edition), ISBN 0717610365.

Safe use of rodenticides on farms and holdings, AIS 31, 1999, also at [www.hse.gov.uk/pubns/misc515.pdf](http://www.hse.gov.uk/pubns/misc515.pdf).

Successful Health and Safety Management, HSG 65, ISBN 0717612767.

The Carriage of Dangerous Goods Explained, Part 1. Guidance for Consignors of Dangerous Goods by Road and Rail. Classification Packaging and Provision of Information, HSG160, ISBN 0717612554.  
Plus: Supplement to The Carriage of Dangerous Goods Explained, Part 1, SUPP05, 1999, ISBN 0717612554.

The Carriage of Dangerous Goods Explained, Part 2: Guidance for Road Vehicle Operators and Others Involved in the Carriage of Dangerous Goods by Road HSG161, ISBN 0717612538.  
Plus: Supplement to The Carriage of Dangerous Goods Explained Part 2, SUPP06, 1999, ISBN 0717612538.

The Idiot's Guide to CHIP INDG 350, 2002, ISBN 0717623335.

The Selection, Use and Maintenance of Respiratory Protective Equipment, HSG53, ISBN 0717615375.

The Storage of Flammable Liquid in Containers, HSG 51, 1998, ISBN 0717614719.

## **Scottish Executive**

Environmental Management for Agriculture, a software package - for further information visit [www.herts.ac.uk/aeru/emahome.htm](http://www.herts.ac.uk/aeru/emahome.htm)

Is your sprayer fit for work?, ISBN 0 7559 0660 8

Keeping Pesticides Out of Water, ISBN 0 7559 0659 4

Local Environment Risk Assessment For Pesticides (LERAP) Horizontal Boom Sprayers, ISBN 0 7559 0383 8

Scottish Biodiversity Strategy ISBN 0 7559 4120 9

## **Department for Environment, Food and Rural Affairs (Defra) and the Pesticides Safety Directorate (PSD)**

Guidelines for the Use of Herbicides on Weeds In or Near Watercourses and Lakes, Defra, PB 2289.

Local Environmental Risk Assessment for Pesticides: Broadcast Air-assisted Sprayers, Defra, also at [www.pesticides.gov.uk/farmers/leraps.htm](http://www.pesticides.gov.uk/farmers/leraps.htm).

Pesticides and Integrated Farming, Defra, PB 2489.

Pesticides Monitor, PSD, published each month, ISSN 0955-7458.

Pesticide use – the environmental issues, Defra (Pesticides Forum), PB 8653.

## **Environment Agency (EA)**

Best Farming Practices: Profiting from a Good Environment, EA.

Use of herbicides in or near water, EA.

## **Forestry Commission**

Bevan, D. (1987). Forest insects. Forestry Commission Handbook 1. The Stationery Office, London.

Davies, R.J. (1987). Trees and weeds. Forestry Commission Handbook 2. The Stationery Office, London.

Dewar, J.A. (1993). Oil and chemical spillages. Forestry Authority Technical Development Branch Report 7/93. Forestry Commission Technical Development Branch, Ae Village, Dumfries.

Heritage, S. (1996). Protecting plants from damage by the large pine weevil and black pine beetle. Forestry Commission Research Information Note 268. Forestry Commission, Edinburgh.

Heritage, S. (1997). Protecting plants from weevil damage by dipping or spraying before planting using aqueous insecticides. Forestry Commission Research Information Note 270. Forestry Commission, Edinburgh.

Heritage, S. and Johnson, D. (1997). The use of post-planting sprays to improve the protection of plants from damage by *Hylobius abietis*. Forestry Commission Research Information Note 272. Forestry Commission, Edinburgh.

Pepper, H.W. (1996). Grey squirrel damage control with warfarin. Research Information Note 180. Forestry Commission, Edinburgh.

Pratt, J.E. (1996). *Fomes* stump treatment – an update. Forestry Commission Research Information Note 287. Forestry Commission, Edinburgh.

Willoughby, I. and Dewar, J. (1995). The use of herbicides in the forest. Forestry Commission Field Book 8. The Stationery Office, London.

Willoughby, I. and Clay, D. (1996). Herbicides for farm woodlands and short rotation coppice. Forestry Commission Field Book 14. The Stationery Office, London.

Willoughby, I. and Clay, D. (1999). Herbicide update. Forestry Commission Technical Paper 28. Forestry Commission, Edinburgh.

Forest and Water Guidelines fourth edition. Forestry Commission Edinburgh.

Reducing pesticide use in forestry, Forestry Commission.

UKWAS (2000). The UK Woodland Assurance Scheme Guide to Certification. Forestry Commission, Edinburgh.

### **Other useful publications**

#### **British Crop Protection Council (BCPC)**

Boom and Fruit Sprayer's Handbook, BCPC, 2001, ISBN 1901396029.

Fertiliser and Granular Pesticide Handbook – a practical guide to safe, effective application, BCPC, (not yet available).

Hand-Held and Amenity Sprayer's Handbook, BCPC, 2001, ISBN 1901396037.

Safety Equipment Handbook, BCPC, 2002, ISBN 1901396061.

The UK Pesticide Guide, BCPC (published annually), 2004, ISBN 0851997376.

Using Pesticides – a Complete Guide to Safe, Effective Spraying, BCPC, 1998, ISBN 1901396010.

## **Crop Protection Association (CPA)**

Best Practice Guides (emergency procedures, avoiding drift, pesticide storage, pesticides and conservation, hand protection, protective equipment, sprayer cleaning, container cleaning, container incineration, agrochemical disposal, record keeping, pesticide legislation), CPA, also at [www.cropprotection.org.uk/content/resources/5\\_pub\\_farmers.asp](http://www.cropprotection.org.uk/content/resources/5_pub_farmers.asp).

Every drop counts: keeping water clean, CPA, also at [www.cropprotection.org.uk/content/resources/5\\_pub\\_farmers.asp](http://www.cropprotection.org.uk/content/resources/5_pub_farmers.asp).

## **National Farmers Union (NFU)**

Farm Transport of Dangerous Goods, NFU.

## Annex C: glossary

These definitions are for guidance only. They are not legally binding, unless it specifically states that the definition is that set out in the legislation.

