Before Spraying

Pesticide Handling Areas

Why Pesticide Handling Areas are Important

Up to 40% of pesticides reaching ground and surface water may come from pesticide handling areas. Water is vulnerable from tiny splashes and spills that occur when filling the sprayer and when rinsing the container. Inappropriate wash down, cleaning and disposal activities can also have significant adverse environmental impact. Just one dropped foil seal can contain enough pesticide to increase residues above the 0.1ppb standard in 30 km of stream. In one study it was possible to reduce the pesticide residues coming from the handling area by 99%. A key step to achieving this change was to review the site and the surface used for filling and wash down activities.
Pesticide users and sprayer operators must therefore not only look carefully at the design and surfaces used in the handling area, but should also review their own filling and cleaning practices.

H2OK? Think Water

Keep Water Clean
Prevent spills
Clear up immediately & dispose of waste safely

H2OK? Think Water

Reviewing the Site

Siting and design of pesticide handling areas has developed over the years for operational convenience rather than pollution control. Research has shown that a poorly managed concrete filling area is potentially the worst surface for handling pesticides especially when the water from the concrete pad drains into a local ditch or yard drain. However a well managed bunded concrete filling area with drainage water intercepted and taken for treatment through a Lined Biobed or to a sump for disposal on an area with a groundwater permit is he best options
Changing the site, its layout and surface to improve the management of waste liquid and run-off can show reductions in pesticide load of 1,000-100,000 fold. through The Voluntary Initiative, all pesticide users and spray operators are encouraged to review their current sites and to consider solutions and practices which can prevent, control, retain and degrade pesticide residues and significantly reduce the risk of pesticides reaching water.

Planning Ahead

Before making any changes to your existing arrangements you should consider carefully two factors:

Soakaways are not an acceptable option as they can pollute groundwater

1 Local Water Priorities

Establish if and how local water sources may be affected by what you do at your handling area. Advice and information on water quality risks is available from your local environment agency office. They can also advise you if you are in a Groundwater Protection Zone as well as giving you background information on local hydro-geology. In any event, you should ensure that the pesticide handling area is sited:

- At least 10m away from any watercourse or vulnerable site;
- At least 50m away from any borehole spring or well;
- Away from existing farmyard flash flood routes, rain water outlets and gutter outfalls;
- Away from farmyard drains and not above any tile or mole drains;
- Aside from main business traffic routes;
- On well structured soil with at least 1.6m depth of soil and sub-soil before bedrock;

Ensure as far as practical that any water with pesticide residues is handled separately from other drainage water. Use a bund (an 8-12cm concrete lip) to keep the handling area water within the area and to keep rain water and other vehicles out of the filling area.

2 Handling Area Purpose

Any handling area should allow the operator to work safely and efficiently. The handling area should also contain any contamination such as drips and splashes and run-off from rainfall. (Note: Any significant spillages should be soaked up and removed for separate disposal). However, the key planning decision is whether the handling area will be used just for sprayer filling or whether washdown activities will also take place in the area. If the sprayer is being washed down it will:

- Increase the amount of waste liquid. This means that for some solutions a larger disposal area may be required.
- Require a Groundwater Permit (GWP). All cleaning and wash down operations that do not take place “in the crop” are regarded by environment agencies as “disposal”. This means that disposal or treatment areas other than the crop (or Lined Biobeds see over) will require a permit from your local environment agency. If discharging less than 5,000 litres/day and if less than 30,000 litres/year in total the application fee is £390 and the annual fee is £153.90. The permit is valid indefinitely, though subject to EA review. In Scotland there is a whole farm application fee and annual subsistence fee. (Note any changes to a permit need to be advised to the local environment agency).

Pesticide Handling Area Solutions

Portable Bund

A portable bund with a suitable lip and made from non-absorbent material can be used to trap spills and splashes. The bund can be washed down and then drained back into the sprayer for application to the "crop" or treated area.

Advantages	Disadvantages
Low cost and simple	Not suitable for wash down of large application equipment
Ideal for handheld equipment	Bund not proven with sulfonyl ureas
Easy clean up of spills and splashes	May not be practical for regular use
Compatible with other solutions	Risk of soil contamination

Good for Handling

Grass & Soil

Move handling area to grass reinforced with a grid or gravel. This is only suitable for filling, mixing and sprayer maintenance. Periodic movement of the area selected is advised. Note: Do not remove top soil when installing grid; a thin layer of gravel may be placed above the top soil to improve surface stability. Not recommended for heavy clay soils due to compaction risks.

Advantages	Disadvantages
Low cost	May not be convenient for services and sprayer storage
Easy to establish	Not suitable for wash down
	Grass/soil will become compacted over time
	Not on clays - awkward to walk on when churned up

Fully Contained System

Full system with sump and tank for storage of all waste water. Liquid waste collected by a licensed waste disposal contractor or sprayed out on a site with a GWP. Suitable for filling, mixing and sprayer wash down.

Advantages	Disadvantages
No requirement for a GWP if contractor used	Major changes may be required to existing handling site
Suitable for both handling and wash down	Higher cost to build
	Careful management of volumes required
	High operating cost

Handling and/or Washdown

Lined Biobeds

Biobeds are a specially excavated lined pit filled with a mixture of straw, soil and peat-free compost and turfed over. Research has shown that Lined Biobeds are very effective at retaining and degrading pesticide residues which can arise from drips and splashes when filling sprayers and mixing pesticides. Biobeds can also be used for the disposal of interior and exterior sprayer washings. Although Lined Biobeds need to be registered with the local environment agency (see below) they **do not need** a Groundwater permit.

CAUTION
Seek regulatory permission **before** building a Lined Biobed

Under the Agricultural Waste Regulations (May 2006), Lined Biobeds are now regarded as waste treatment systems and as such all Lined Biobeds require a waste management licence.
Farmers in England and Wales need first to read the EA Guidance and then register their farm with the EA (Form WMAW 01) and then apply for Exemption 52 using Waste Exemption Pack Insert May 2007. Both registrations are free. Further advice can be obtained from the Environment Agency's Agricultural Waste Line on **0845 603 3113**.

Different waste regulations apply in Scotland and Northern Ireland, exemptions for Lined Biobeds are available subject to local agreement from SEPA and NI-EA.

For more advice on Lined Biobeds please refer to: Best Practice Guide on Lined Biobeds; EA's Guidance on Lined Biobeds, the Lined Biobed Design Manual and **www.biobeds.info**

Crop Protection Association

The advice in this Guide was originally prepared after consultation with the UK environment agencies and leading researchers into pesticide handling areas. Research was funded by Defra, EA, CPA and SNIFFER

This Guide was produced by the Crop Protection Association as part of The Voluntary Initiative.

The Voluntary Initiative is a programme of measure agreed by Government to minimise the environmental impact of pesticides.

www.cropprotection.org.uk www.voluntaryinitiative.org.uk

The Voluntary Initiative