

PREVENTION OF POLLUTION BY PESTICIDES: PPG9

POLLUTION PREVENTION GUIDELINES

These guidelines are intended to assist professionals who handle pesticides, and are without prejudice to any other legal obligations or codes of practice. They have been jointly produced by the Scottish Environment Protection Agency and the Environment Agency for England and Wales, referred to as the Agency or Agencies in these guidelines. If a new pesticide store is planned or pesticides are to be used in or near water, the Agency must be consulted. Contact details can be found at the end of these guidelines.

Note that the term pesticides as used in these guidelines includes herbicides, insecticides, fungicides and other plant protection chemicals. Separate guidance dealing with the use and disposal of sheep dip is available (PPG12-Reference 1).

1. GENERAL

The Agencies are responsible for both the protection of “controlled waters” from pollution and for the prevention of pollution of the environment, harm to human health and detriment to local amenity by waste management activities. “Controlled waters” includes all watercourses, lakes, locks, canals, coastal waters and water contained in underground strata (groundwater) and it is an offence to cause pollution of such waters, either deliberately or accidentally.

The use of pesticides is highly regulated and there are many specific regulations and codes of practice which are relevant. This guidance document focuses on the Agencies’ principal areas of responsibility for protecting “controlled waters” and waste regulation, identifying relevant guidance available from other organisations where appropriate.

2. BEFORE USING A PESTICIDE

A pesticide should only be used after a thorough review of the disease or pest control strategy, looking at alternative methods of control. For crop protection, the strategy should:

- a. Avoid or anticipate problems by selecting resistant varieties, adopting a balanced rotation, establishing beetle banks and conservation headlands, using appropriate fertilisers and ensuring good crop storage facilities.
- b. Identify potential problems, their risk and the need for control. Undertake adequate monitoring and regular crop walking and use appropriate diagnostics, thresholds and forecasting methods.
- c. Consider the use of techniques such as cutting, harrowing, mulching and delayed sowing, which may present a lower risk of harm to the environment and still be cost effective. Integrated Crop Management (ICM) may reduce the reliance on pesticides. ICM uses a range of farming practices that balance the economic production of crops with measures that preserve and enhance the environment (Reference 2).

In all cases, use chemical control as the last resort. Apply carefully as part of a planned, integrated approach, which should include: product selection, application method, transport, storage, disposal, emergency procedures and records. It is also important that a COSHH (Control of Substances Hazardous to Health) assessment be made to assess risks to human health and ensure the correct product is selected, using non-persistent pesticides whenever possible.

It may be worth seeking independent advice to diagnose the problem and select a means of control. Agency staff may be able to provide a list of suitably qualified contractors.

3. SELECTING A PESTICIDE

There are a number of factors that should be considered when choosing a pesticide. Cost and effectiveness are important, but environmental factors also need to be taken into consideration. These include persistence, toxicity to non-target species (such as birds, bees and fish), the proximity of controlled waters, wells, swallow-holes and boreholes and the mobility of the pesticide. This information is provided in Environmental Information Sheets by some manufacturers, which contain details of the environmental risks associated with a particular product. They may also provide useful guidance on the best time to apply the product in order to minimise environmental impacts.

4. PESTICIDE POLLUTION

Even when diluted, some pesticides are potentially toxic to fish and other aquatic life. In extreme cases, one teaspoonful could be enough to kill all the wildlife in a small stream. Very small quantities of pesticide can be detected in water and the limits set for water abstracted for public drinking water supply are very low. As little as a tea-cup full of concentrate could be enough to cause the daily supply to a city the size of London to exceed the permitted limits.

The protection of groundwater quality is vital (see References 3 & 4) and the Agency may seek to restrict the use of pesticides in potable supply protection zones and in areas vulnerable to groundwater pollution. The Groundwater Regulations 1998 give the Agencies the power to take action in the event of the storage, handling, use or disposal of a pesticide posing a risk of contaminating groundwater.