<b>Active ingredient</b>	the part of a pesticide product which gives it its pesticidal properties (the term 'active substance' is often used to mean the same thing).
<b>Active substance</b>	any substance or micro-organism (including a virus), that has a general or specific action against harmful organisms or on plants, parts of plants or plant products (the term 'active ingredient' is often used to mean the same thing).
<b>Adjuvant</b>	a substance (other than water) without significant pesticidal properties, which, when added to a pesticide before application, improves or is intended to improve the effectiveness of the pesticide.
<b>Aerial application</b>	applying a pesticide from an aircraft in flight.
<b>Agricultural vehicle</b>	any agricultural or forestry tractor or agricultural machinery.
<b>Agricultural or forestry tractor</b>	any motor vehicle and its trailer which is constructed or adapted for use off-road for the purpose of agriculture and which is primarily used for that purpose (not a dual purpose vehicle).
<b>Agricultural machinery</b>	any mobile machinery which is constructed or adapted for use off-road for the purpose of agriculture and which is primarily used for that purpose.
<b>Approval</b>	all pesticide products must be approved before they can be advertised, stored, sold, supplied or used. An approval (normally applied for by a company wanting to market a pesticide) will only be given when all the required evidence and information on the safety, effectiveness, and (where relevant) the humaneness of the pesticide have been submitted, evaluated and considered acceptable. You can find full details of the approvals process on the PSD website ( <a href="http://www.pesticides.gov.uk">www.pesticides.gov.uk</a> ).
<b>Beneficial occupier</b>	the person who is responsible for the day-to-day management of the land.
<b>Biodiversity</b>	The variety of life around us – life of all kinds from the largest animal to the smallest plant
<b>Biological monitoring</b>	the measurement and assessment of levels of chemicals or their metabolites (substances the body converts the chemical into) in the breath, urine or blood (or any combination of these) of exposed workers. This monitoring may investigate either the level of systemic exposure to an active substance or look for chemical signs of a reaction to exposure.
<b>Bystander</b>	any person who is present in (or near) the area where a pesticide is being (or has been) applied who is not directly involved in using the pesticide.
<b>Commercial service</b>	the use of a pesticide by a person: <ul style="list-style-type: none"><li>• on crops, land, produce, materials, buildings or the contents of buildings not in the beneficial ownership or occupation of that person or that persons' employer; or</li><li>• on seed other than seed intended solely for use by that person or that persons' employer.</li></ul>

<b>Consent</b>	the detailed rules under Part III of FEPA are set out in what are known as ‘consents’ to be found in the schedules to COP(A)R and BCR (see Annex A). these consents are issued by Ministers and permit pesticides to be advertised, sold, stored, supplied and used, subject to certain conditions. These conditions set out general obligations for all pesticide users. (The term ‘consent’ is also used to describe the regulatory regime in place under the Control of Pollution Act 1974. It is the main legislative vehicle for point source pollution control and provides a system whereby discharges of pollutants are subject to consent by SEPA,)
<b>Dosimetry or exposure monitoring</b>	the use of personal sampling equipment (and sometimes static samplers) to measure the levels of exposure to a substance (through skin contact or breathing it in) for operators when carrying out their normal work tasks. If the substance being used has been assigned a MEL or OES, the periodic or continuous sampling of the workplace atmosphere (usually in the operator’s breathing zone) will establish whether the necessary standards are being achieved.
<b>Drift</b>	the movement of a pesticide (which may be applied as a spray, a fine granule or in another form) outside the target area due to air currents.
<b>Fumigation</b>	an operation in which the pesticide acts as a gas (although it may not be applied in the form of a gas) to control or kill pests or other undesirable organisms.
<b>Groundwater</b>	all water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
<b>Integrated control</b>	defined in PPPR as ‘the rational application of a combination of biological, biotechnological, chemical, cultural or plant-breeding measures whereby the use of chemical plant protection products is limited to the minimum strictly necessary to maintain harmful organisms below levels above which economically unacceptable damage or loss would occur’.
<b>Maximum exposure limit (MEL)</b>	the maximum concentration of an airborne substance, averaged over a reference period, which people at work can be exposed to, under any circumstances. The MEL (for each substance which has been assigned one) is given, together with the appropriate reference periods, in Schedule 1 of the COSHH Regulations.
<b>Occupational exposure standard (OES)</b>	the concentration of an airborne substance, averaged over a reference period, at which, according to current knowledge, there is no evidence that it is likely to harm a person at work repeatedly breathing that concentration.
<b>Operator</b>	any person directly involved in using a pesticide (for example, handling, mixing, loading or applying a pesticide, calibrating or cleaning equipment, or handling freshly treated material).
<b>Pesticide</b>	any substance, preparation or organism that is prepared or used for destroying any pest.
<b>Pest</b>	any organism that is harmful to plants, wood or other plant products, any unwanted plant, or any harmful creature.

<b>Plant protection product</b>	<p>an active substance or preparation that contains one or more active substances (in the form in which it is supplied to the user) which is intended to:</p> <ul style="list-style-type: none"> <li>(a) protect plants or plant products against all harmful organisms or prevent the action of those organisms;</li> <li>(b) influence the life processes of plants other than as a nutrient (for example, as a growth regulator);</li> <li>(c) preserve plant products (except for substances or products which are controlled under European Union law on preservatives);</li> <li>(d) destroy unwanted plants; or</li> <li>(e) destroy parts of plants or control or prevent the undesired growth of plants.</li> </ul>
<b>Pesticide approved for agricultural use</b>	<p>a pesticide (other than one with methyl bromide or chloropicrin as one of its active ingredients) approved for use:</p> <ul style="list-style-type: none"> <li>• in agriculture and horticulture (including amenity horticulture);</li> <li>• in forestry;</li> <li>• in or near water (other than amateur, public hygiene or anti-fouling uses); or</li> <li>• as an industrial herbicide (such as weedkillers for use on land that is not intended for the production of any crop).</li> </ul>
<b>Reduced volume spraying</b>	<p>application of a pesticide in a lower volume of water than the minimum volume recommended on the label for that dose.</p>
<b>Special Waste</b>	<p>special waste is any waste which is defined as hazardous by the Hazardous Waste Directive (91/689/EEC)</p>
<b>Spray quality</b>	<p>a classification reflecting the particle size distribution in a spray.</p>
<b>Substance hazardous to health</b>	<p>any substance (including any preparation) which is:</p> <ul style="list-style-type: none"> <li>(a) a substance listed in Part I of the Approved Supply List as dangerous for supply within the meaning of the Chemical (Hazard Information and Packaging) Regulations 1993, and which is classified as very toxic, toxic, harmful, corrosive or irritant;</li> <li>(b) a substance for which a maximum exposure limit is specified in Schedule 1 of the COSHH Regulations or for which the Health and Safety Commission has approved an occupational exposure standard;</li> <li>(c) a biological agent;</li> <li>(d) a dust of any kind when present at a substantial concentration in the air;</li> <li>(e) a substance not mentioned in (a) to (d) above, but which creates a similar hazard to the health of any person.</li> </ul> <p>A substance should be regarded as hazardous to health if it is hazardous in the form in which it is used in the work activity.</p>
<b>Tank mix</b>	<p>a spray solution, prepared by the user, containing a mixture of two or more pesticide products.</p>
<b>Tremcard</b>	<p>a transport emergency card containing essential information for the driver and the emergency services, which must be prominently displayed in the cab of a vehicle carrying dangerous goods on the road.</p>
<b>User</b>	<p>anyone (employers, employees and self-employed people) carrying out the application of pesticides or an activity directly related to that work (such as mixing a pesticide or loading a sprayer for another user).</p>

<b>Water</b>	surface water and groundwater.
<b>Water volume (application volume)</b>	the volume of a spray liquid (including all pesticides, diluents, adjuvants, carriers and other components of the spray solution) applied <i>per</i> unit area (normally expressed as litres <i>per</i> hectare).
<b>Worker (re-entry worker)</b>	a person entering a treated crop or area, or handling treated material after a pesticide application has taken place (people handling freshly treated material as part of an application operation are normally considered to be operators rather than workers).

