

Protection of Other Organism and the Environment

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Protection of the Environment and Other Organism

In the environment, pesticides can contaminate soil and animal feed on the ground, water, and -more rarely - air. This can result in the loss of domestic animals and birds, fish and beneficial insects and their larvae.

Every effort must be made to apply pesticides so that the local environment is not harmed.

Examples of practices to be followed:

- clean up major spillages on the ground by digging out the contaminated soil and putting it in bags.
- put all water used for washing protective clothing and equipment in drums, and dispose of it as contaminated wash water. Never wash these items in a river or stream.
- dispose of unwanted pesticide and empty containers in such a way that ground water or run-off into streams will not be contaminated.

Supplementary points:

- Serious environmental contamination is most likely to occur during mixing, and at the end of the days work. It is important that the mixing site be cleaned up at the end of the day and for the workers to wash after finishing work. If the equipment is taken back to a central location for cleaning, it should be treated as a pesticide container during transportation.

- Adequate disposal facilities for empty containers and unwanted pesticide must be available at the operational base or at some other site approved for the disposal of chemical wastes.

Protection of the Environment and Other Organisms- Disposal of Wash Water as a Diluent

There is no easy or completely satisfactory way to dispose of waste pesticides. Therefore, it is always better to try and avoid the problem in the first place. By careful reading of the product label, the operator should never mix up more product than is needed for a given application. However, there are always occasions when some pesticide waste will require disposal.

Wash water can be used to make up a dilution of the same pesticide on the next day that the pesticide will be used. But when the water is used for dilution, it should be measured as if it was water.

The wash water should be collected in a clearly marked drum with a tight lid. If the drum is transported, it should be treated in all respects as a container of pesticide.

Supplementary points:

- If sprayers have contained a formulation which has tended to be lumpy, problems can arise if the lumps are present in the wash water and subsequently in the water used for dilution. This can be avoided by allowing the wash water drum to stand for some hours before the water is used and emptying the drum slowly. Another option is to pass the wash water through a sieve as it enters the wash water storage drum.
- This method of disposal can also be used in cases where water for dilution is in short supply at the site of application and must be carried from the base. This often means that no water is available for washing at the application site. This situation need not arise if the water is first used for washing and then used for the final dilution of the day, leaving a sufficient quantity of clean water for the final wash after work.

Other information:

Unused dilute pesticide can be disposed of by diluting the spray **tenfold** and spraying it on the crop area or area which has just been treated. This method should not be used, however, if it is likely to damage the crop or a following crop or is likely to leave excessive residues on the crop. If spraying onto the crop is not possible, spraying into waste or fallow ground or land which is due to be cultivated (unless the product is a residual herbicide) can be carried out, taking care that the area is carefully selected to be away from dwellings, water bodies and livestock and ensuring that other people are warned and kept away from the site.

Protection of the Environment and Other Organisms- Disposal of Containers by Burying

Large pesticide containers are usually steel or cardboard drums, and smaller ones are aluminum bottles, and plastic bags and liners. All contain residues of concentrated pesticide, and present the same hazard to the workers handling them as if the workers were mixing the pesticide. The best way to dispose of containers is by returning them to suppliers (if suppliers in your country provide this service). Some countries have established collection centres where containers can be dropped off for disposal. If neither of these options is available, there are ways of disposing them. One is by burying.



All containers should be pierced or punctured before burying
(**except for aerosol containers**)

The hole (pit) should be dug in an area where the water table is always below the depth of the pit.



The pit should be deep enough so that when filled, the highest point of the buried containers should be more than 1/2 metre below the surface.

The pit should be dug more than 100 metres away from streams, wells or houses.

Supplementary points:

- It is difficult and often dangerous to crush or puncture metal containers. Therefore this method of disposal is most suited to paper drums and plastic containers and liners. It is not possible to decontaminate these containers and they **MUST** be destroyed. It is necessary to rinse them before burying.
- Addition of manure or other rotting organic matter to the hole before filling will assist microbial breakdown of the pesticide.
- If the containers cannot be disposed of immediately, store them securely to prevent misuse and away from children and animals.
- Always dispose of pesticide containers with consideration of the possible risks to other people, domestic animals, wildlife, crops and other plants, water supplies and foodstuff
- If an approved disposal site for chemical wastes is in the vicinity, all empty containers should be sent there.