Every year, pollution incidents occur as a direct result of poor storage, preparation, application or disposal of pesticides. Operator training, safe storage of undiluted pesticides, careful application (particularly in close proximity to watercourses) and appropriate disposal of diluted solution (in accordance with the Groundwater Regulations 1998), empty containers and pesticide concentrates are all essential in order to prevent water pollution.

5. PESTICIDE STORAGE

All professional users, such as farmers and crop spraying and amenity contractors, should store products according to statutory requirements, HSE guidance on storing pesticides (Reference 5) and preferably to BASIS Standards (See Reference 6). Pesticides should be stored in a dedicated facility of an appropriate size and design and sited so that any spill or leak could not pollute ground or surface waters. With the exception of the roof, buildings should be constructed of materials with 30 minutes or longer fire resistance. All stores should be able to retain leakage or spillage. This is usually achieved by the provision of an appropriately sized containment bund, constructed with impermeable, chemical resistant walls and floor. The exterior of the store should be clearly marked with a general warning sign and doors, lids and windows should be locked when it is unattended to minimise the risk of vandalism and theft.

Adequate shelving should be provided and any products stored on the floor should be on pallets. Absorbents and other equipment required to deal with leaks or spills must be provided and an up-to-date stock record should be kept in a separate place.

Only store enough pesticide for your immediate use. Small quantities should be kept in a purpose built proprietary cabinet, which may need to be banded in some circumstances.

The siting of all pesticide stores should be approved by the Agency and the Fire Prevention Officer. Consultation with the Health and Safety Executive, Environmental Health Officer, local planning officer and crime prevention officer may also be appropriate. Stores used for the sale and supply of pesticides are subject to more stringent legal requirements and inspections (Reference 7).

6. PESTICIDE PREPARATION

Always read and follow the instructions on the label carefully. If you require clarification of the instructions, contact the supplier or manufacturer. Aim to minimise the volume of waste and, if possible, to produce none at all, by careful calculation of the amount needed and effective control of the application rate. Avoid back siphoning of pesticide into water by using an intermediate tank or syphon break, to ensure that there are no direct connections between a spray tank and the water supply.

Sprayer filling and rinsing of containers should take place at specified locations only, well away from drains, soakaways, wells, boreholes and watercourses. These areas should be chosen so that any spillages are contained for subsequent removal and disposal. Records of any filling and washing operations should be kept. Be prepared for accidental spillages. In the event of a spillage, drains should be blocked or isolated, the pesticide absorbed with an inert material such as cat litter or fine dry sand and disposed of in a safe manner (see section 9). It is preferable that closed chemical transfer systems are used, as these minimise the risk of spillage and provide effective rinsing of the container.

7. PESTICIDE APPLICATION

The statutory requirements on the label must be followed - failure to do so is an offence. Follow the relevant Code of Practice ("Green" for farms and holdings, "Orange" for amenity and non-agricultural use – References 8 & 9). Ensure that spraying equipment is properly maintained and regularly calibrated. Do not spray directly over ditches, watercourses and open drains and avoid wells, boreholes, soakaways and swallow-holes. Do not allow spray to drift onto water, hedges or neighbouring woodland or other non-cropped land. The potential for spray drift can be greatly reduced by using low drift spraying systems. A vegetative strip of land next to watercourses can help to avoid pesticide run-off as well as providing a valuable wildlife habitat. For certain pesticides requiring a buffer zone when applied next to a watercourse, there is a legal obligation to carry out and record the results of a "Local Environmental Risk Assessment for Pesticides" (LERAP). It may be possible to reduce the size of a buffer zone by carrying out a LERAP (Reference 10).

Application of pesticides must not be made when wind conditions could cause spray drift, when the ground is waterlogged or heavily cracked or when heavy rain is forecast, as this increases the risk of pollution. Particular care is needed when spraying on hard surfaces, as pesticides can more easily run off into drains and watercourses. More detailed advice is available in References 11 and 12. Only herbicides approved for use in or near water should be used to control aquatic weed and bankside vegetation (Reference 13) and the prior approval of the Agency is required. The Agency must also be consulted at least 3 days before aerial spraying within 250 metres of any watercourse or lake.