## Annex D: equipment terminology

The following terms are based on the SSTS Schedule of Certificates of Competence. This may help pesticide users identify the appropriate operator's certificate of competence for the equipment/method that they intend to use. You should contact the SSTS if you require further guidance. These descriptions of pesticide application equipment are for guidance purposes only and should not be viewed as legally binding definitions.

<b>Aerial application</b>	Applying pesticides from an aircraft (either fixed-wing or helicopter) that is flying.
<b>Air assistance</b>	Using forced air to carry spray droplets to their intended target.
<b>Application of pesticides as a continuous or batch process (using conveyors, roller-tables and similar equipment)</b>	Applying pesticides using equipment which is mounted on, attached to, or forms a permanent part of a treatment system.
<b>Broadcast air-assisted sprayer</b>	Any equipment which broadcasts spray droplets, by means of an uncontained air stream produced by forced air, which carry outwards and upwards from the source of the spray.
<b>Dipping</b>	Immersing material to be treated (completely or partly) into a pesticide solution.
<b>Downward placement air assistance</b>	The use of an enclosed forced air-generated air stream to assist in penetrating the crop canopy.
<b>Electrostatically charged</b>	Material to which an electrostatic charge has been intentionally added.
<b>Fieldsman or ground marker</b>	A person on the ground assisting the pilot of an aircraft applying pesticides while it is flying.
<b>Granule applicator</b>	Any full-width broadcast or placement equipment which applies pesticides in granule or powder form.
<b>Ground crop sprayer</b>	Any equipment of the spray boom type which applies pesticides using a boom operating in a horizontal plane.
<b>Hand-held applicator</b>	Any equipment carried by a person or where the pesticide delivery nozzle or outlet is supported directly by the operator.
<b>Hydraulic nozzle</b>	A device in which pressurised liquid is the primary source of energy used to produce a spray.
<b>Mists and fogs</b>	Mists and fogs (including smokes) are clouds containing particles that have a size range less than 100 micrometres volume median diameter.
<b>Mixer or loader</b>	A person who is involved in mixing or loading of pesticides into the tank or hopper of any pesticide application equipment.
<b>Mounted equipment</b>	Any pesticide application equipment which is mounted on, attached to or which forms a permanent part of the prime mover.
<b>Pedestrian-controlled equipment</b>	Any equipment which is supported by a mechanical carriage controlled by a person who cannot ride in or on the equipment carriage.
<b>Prime mover</b>	Any self-propelled vehicle operated by a person who rides in or on the vehicle.
<b>Rotary atomiser</b>	A device in which a rotating solid surface (for example a cup, disc, wheel or cage) is the primary source of energy used to produce a spray.
<b>Seed-treating equipment</b>	Any equipment (either mobile or static) which applies pesticides on cereal grains, pulses and other small seeds.
<b>Spray train</b>	Any vehicle running on rails that has equipment for applying pesticides to the track, trackside or adjacent areas mounted or attached to the vehicle or forming a permanent part of the vehicle.

<b>Sprayer</b>	Any equipment used to apply sprays that have droplets within a maximum and minimum size range described by the British Crop Protection Council nozzle classification scheme categories 'coarse', 'medium', 'fine' and 'very fine'.
<b>Sub-surface liquid applicator</b>	Any equipment (except pedestrian-controlled equipment) which is designed to apply liquid pesticides below the surface of the ground.
<b>Trailed equipment</b>	Any pesticide application equipment which is trailed behind the prime mover.
<b>Twin-fluid nozzle</b>	A device in which the movement of gas or vapour is the primary source of energy used to produce a spray.
<b>Variable geometry sprayer</b>	Any equipment which applies pesticides using a boom which can be positioned between a horizontal and vertical plane and set to suit the spray target.
<b>Vehicle-mounted kerb sprayer</b>	Any equipment which is mounted on, fixed to, or forms part of any vehicle for applying pesticides on roadside kerbs.
<b>Wick applicator or weed wiper</b>	Any equipment which applies pesticides using a wick or similar device.

## Annex E: addresses

<p><b>ADAS Environmental</b> Gleadthorpe Grange Meden Vale Mansfield Nottinghamshire NG20 9PD Phone: 01623 846742</p>	<p><b>British Crop Protection Council (BCPC)</b> 49 Downing Street Farnham Surrey GU9 7PH Phone: 01252 733072 Website: <a href="http://www.bcpc.org.uk">www.bcpc.org.uk</a></p>
<p><b>Agricultural Engineers' Association (AEA)</b> Samuelson House Paxton Road Orton Centre Peterborough Cambridgeshire PE2 0LT Phone: 01733 371381 Website: <a href="http://www.aea-online.org.uk">www.aea-online.org.uk</a></p>	<p><b>British Pest Control Association (BPCA)</b> 1 Gleneagles House Vernon Gate South Street Derby Derbyshire DE1 1UP Phone: 01332 294288 Website: <a href="http://www.bpca.org.uk">www.bpca.org.uk</a></p>
<p><b>Agricultural Industries Confederation (AIC)</b> Confederation House East of England Showground Peterborough Cambridgeshire PE2 6XA Phone: 01733 385230 Website: <a href="http://www.agindustries.org.uk">www.agindustries.org.uk</a></p>	<p><b>Crop Protection Association Limited</b> 4 Lincoln Court Lincoln Road Peterborough Cambridgeshire PE1 2RP Phone: 01733 349225 Website: <a href="http://www.cropprotection.org.uk">www.cropprotection.org.uk</a></p>
<p><b>Association of Independent Crop Consultants</b> Agriculture House Station Road Liss Hampshire GU33 7AR Phone: 023 80895354</p>	<p><b>Department for Environment, Food and Rural Affairs (Defra)</b> Nobel House 17 Smith Square London SW1P 3JR Phone: 020 72386000 Website: <a href="http://www.defra.gov.uk">www.defra.gov.uk</a></p>
<p><b>BASIS (Registration) Limited</b> Bank Chambers 34 St John Street Ashbourne Derbyshire DE6 1GH Phone: 01335 343945 Website: <a href="http://www.basis-reg.co.uk">www.basis-reg.co.uk</a></p>	<p><b>Farming and Wildlife Advisory Group (FWAG) Scotland</b> Algo Business Centre Glenearn Road Perth PH2 0NJ Phone: 01738 450450 Website: <a href="http://www.fwag.org.uk/scotland">www.fwag.org.uk/scotland</a></p>
<p><b>British Beekeepers' Association</b> National Agricultural Centre Stoneleigh Kenilworth Warwickshire CV8 2LG Phone: 024 76696679 Website: <a href="http://www.bbka.org.uk">www.bbka.org.uk</a></p>	<p><b>Forestry Commission</b> 231 Corstorphine Road Edinburgh EH12 7AT Phone: 0131 3340303 Website: <a href="http://www.forestry.gov.uk">www.forestry.gov.uk</a></p>