Other information:

Do not use pesticide containers for food or drinking water for humans or animals because adequate cleansing is very difficult to achieve. It is everyone's responsibility to discourage this practice.

Recommended personal protection should be used when disposing of pesticide waste.

Protection of the Environment and Other Organisms- Disposal of Containers by Burning

This method of disposal can be used for boxes, card drums, plastic liners and other combustible materials, but should only be considered if a pit cannot be dug and there is no other way of disposing of the containers in an approved site for chemical wastes.

The smoke may contain poisonous fumes and the public must not be put at risk.

The following procedures must be followed:

- First empty the containers of any pesticide and rinse out plastic liners
- Dispose of the rinsings in the same way as wash waters
- Make the fire in a pit, at least 100 metres from any well, river or house
- At least one worker must stand by the fire until the containers have been reduced to ash
- The worker must be sure to stand at the windward side of the fire and avoid the smoke
- When all the containers are burnt, cover the ash with earth and refill the pit

Supplementary points:

- Aerosol canisters should never be punctured or burnt - they should be buried.
- The site must be fenced off and clear warning signs erected. The position of the site should be recorded for future reference.

Other information:

In some countries disposal by burning, except in an approved furnace, is prohibited.

Protection of the Environment and Other Organisms- Decontamination of Containers

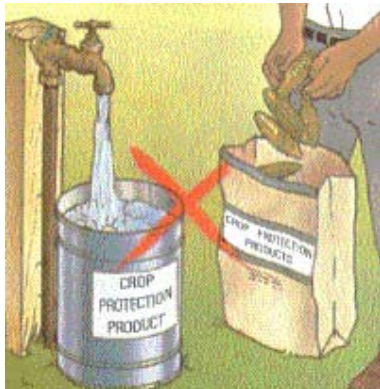
This method of disposal can be used for containers made of metal or rigid plastic and have contained pesticide concentrates of moderate hazard or less.

Containers made of polyethylene, and which have contained organophosphorous or carbamate pesticides cannot be decontaminated. These pesticides are selectively absorbed by the polyethylene.

Decontamination should always be carried out in a well defined and secure area.

The following procedures must be observed:

- Carefully empty out any remaining pesticide in the container and dispose of it safely
- Rinse the container carefully with at least half of its volume of clean water and dispose of the rinse as wash water
- Fill the container completely with clean water and leave to soak a minimum of 24 hours
- Repeat the operation for two more 24 hour periods
- Obliterate the label



The container should not be used for the storage of human or animal food or drink, and should be marked accordingly.

Supplementary points:

- Decontamination operations must be carefully supervised, and only conscientious workers should be employed in this task.

Other information:

Personal protection should be used during decontamination.

Protection of the Environment and Other Organisms- Disposal of Large Quantities of Unwanted Pesticide

The disposal of large quantities of unwanted pesticide is difficult and the method used will depend on national circumstances.

It should never:

- be put in any river, lake or sea
- be put in any landfill unless it has been specifically approved for the disposal of chemical wastes
- used for any purpose other than those stated on the label
- given to any person or organisation unless it is legal to dispose of it in this way, and for the other party to receive it



The following are some of the options:

- return it to the supplier
- incineration at a high temperature which will vary with the formulation

In highly exceptional circumstances:

- deep burial in a dry hole or disused mine
- walling up in a dry cave

Supplementary points:

- It should be realized that disposal of unwanted pesticide almost always involves significant expenditures, and this should be budgeted.
- All pesticides have a limited shelf-life, and the active ingredient deteriorates during storage. No pesticide should be used two years from the date of manufacture or formulation. If these dates are not on the label use the date the product was received by the dealer. If there has been a change in the physical form or colour of the formulation, its acute toxicity should be checked. The manufacturer or the formulator should be

consulted about this.

Other information:

More information on unwanted and obsolete crop protection products can be found in the following URLs:

Prevention and Disposal of Obsolete Pesticides:

http://www.fao.org/waicent/FaoInfo/Agricult/AGP/AGPP/Pesticid/Disposal/index_en.htm

Disposal of Obsolete Crop Protection Products: Country Progress Reports

http://www.croplife.org/library/position_papers/new/88.html

Identification and Management of Obsolete Pesticides:

http://irptc.unep.ch/pops/POPs_Inc/proceedings/lusaka/WODAGENE.html

Disposal of Obsolete Pesticides:

http://www.unescap.org/drpad/vc/conference/ex_pk_17_dop.htm