Consideration should be given to the sensitivity of the site of application with respect to groundwater, taking particular note of springs, wells, boreholes and swallow-holes. Information on the location of source protection zones and on the availability of groundwater vulnerability maps can be obtained from the Agency. Information on the location of small, private boreholes may be obtained from the local authority.

8. DISPOSAL OF PESTICIDES AND CONTAINERS

Follow the relevant guidance (Reference 14) and Code of Practice. When the spraying is completed, all equipment should be cleaned, washed and rinsed in the field if possible, following the guidance below for dilute pesticide. Where this is not possible, cleaning should be carried out in a dedicated, hard surfaced area, where the effluent produced can be contained for suitable disposal (see Section 8a). The volume of washings produced will be considerably reduced by integral rinsing systems. The disposal of sprayer washings and container rinsings should be taken into consideration at the time of application. When rinsing, the tank should be flushed with small volumes of water rather than simply filling and emptying.

a. Dilute Pesticide

Dilute pesticides must never enter watercourses. Pesticides should never be poured into drains connected to septic tanks, as this can affect the performance of the tanks and cause serious pollution. Similarly, **soakaways must not be used.** There are a number of acceptable options for disposing of dilute pesticide:

- i. Re-use in further batches of the same spray (providing the maximum concentration or application rate is not exceeded).
- ii. Apply to the previously treated crop or area, if this is within the terms of the product approval.
- iii. Apply to a previously untreated crop if permitted by the product label.
- iv. Employ a specialist waste disposal contractor to remove.
- v. Use suitable equipment to treat waste containing pesticide. The treated waste should be stored and the Agency consulted prior to its disposal.
- vi. In the majority of situations, the Agency would expect that at least one of the above disposal options would be viable. However, should this not be the case, dilute pesticide wastes may be applied to a sacrificial area of land. The Groundwater Regulations 1998 require that the intentional disposal of waste pesticides to such an area of land must be authorised by the Agency. The Agency should be contacted for further information on these Regulations. Permission from the landowner should be sought in amenity situations.

b. Pesticide Concentrate

Products that still have MAFF/HSE approval should be used in the approved manner. If the pesticide is unused and unwanted, contact the manufacturer or the British Agrochemicals Association (BAA – see Section 12) for advice. In some cases it may be returned to the supplier. Otherwise, a specialist waste disposal contractor should be used, contact the Agency or your local authority for further advice.

c. Containers

Many manufacturers encourage the return of unwanted containers and are introducing specially designed reusable containers. If it is not possible to return the container, a licenced waste disposal contractor should be used. Empty containers in which hydrogen cyanide gassing powders or aluminium, magnesium or zinc phosphides have been kept, should not be rinsed or cleaned as this can cause the production of hazardous gases. Instead, they should be filled with dry earth or sand and punctured before disposal. Other empty containers must be thoroughly cleaned (triple rinsed), preferably during mixing operations, before disposal. Puncture and crush containers after cleaning so that they cannot be used in the future. Some waste disposal sites are licensed to accept empty containers - your local Agency office can provide advice on this.

It may be possible to dispose of empty containers on farms, providing this is done in accordance with the appropriate Code of Good Agricultural Practice (References 11 and 12). Practical guidance on the safe burning of containers in on-farm incineration units has been produced as a result of research by the BAA (Reference 15). The burial of clean, empty containers is also permitted, provided no pesticide residue remains in the containers.

9. DEALING WITH SPILLAGES

An emergency procedure, for use in the event of a spillage, should be drafted and made available to all operators and can save valuable time in an emergency. Appropriate equipment, including absorbent materials, brushes, shovels, suitable containers or polythene bags and personal protective clothing should be kept available. In the event of a spillage, liquids should be contained using absorbent material such as cat litter or dry sand and powders swept up. **Pesticides must not be hosed into any drains, soakaways or streams.** All waste and contaminated materials must be securely bagged, labelled and stored in a dedicated area pending collection. Specialist waste disposal contractors should be used to dispose of any contaminated materials. If there is any risk that ground or surface waters have been, or might become, contaminated, contact the Agency immediately on the emergency hotline number, shown on the back of these guidelines. Prompt notification may enable the Agency to minimise the effect of the spillage and prevent serious consequences.