<p><b>The Game Conservancy Trust</b>  Burgate Manor  Fordingbridge  Hampshire SP6 1EF  Phone: 01425 652381  Website: <a href="http://www.game-conservancy.org.uk">www.game-conservancy.org.uk</a></p>	<p><b>NPTC (formerly National Proficiency Tests Council)</b>  National Agricultural Centre  Stoneleigh  Kenilworth  Warwickshire CV8 2LG  Phone: 024 76696553  Website: <a href="http://www.nptc.org.uk">www.nptc.org.uk</a></p>
<p><b>Health and Safety Executive (HSE)</b>  Information Services  Room 318, Daniel House  Stanley Precinct  Bootle  Merseyside L20 3TW  Phone: 0151 9513191  Website: <a href="http://www.hse.gov.uk">www.hse.gov.uk</a></p>	<p><b>National Register of Sprayer Operators (NROSO)</b>  NPTC  National Agricultural Centre  Stoneleigh  Warwickshire CV8 2LG  Phone: 024 76857300  Website: <a href="http://www.nroso.org.uk">www.nroso.org.uk</a></p>
<p><b>Lantra National Training Organisation Ltd</b>  Newlands  Scone  Perth PH2 6NL  Tel: 01738 553311  Web: <a href="http://www.lantra.co.uk/scotland">www.lantra.co.uk/scotland</a></p>	<p><b>Pesticides Safety Directorate (PSD)</b>  Information Services Branch  Mallard House  Kings Pool  3 Peasholme Green  York YO1 2PX  Phone: 01904 455775  Website: <a href="http://www.pesticides.gov.uk">www.pesticides.gov.uk</a></p>
<p><b>Linking Environment and Farming (LEAF)</b>  National Agricultural Centre  Stoneleigh  Kenilworth  Warwickshire CV8 2L2  Phone: 024 76413911</p>	<p><b>Scottish Beekeepers Association</b>  Website: <a href="http://www.scottishbeekeepers.org.uk">www.scottishbeekeepers.org.uk</a></p>
<p><b>National Association of Agricultural Contractors (NAAC)</b>  Samuelson House  Paxton Road  Orton Centre  Peterborough  Cambridgeshire PE2 5LT  Phone: 01733 362920  Website: <a href="http://www.naac.co.uk">www.naac.co.uk</a></p>	<p><b>Scottish Biodiversity Forum</b>  c/o Scottish Executive  Area 1J Victoria Quay  Leith  Edinburgh EH6 6QQ  Phone: 0131 244 6328  Website:  <a href="http://www.scotland.gov.uk/biodiversity">www.scotland.gov.uk/biodiversity</a></p>
<p><b>National Farmers' Union Scotland</b>  Head Office  Rural Centre  West Mains  Ingliston  Midlothian  Tel: 0131 472 4000  Web: <a href="http://www.nfus.org.uk">www.nfus.org.uk</a></p>	<p><b>Scottish Environment Protection Agency</b>  Erskine Court  Castle Business Park  Stirling FK9 4TR  Phone: 01786 457700  24-hour emergency tel: 0800 807060  Website: <a href="http://www.sepa.org.uk">www.sepa.org.uk</a></p>

<p><b>Scottish Executive Environment and Rural Affairs Department (SEERAD)</b>  Contact SEERAD local area office</p> <p>Phone: see local telephone directory  Website: <a href="http://www.scotland.gov.uk">www.scotland.gov.uk</a></p>	<p><b>Scottish Skills Testing Service</b>  Ingliston  Edinburgh EH28 8NE  Phone: 0131 333 2040  Website: <a href="http://www.ssts.co.uk">www.ssts.co.uk</a></p>
<p><b>Scottish Natural Heritage (SNH)</b>  12 Hope Terrace  Edinburgh EH9 2AS  Phone: 0131 447 4784  Website: <a href="http://www.snh.org.uk">www.snh.org.uk</a></p>	<p><b>Stationery Office</b>  TSO Scotland Bookshop  71 Lothian Road  Edinburgh EH3 9AZ  Phone enquiries: 0870 606 5566  Website: <a href="http://www.tso.co.uk">www.tso.co.uk</a></p>
<p><b>Scottish Water</b>  PO BOX 8855  Edinburgh EH10 6YQ  Tel:  Business Customer Helpline: 0845 602 8855  Emergency Helpline: 0845 600 8855  Web : <a href="http://www.scottishwater.co.uk">www.scottishwater.co.uk</a></p>	

## Annex F: storage of pesticides by users

### HSE INFORMATION SHEET NO 16

# Guidance on storing pesticides for farmers and other professional users

#### Introduction

This information sheet provides guidance for professional users of pesticides on suitable standards for storage. By following it, professional users will help to ensure that they meet their duties under relevant legislation. It contains advice on:

- fixed stores, including purpose-built stores, converted existing buildings or parts of existing buildings and small scale storage in cabinets, chests etc;
- mobile stores providing short-term storage away from the home base in vehicles, on bowsers and sprayers etc;
- storing small amounts of particular pesticides whose hazardous chemical properties require additional precautions to be taken.

It does not cover storing methyl bromide, storing pesticides by suppliers (which includes contractors who supply pesticides), nor transporting pesticides from suppliers to the end user. If you carry out any of these activities you should consult the MAFF Code of Practice for suppliers of pesticides to agriculture, horticulture and forestry (the Yellow Code).

If you store flammable pesticides such as anti-fouling products, refer to HSE's guidance booklet *The storage of flammable liquids in containers*.

For the purposes of this information sheet 'professional user' means anyone who uses pesticides as part of their business or undertaking, whether as an employer or self-employed person.

#### Fixed storage

#### What are your storage needs

##### Size

- The store needs to be large enough to hold your peak pesticide requirements, any part-used containers, and able to cope with stock being held over due to poor weather;
- Estimate the likely total of stocks to be held at any one time - include pesticides such as slug pellets, rodenticides and wood treatment products

- Check if you need to make additional provision for storing any of the special classes of pesticides listed at the end of this sheet.
- Consider the need to store other potentially harmful chemicals and allow for likely amounts.
- Provide adequate storage for rinsed empty containers awaiting disposal.
- Check what other facilities you may need to provide (eg storage for contaminated equipment, personal protective equipment, washing facilities etc) by reading the code of practice relevant to your pesticide work (see references).
- Remember that if the store is too small it leaves staff working in cramped conditions, often having to move one product to get to another.

#### Location

Before creating new storage check with:

- your local authority planning department - you may need planning permission for your store;
- the Environment Agency (EA) or in Scotland the Scottish Environmental Protection Agency (SEPA). You may be in an 'environmentally sensitive area' such as a groundwater protection zone or upstream of water supply catchment areas.

Site your store away from areas that present a risk of fire and at least four metres away from:

- hay, straw, diesel, oils, paints, fertilisers, paper, wood stacks, gas containers and other combustible materials,
- domestic dwellings or sources of ignition such as grain driers or welding/grinders activities.

Check where any contaminated fire-fighting water will drain and:

- do not site stores near to drains, watercourses, wells and boreholes or areas liable to flooding.

Help protect against harm to humans, animal health and the environment.

Make sure that:

- cabinet stores are not located in domestic dwellings, retail areas, staffrooms, offices or areas where human or animal food is stored or processed;
- access to a pesticide store within a larger building is not through such areas;
- all staff know what to do in the event of a chemical spillage or fire;
- there is ready access for pesticide deliveries or the emergency services.

If an incident occurs, contain and absorb any spillage with inert absorbent materials or sand. Dispose of contaminated material or liquids safely after having sought advice from the EA or SEPA.

### **Construction**

Your aim is to provide a store that is resistant to fire, capable of retaining leakage/spillage (eg if containers were to melt in a fire), dry, frost-free and secure against unauthorised access. If you do not achieve this, people and the environment could be harmed. Take the following factors into account:

General principles applying to all stores:

- The store, including any doors but not the roof, should be made of materials which will resist fire for 30 minutes or longer.
- The store, or the area in which the store is located, should be able to retain leakage or spillage to a volume of 110% of the total quantity of products likely to be stored (185% if you are in an 'environmentally sensitive area'). Bunding is the most usual way of achieving this.
- The bund should be soundly constructed of non fragile materials resistant to permeation by liquids, eg metal (not foil), concrete, bricks, stone slabs and concrete products. Rendering or sealing the building materials may be necessary, especially at joints.
- The bund should comprise, or extend around, the whole periphery of the store, and should not be compromised by, for example, entrances and exits, or apertures where services enter the store.

Bunding may be achieved by standing your pesticides within a metal container of sufficient capacity, eg a redundant water tank. Before converting any storage tank to form a store or bund make sure that it is suitable and not contaminated, and that flammable liquids/gases are purged.

- Make sure doors/lids and windows provide adequate security and are kept locked or otherwise secure when not in use.
- Avoid having a water supply passing through the bunded area.
- The store itself, or the area in which it stands, should be roofed.

### **Purpose designed buildings**

Remember the general principles and note that:

- bunds are best constructed as an integral part of the foundations, floor and walls and sunk below ground level;
- where ramps are to be installed for fork-lift handling of pesticides, their slope should be gentle enough to avoid destabilising the load (e.g. a 5° slope).

### **Converting existing structures - detached buildings**

Make sure your selected building/area meets the general principles and:

- remove combustible materials;
- create a sealed bund;
- seal off internal drains.

### **Converting existing structures - stores within larger buildings**

Do the same as for detached buildings, plus the following:

- where possible access to the store should open directly to the outside of the building;
- cage-style stores are only acceptable where the construction of the store and the building in which the store is located meets the general principles, including bunding;
- remember that fire often spreads through the roof space - consider the need for fire resistant walls extending up to the roof.

### **Converting existing structures - lorry bodies, shipping containers etc**

Remember the general principles and:

- don't use lorry bodies with wooden floors or sides;
- create bunding by fitting a sill across the doorway or by tilting the store away from the entrance.

- ensure that there are no low level ventilation ducts;
- check at regular intervals that wall-to-floor joints have not deteriorated.

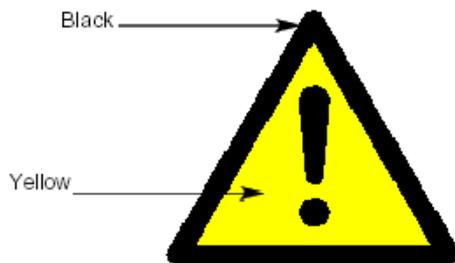
#### Cabinet/bin/chest stores

Remember the general principles and:

- note that purpose-built proprietary cabinets for pesticide storage are available;
- check the advice in the 'Location' section and make sure your store is robust and properly sited away from traffic;
- stand chest freezers with foil or plastic inner liners within a bunded area;
- fit metal cabinets with an internal bund or stand them within a bunded area;
- make all cabinets etc secure or locate them in a secure area.

#### Organising your store

- Mark the exterior of the store (and where it is located within a larger building, the exterior of the building) with the general danger warning sign (see diagram).



- Put 'No Smoking' or 'Smoking and Naked Flames Forbidden' prohibitory signs on the exterior door of the store.
- Provide adequate shelving so that products can be seen by staff.
- Store powders above liquids (liquids can leak if containers are damaged).

- Provide adequate lighting so that you can read the labels.
- Protect stocks against frost - oil or gas heaters or electrical equipment with exposed elements are not suitable.
- Avoid storing plastic containers in direct sunlight shade windows if necessary.
- If pallets are used to keep stocks off the floor make sure they don't present a tripping hazard.
- Lag water pipes.
- Provide a brush, shovel, absorbent granules/sand and an impermeable container to deal with any spillages or leaking drums/packages.
- Practice good store management by ensuring that waste cardboard packaging is removed, old stocks are used up, damaged or deteriorating containers are properly disposed of and an up-to-date stock record is kept (away from the store).
- Have available a list of useful telephone numbers, including your local fire service and the EA.

#### Mobile storage

This guidance applies to storage, normally for less than 24 hour periods, in vehicles, bowsers and sprayers stocked from a fixed store.

Legislation on transporting pesticides is currently under review, but you should ensure that you can safely transport pesticides to the application site and that they will remain safely stored before use.

**Never** carry pesticides in the cabs of tractors, self-propelled sprayers or other vehicles, and consider the following key points before you carry concentrated pesticides to an application site:

- use a vehicle with a floor-to-ceiling bulkhead between the driver/passenger compartment and the load compartment.
- where the vehicle has no bulkhead, fit secure chemical containers or provide a secure cabinet mounted on the exterior of the vehicle or on a trailer.
- check that the load carrying area is free of projections which might damage containers.
- mark the load carrying area with the general danger warning sign.

When away from your fixed store, pesticides should always be secured against unauthorised access:

- park your mobile store away from any location where water pollution could occur;
- try to work within sight of your mobile store - especially in areas where the public may have access;
- lock the cabinet or vehicle when it is unattended.

At the end of the job:

- check that lids/caps on any part used products are secure before the journey back to the fixed store;
- make sure you take all empty containers, packaging and other equipment back to your empties store;
- return unused pesticides to your fixed store

#### **Additional precautions for special classes of pesticides**

Guidance in this section deals only with amounts that can be safely stored in cabinets, chests and bins. If you need to store larger quantities, consult the local HSE office.

The hazardous chemical properties of certain pesticides mean that extra measures have to be taken to store them safely. Check to see if you store any of the following:

#### **Moisture-activated gassing compounds**

People have died as a result of poor storage of these compounds at fixed stores and in transit. In particular using water to fight a fire can present a significant danger to the emergency services. In your fixed store provide a separate storage cabinet which should be:

- made of metal or fire resistant materials;
- located above the level of the store bunding and away from direct sunlight and sources of heat;
- provided with adequate stability, e.g. by bolting it to the wall;
- marked 'Gassing Compound - Do Not Use Water'.