10. TRAINING

No person should use a pesticide unless they have received adequate instruction in the safe, efficient and humane use of pesticides and are competent for the duties they are called upon to perform. Certificates of Competence are required for certain categories of user. More details are available in the annually produced UK Pesticide Guide (Reference 16).

11. SPECIALIST ADVICE FROM THE AGENCIES

Agency staff are pleased to discuss the storage and disposal of pesticides and the use of herbicides on or near water and may be able to arrange a site meeting. In England and Wales, technical and policy advice on pesticides can be gained from the Pesticide Section of the National Centre for Ecotoxicology and Hazardous Substances (EHS) on 01491 828549.

12. REFERENCES

1. PPG12: Sheep Dipping: Environment Agency
Sheep Dip: The Facts: SEPA
2. Pesticides and Integrated Farming. PB2489
3. Policy and Practice for the Protection of Groundwater: Environment Agency
4. Groundwater Protection Strategy for Scotland: SEPA
5. Guidance on storing Pesticides for Farmers and other Professional Users (HSE Guidance note AIS16): HSE Books: Tel. 01787 881165
6. Inspection and approval of Agrochemical Stores by Pollution Control and Fire Prevention Officers for BASIS Registration: BASIS (Registration) Ltd: Tel. 01335 343945
7. Code of Practice for Suppliers of Pesticides to Agriculture, Horticulture and Forestry (Yellow Code). PB3529
8. Code of Practice for the Safe Use of Pesticides on Farms and Holdings (Green Code). PB3528
9. Code of Practice for the use of Approved Pesticides in Amenity and Industrial Areas (Orange Code) June 1998: ISBN 1-871140-12-9 NAAC: Tel. 01621 841675
10. Local Environmental Risk Assessments for Pesticides. A Practical Guide. PB4168
11. Code of Good Agricultural Practice for the Protection of Water. PB 0587
12. Code of Good Practice for the Prevention of Environmental Pollution from Agricultural Activity. Scottish Executive Rural Affairs Department: Tel. 0131 556 8400
13. Guidelines for the use of herbicides on weeds in or near watercourses and lakes. PB2289
14. The Groundwater Regulations 1998. SEPA Guidance notes:
 1. Disposal of waste agrochemicals to land. Guidance on compliance for farmers, crofters and growers
 2. Best practice methods for the treatment and disposal of waste sheep dip and pesticides
 3. Disposal of List I and II substances to land: general guidance on compliance
15. Container incineration: A Practical Guide: British Agrochemicals Association Ltd.
16. The UK Pesticide Guide 2000: CAB International and the British Crop Protection Council. ISBN 0 85199 468 7

References 2,7,8,10,11 and13 are available free of charge from MAFF Publications, Telephone 0645 556000
Reference 15, as well as a range of other useful publications, is available from the British Agrochemicals Association (BAA) at 4 Lincoln Court, Lincoln Road, Peterborough PE1 2RP Telephone: 01733 349225 Fax: 01733 562523 Web site: <http://www.baa.org.uk>

Reference 3 and the following relevant publications are available from the Stationery Office. Tel: 08706 005522
Control of Substances Hazardous to Health (COSHH) Regulations 1994
Food and Environment Protection Act 1985 - Part III
Weed control and environmental protection ISBN 011 752 7084

All the Agencies' pollution prevention guidance notes are available on the web sites listed below.

ENVIRONMENT AGENCY

HEAD OFFICE

Rio House, Waterside Drive, Aztec West
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Fax: 01733 231 840

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Fax: 0121 711 5824

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Fax: 0113 246 1889

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Fax: 01925 415 961

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
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THAMES

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Fax: 01355 574 688

EAST REGION HQ

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Fax: 0131 449 7277

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water in England, Wales, Scotland and Northern Ireland.

EMERGENCY HOTLINE

0800 80 70 60



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