During transport, reduce the risk of exposure if an accident happens by:

- storing gassing compounds in a separate vapour-proof container within the load space;

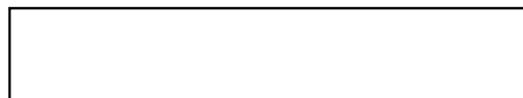
- providing some means of securing the container in the load space, e.g. a frame bolted to the structure in which the container can be strapped.

#### **Pesticides marked 'Oxidising Agent'- such as sodium chlorate**

When heated, oxidising agents give off large amounts of oxygen which can rapidly increase the spread of fire. Large quantities need a completely separate store. However, up to 10 kg may be kept in your store provided that it is kept in a fire resistant, dry container away from heat sources and other pesticides.

#### **Further information**

See Annex B



## Annex G: guidance on using personal protective equipment

You should use the following guidance when you are using a pesticide in a situation not covered by the product label or when you need additional protection (see paragraphs 86 to 88).

<b>Situation</b> (some situations occur in more than one row)	<b>Reason</b>	<b>Wear</b>
All situations including all those set out below	Good occupational hygiene practice, to avoid exposure of your hands and skin and to keep your personal clothing clean	Coverall (see note 2) Gloves (see notes 3 and 4) Boots (see note 5)
Preparing products for use Handling contaminated equipment and containers	To avoid exposure to ‘very toxic’, ‘toxic’ or ‘corrosive’ products	Apron for liquid products (see note 1)
Handling and applying dusts Handling contaminated equipment and empty containers after applying dusts Handling and applying ‘very toxic’ granules Applying fogs, smokes or vapours Handling liquid products Applying to targets above waist height Applying indoors (for example, to protected crops) Cleaning pesticide application equipment	To avoid the chance of eye, face or head contamination (for example, by splashes or contact with airborne droplets or particles)	Face-shield for splashes only (see note 1) Hood (see note 1)
Handling and applying dusts, Handling contaminated equipment and empty containers after applying dusts Handling and applying ‘very toxic’ granules Applying fogs, smokes or vapours	To avoid breathing airborne droplets, particles or vapours	RPE (full face type if product is ‘very toxic’) (see notes 1 and 6)

Reduced-volume spraying outdoors by vehicle-mounted downward-directed sprayers (without a closed cab) or hand-held sprayers	To avoid increased exposure from using a more concentrated spray solution	Face-shield (see note 1) Hood for 'harmful' or 'irritant' products (see note 1)
Reduced-volume spraying by indoor sprayers and outdoor air-assisted broadcast sprayers (without a closed cab)	To avoid increased exposure from using a more concentrated spray solution	Face-shield (see note 1) RPE (see note 1) Hood (see note 1) Apron for 'harmful' or 'irritant' products (see note 1)
Applications using ATV-mounted or trailed equipment Applications using tractors without closed cabs	To avoid increased exposure from using a vehicle without a closed cab (see note 7)	Face-shield (see note 1) Hood (see note 1)

Note 1: These items should be worn in addition to coveralls, gloves and boots.

Note 2: Coveralls should be selected on the following basis:

<u>Purpose</u>	<u>CEN type</u>	<u>Description</u>
Protection against liquid jets	Type 3	Chemical protective clothing with liquid tight connections between different parts of the clothing
Sprays	Type 4	Chemical protective clothing with spray tight connections between different parts of the clothing
Solid particles	Type 5	Reusable and limited use 'particle tight' protective clothing
Liquid splashes and solid particles	Type 6	Reusable and limited use protective clothing offering limited protection against liquid splashes and aerosols and solid particles

Note 3: Unless the pesticide label or a specific COSHH assessment indicates otherwise, the basic recommendation should be nitrile rubber, 0.5 millimetres thick and 300 millimetres long.

Note 4: To be taken off when entering 'clean' areas such as tractor cabs

Note 5: Wellington boots or water-repellent footwear.

Note 6: RPE should be selected on the basis of the product label and a COSHH assessment. The following can be considered as the basic requirements:

Potential airborne dusts or spray particles	EN 149 particle-filtering half mask FF2-SL or EN 140 + 143 half mask connected to particle filter P2
Potential airborne vapour	EN 140 + 141 half mask connected to combined filters A1P2

Note 7: Open-backed cabs (including cabs with open rear windows) do not count as closed cabs, as spray can be drawn inside.

## Annex H: record sheet for pesticide treatments

Operator name:														
Job ref.	Date	Site of application	Crop, area, material or structure to be treated	Reason for treatment	Product used (see note 1)	Dose of product applied (litres or kilograms per hectare)	Volume applied (litres per hectare)	Total amount of product used (litres or kilograms)	Total area treated (hectares)	Start time	Finish time	Total hours	Weather conditions	Other relevant information (see note 2)

Note 1: Show all products when a mixture is used.

Note 2: You should record, for example:

- harvest intervals, livestock withholding periods, worker exclusion periods and ventilation periods, as appropriate;
- whether the crop or weeds are in flower;
- whether you have notified neighbours, beekeepers or others;
- whether you have displayed (and removed) warning signs; and
- whether you had any problems when using the pesticide.

You should also make a note of the effectiveness of the treatment and any damage observed after an appropriate interval.

You will need to make additional records:

- to meet the requirements of the LERAP schemes;
- when you are applying certain pesticides or working in certain situations (see part 4 of this Code); and
- to meet the requirements of crop or woodland assurance schemes.

## **Annex I: application of pesticides from an aircraft**

You must meet specific legal requirements before, during and after a pesticide treatment from the air. You can only use products which are specifically approved for application from the air, and you must regularly send details of all of your pesticide use from aircraft to:

Pesticides Usage Survey Group (PUSG),  
Defra,  
Central Science Laboratory,  
Sand Hutton Lane,  
Sand Hutton,  
York.

You must follow the statutory conditions of use on the product label when applying pesticides from the air.

Everyone applying pesticides from aircraft must hold a Civil Aviation Authority qualification (the aerial application certificate) and, in the case of contractors and young people, the appropriate certificate of competence in pesticide application.

Under COPR, you must notify specific organisations before using a pesticide from the air. You will also need to consult other organisations and get their agreement before carrying out the treatment.

### **Consultation**

Consultation means more than just giving notice to the relevant authority. It should take place well before the intended treatment and certainly not after the statutory minimum consultation period. The person carrying out the treatment operation will need to provide adequate information so that the organisation consulted can comment in full. You will need to take account of the organisation's views when deciding how to carry out the treatment operation (or whether to carry it out at all). If you are not sure what to do, talk to the organisation concerned for more advice.

Ideally, the farmer or landowner will consult the relevant authority when deciding to use a contractor to apply pesticides from the air. This will give the organisations consulted as much time as possible to consider their views. If this has been done, the relevant authority will have reached a decision by the time you carry out the statutory consultation.

When you notify the relevant authority that you intend to apply a pesticide from the air, you must include the following information.

- (a) The name, address and, where possible, the phone number of the person planning to carry out the application.
- (b) The name of the pesticides to be used and their active ingredients.
- (c) The intended date and time of the application.
- (d) Confirmation that you have given the same details to the Chief Environmental Health Officer for the district.

**Under COPR, any person applying a pesticide from the air must do the following.**

At least 72 hours before starting the treatment:

- consult the relevant conservation agency (Scottish Natural Heritage) if any part of Local Nature Reserve, Marine Nature Reserve, National Nature Reserve or Site of Special Scientific Interest lies within 1500 metres of any part of the land to be treated;
- consult the appropriate area office of the Scottish Environment Protection Agency if the land to be treated is next to, or within 250 metres of, water; and
- get the permission of the Scottish Environment Protection Agency if the pesticide is to be applied to control aquatic weeds or weeds on the banks of watercourses or lakes.

At least 48 hours before starting the treatment:

- give notice of the intended application to the appropriate reporting point of the local beekeepers' spray warning scheme operating within the district.

At least 24 hours and (as far as reasonably possible) no more than 48 hours before starting the treatment, give notice of the intended treatment to:

- the Chief Environmental Health Office for the district;
- the occupants (or their agents) of any property within 25 metres of the boundary of the land to be treated; and
- the person in charge of any hospital, school or other institution with boundaries lying within 150 metres of any flight path intended to be used for the treatment.

At least 24 hours before starting the treatment:

- provide robust and legible signs and put them in place within 60 metres of the land to be treated, to tell pedestrians and drivers of vehicles about the time and place of the intended application.

You can find information on these and other specific legal controls in the Civil Aviation Authority (CAA) booklet 'Information on requirements to be met by applicants and holders of the aerial application certificate' (CAP 414).

SEPA has developed a multi-agency form which is intended to be used to submit details to SEPA, Local Authorities and Scottish Natural Heritage (SNH)

## **Annex J: safety considerations when preparing and managing amenity pesticide application contracts**

People specifying or managing contracts for the application of pesticides in amenity situations should follow this guidance to make sure that:

- all the work will be carried out in line with the relevant legislation; and
- the risks to human health, wildlife and the environment will be assessed and adequately controlled.

### **1. Preparing tenders**

An employer or organisation preparing a contract for pesticide application must comply with the relevant legislation and should consider the possible effects that the proposed pesticide use may have on human health, wildlife and the environment. It is essential that you carefully consider the following issues when preparing tenders and managing contracts. It may be necessary to get appropriate training or to use people with the relevant expertise.

#### **a. Policy on using pesticides**

You should have a policy document which sets out your attitude towards using pesticides on areas under your control. This should show that you have considered alternative methods of control and have taken account of environmental and human health considerations. The minimum amount of pesticides should be used.

#### **b. Objective**

You should have a clear understanding of the cause and effect of the problem to be treated, and the objectives the contract aims to achieve.

#### **c. Legislation**

You must have knowledge and an understanding of all current relevant legislation and codes of practice relating to supplying, storing and using pesticides. This is because you are responsible for making sure that your staff and any contractor's employees comply with the legislation.

#### **d. Employees**

You should have an adequate number of trained and appropriately qualified (preferably BASIS certificated) staff or advisers to prepare tender documents and monitor the contract. Details of specific items like the type of pesticide to be used, the timing and the dose should only be included in the contract specification if you have staff with the relevant expertise and competence.

**e. Performance standard**

You must be clear as to the standard of control needed (this will not necessarily be 100% control) and that it is possible to achieve. You should take account of any safety or legal requirements which may limit your choice of pesticide or application technique. In particular, the performance standard should reflect the level of control described on the product label. In all circumstances, the performance standard set must be realistic.

**f. Areas for treatment**

A clear definition of the areas to be treated (including any relevant measurements, maps and plans) should be available. Maps should clearly show sensitive and vulnerable areas such as watercourses, groundwater protection zones, SSSIs, nature reserves, schools, hospitals and old people's homes.

**g. Contractors**

You should prepare a contractor profile (covering the capabilities and skills you need and the quality you expect) and assess possible contractors to decide whether they appear able to meet the conditions of the tender. This assessment must include information on:

- the contractor's experience and competence in carrying out similar work; and
- the number of qualified employees that the contractor can make available to carry out the specified work at the appropriate dates and times.

**h. Monitoring**

You must have a programme for monitoring the contract to make sure that:

- the tender conditions, specifications, performance and standards of control are met; and
- appropriate records are kept and submitted.

The people carrying out the monitoring should be suitably trained and competent.

**i. Communication and incident control**

You should have an established plan to make sure that you can deal efficiently and quickly with any incident resulting from the contract which is likely to be a cause for concern.

**j. Review**

You should review all aspects of long-term contracts each year to make sure they comply with any changes in policy, legislation, controls or any other factor that is likely to affect its performance. The contract should feature a break clause to allow any changes to be reflected in the contract if the policy or legislation changes.

## **2. Contract details**

It is essential that the contract is well defined (for example, in terms of its scope and methods of working) and staff drawing up the contract must have a high level of expertise and competence because of the complex legal and safety requirements relating to pesticide use.

### **a. Introduction**

The first clauses in the tender should cover issues such as your standing orders, conditions of contract and insurance requirements.

### **b. Work to be carried out**

You need a statement on the type and range of work to be carried out, with specific details of areas to be treated including:

- appropriate measurements;
- information on any unusual hazards;
- any other proposed work (such as building work);
- any restrictions on working hours or machinery that may be used; and
- any specific instructions for working in or near sensitive or vulnerable areas (as defined in paragraph 1 f above).

### **c. Standard of control**

The standard of control you need for each part of the contract must be clearly set out and realistic, taking account of:

- the expected performance of the chosen pesticide (in terms of its effectiveness and persistence);
- any environmental considerations; and
- the proposed start date of the contract.

### **d. Pesticide selection**

You should specify the pesticides (also written as active ingredients) and the rates of application to be used.

If the contractor (having inspected the site) consider that a different pesticide to that specified is needed, they must get your opinion and written permission before making any changes. The contractor must provide with their tender a list of the products (including the MAPP or HSE numbers) to be used (including equivalent alternatives) together with the rates of application for each part of the contract.

If you want the contractor to specify which pesticides they are going to use to achieve the necessary performance standard (in this case the contractor should have the appropriate BASIS Certificate in Crop Protection), the contractor must give you a list of the pesticides (including MAPP or HSE numbers) to be used for each part of the contract, giving the application rates and number of treatments considered necessary to achieve this standard.

**e. Legislation**

By submitting a tender, the contractor will have accepted that:

- the proposed work will comply with all appropriate legislation and relevant codes of practice; and
- they will send you the necessary documents (see below).

**f. Reporting and record keeping**

The contractor's site representative will regularly report to your representative (at least once a week) to give you a detailed record of the work done and the plan for ongoing work.

**g. Inspecting sites**

It is assumed that the contractor will have visited the sites to be treated and fully considered all relevant factors before tendering.

**h. The contractor**

The contractor must be able to:

- provide evidence of the necessary qualifications, experience and competence to meet the relevant statutory requirements covering the application of pesticides in the proposed situation; and
- provide evidence of quality assurance registration under ISO 9002 or have a written quality statement and long-term quality objectives available for evaluation.

If possible, you should use contractors who are members of an appropriate trade association or possess the BASIS Advanced Contractor Certificate (see part 1 of this Code).

**i. Protecting the environment**

The contractor must carry out the work in a way which avoids contaminating any person, animal or property, and must take particular care to protect water, wildlife and natural habitats. The contractor will pay special attention to areas where pesticides are mixed and where application equipment is filled or cleaned. The contractor should provide a statement with their tender describing how they will dispose of excess spray solution, empty pesticide containers and other packaging, and how they will get clean water.

**j. Personnel and equipment**

The contractor must use named, trained staff with the relevant certificates of competence and who are familiar with the operations to be carried out and the appropriate safety procedures. The contractor must tell you immediately if there are any staff changes. Suitable personal protective equipment must be used in line with the product label requirements, and the relevant legislation and codes of practice. The contractor must also give you details of the type of application equipment to be used and the proposed precautions for protecting members of the public.

#### **k. Subcontracting**

The contractor must not sublet any part of the contract without your permission in writing. If you give your permission, the subcontractor must meet all the terms and conditions of the contract.

#### **l. Programme of work**

The successful tenderer will send you a programme of work, giving the starting date, schedule of work and the expected length of the contract.

#### **m. Monitoring**

You must regularly monitor how the contract is being carried out and whether the agreed performance standards are being met.

##### **Documentation to be provided with the tender**

The contractor must send you the following documents. If they fail to do, their bid may not be considered.

- 1 A copy of their insurance certificates.
- 2 The names and addresses of two referees for whom they have carried out work of a similar type and value.
- 3 A copy of the company's BASIS 'Registered Store' Certificate (see the note below).
- 4 A copy of the BASIS Storekeeper's Certificate covering the store in which pesticides to be used in this contract are to be kept (see the note below).
- 5 A copy of the BASIS Certificate in Crop Protection (Amenity Horticulture) of the person offering technical or sales advice.
- 6 Copies of the appropriate SSTS certificates of competence for all operators and supervisors, together with proof of their direct employment by the contractor.
- 7 A copy of the contractor's safety policy, risk assessment and control procedures (as required under the Health and Safety at Work etc. Act and its associated regulations).
- 8 Details of membership of any professional body or trade association.
- 9 Details of the contractor's waste management policy.
- 10 Details of the contractor's standard operating procedures (SOPs), directly related to the work as specified in the contract.

Note If less than 200 litres or 200 kilograms of pesticides are being stored, items 3 and 4 may not be required.

### **3. Monitoring contracts**

Contract operations involving pesticides should be monitored by staff with relevant qualifications at all stages from preparing the tender documents to completing the contract. This is to make sure that all legal and safety requirements are met and that the agreed performance standards are achieved. A monitoring programme should cover the following.

#### **a. Preparing tenders**

It is important to:

- make sure that the contract schedules are an accurate record of the areas to be treated;
- make sure that the pesticide specification is adequate and suitable to achieve the performance standards set;
- decide on how often site inspections should take place; and
- prepare a check list of the areas to be assessed during site inspections.

**b. Receiving tenders**

You must examine the tenders you receive to check whether they meet all of your requirements and include all the necessary documents. If any documents are missing, you should give the contractor an opportunity to send you the outstanding items by a suitable deadline.

**c. Carrying out the contract**

When the contract is being carried out, you must visit all the sites to make sure that:

- the operation is being carried out safely, legally and in accordance with relevant codes of practice;
- the operators are using suitable personal protective equipment and have the appropriate SSTS certificates of competence;
- the contractor's vehicles are suitably equipped to deal with any spillage or similar incident;
- pesticides are being mixed and prepared in an appropriate location and in a safe and legal way;
- only the operators named in the documents submitted with the tender are using pesticides;
- the pesticides being applied are as agreed in terms of the approved products, rates and method of application (if any sampling is carried out, two samples should be taken, sealed immediately, and one should be left with the contractor);
- all appropriate health and safety regulations are being followed;
- the storage of pesticides on site is safe and meets legal requirements;
- the appropriate records of pesticide application and areas treated are being kept and submitted as required;
- all environmental risks are being appropriately managed; and
- written records are kept to show that surplus spray solution, tank washings and empty packaging are being disposed of safely, legally and in line with relevant codes of practice.

**d. Assessing the performance of contracts**

You must inspect all sites while the contract is being carried out and at appropriate intervals after its completion, to assess how effective the treatment is and, where necessary, ask the contractor to put things right. These assessments must take account of the performance standards set in the tender document.

## **Annex K: safety considerations for amenity and industrial pesticide uses in high-security or high-risk areas**

You must take special care when applying pesticides in areas such as railways, gas and electricity transmission sites, Ministry of Defence sites, oil refineries, public highways and motorways. This is because of the increased hazards at these sites and the need to take any extra safety precautions demanded by the site controller.

1. People supervising work on high-risk sites must fully understand:
  - (a) what work has to be done;
  - (b) how and when to contact the site controller's liaison officer;
  - (c) the local hazards; and
  - (d) the safety precautions to be taken as a result of the local hazards (when working on public roads this will include the requirements of the Road Traffic Regulations).
2. Access to the site may be restricted to specific times, and certain types and sizes of vehicle may be prohibited. Escorts and work permits may also be needed. The site controller must supply the contractor or work team with all the relevant information. Everyone involved must clearly understand the arrangements over escorts, and appropriate penalties should be agreed if either the escort or work team fails to arrive on schedule.
3. Access routes to the site may be over land that is not under the direct control of the site controller. Contractors and work teams must make sure that they have adequate permission to reach the site with the equipment they propose to use. Any damage must be repaired.
4. Site security must be maintained during all work, and the unauthorised access of people and animals must be prevented. Visitors or contractors' staff who are not directly involved in the work will only be allowed onto the site with the specific permission of the site controller (normally in writing).
5. Contractors and work teams should co-operate closely with any other workers on site and make sure that no one is put at risk.
6. As most of these sites are enclosed, it is particularly important that contractors and work teams make sure that all rubbish and waste materials are removed from site at the end of the work, preferably every day. No fires will be allowed on site without the written permission of the site controller and unless all relevant regulations are followed.
7. Contractors and work teams must comply with the site controller's safety policy and any associated rules and work procedures. Contractors and work teams must make sure that appropriate operators have any necessary and specific training the site controller demands.

8. Within any one contract there may be special conditions relating to individual sites. These must be made clear to contractors and work teams before work starts. Work supervisors must contact local site controllers at least seven days before work is due to start to check whether:
  - any special conditions apply to each site; and
  - there will be other work in progress on the site when pesticides are being used.
9. Any application equipment left on site must be suitably secured and immobilised, and no pesticides should be left on site without the written permission of the site controller.
10. Managers of contractors and work teams must make sure that all workers going onto the site are able to understand both written and spoken safety instructions without any difficulty.
11. Pesticides must not be allowed to drift off site during application. Any accidental pesticide drift must be reported immediately to the site controller's local liaison officer. If the weather conditions become unsuitable, work must stop and the site controller's local liaison officer must be told immediately.

## **Index**

(A detailed index will be added before publication)

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