

Disposing of Unused Chemicals and Containers

Unused chemicals and their containers pose a problem of disposal; here are steps being taken in Maryland to solve this problem

by

James V. Parochetti, Ph.D.

In this age of environmental concern, it is important that great care and wisdom be exercised in using pesticides. First, this requires choosing the appropriate herbicide that will have a minimum impact on the environment. Then comes proper use and, finally, efficient disposal of empty pesticide containers and unused pesticide materials. *Nothing can do more harm to the pesticide industry or those who need and use pesticides than the neglect of the proper disposal of empty pesticide containers.*

In March 1970, the State of Maryland adopted the Maryland Pesticide Applicators Law and Regulations. The Law is administered by the Maryland State Board of Agriculture and receives counsel from the Maryland Pesticide Advisory Board. This Board is composed of representatives from several state agencies including Health, Water Resources, Natural Resources Institute, Agricultural Experiment Station, Agricultural Extension Service and the Maryland State Board of Agriculture.

One of the most pressing problems facing the Pesticide Advisory Board (PAB) was to provide guidelines for the proper disposal of empty pesticide containers, unwanted concentrated pesticides, and leftover diluted pesticide sprays. To provide guidelines on proper disposal, PAB established a task force of experts in the state of Maryland to formulate specific guidelines. The Pesticide Disposal Task Force was made up of representatives from the following state agencies: Health, Air Quality Control, Environmental Services, Water Resources, University of Maryland Agricultural Experiment Station and the University of Maryland Co-operative Extension Service. The U.S. Department of Agriculture was also represented on the task force.

The following guidelines have been adopted by the Maryland Pesticide Advisory Board and are to be considered as *interim* procedures on pesticide disposal. They reflect the latest thinking by various experts in this area. A copy of this total report can be obtained from: Maryland State Board of Agriculture, Office of the State Entomologist, University of Maryland, College Park, Md. 20742.

Problem Areas*

Pesticide disposal problems can be divided into several categories related to use. These categories are: (1) homeowners and others with similar needs; (2) large scale applicators, including public agencies and farmers; (3) retail and wholesale outlets; and (4) formulators. These categories were selected on the basis of similar characteristics inherent in each.

These groups are each characterized by the following: (1) amount and variety of pesticides used; (2) size of containers; and (3) areas involved in the application. The responsibility for properly disposing of pesticides and pesticide containers ultimately lies with the purchaser or owner. Only the first two categories will be discussed.

Homeowners and others

Homeowners, home gardeners, hobbyists, amateur flower growers, small nurserymen, small farm operators and some public agencies usually purchase pesticides in packages of less than 1 gallon or 2 pounds. Small amounts of surplus pesticides may accumulate. These materials are

*Information contained in the Final Report of the Disposal Task Force to the Maryland Pesticide Advisory Board, June 28th 1971.

shelved until used or disposed of during 'spring cleaning', when there is a change in occupancy or because of safety considerations.

Individually there is a minimum of potential hazard, but collectively this group *may generate* a substantial quantity of surplus pesticides or containers and it is here that a potential environmental hazard may occur.

Guidelines for small users

1. Purchase pesticides *only* in quantities which can be used during the current season.
2. Wash hands after handling pesticides or pesticide containers.

Where surplus pesticides are concerned:

Do's

1. Store materials in a locked, safe storage area in the original container. Check containers periodically to insure against leakage or breakage.
2. Dilute according to recommended mixing instructions and spread uniformly on soil where water contamination will not occur.
3. Whenever used, apply in strict accordance with label directions.
4. Wrap package containing pesticide in at least six layers of newspaper and place it in the garbage just before pickup.

Don'ts

1. Do not dispose of in sink, toilet or floor drains, gutters, roadside ditches, sanitary sewers, storm sewers, streams, lakes or ponds.
2. Do not burn pesticides or pesticide containers.
3. Do not bury where contamination of water may occur.
4. Do not dispose of in unauthorised dumps or sanitary landfills.
5. Do not organise community surplus pesticide pickups, unless a professional is in direct supervision and adequate disposal facilities are immediately available.

Empty containers

Do's

1. Wrap containers heavily in at least six layers of newspaper and place in the garbage just before pickup.
2. Where trash collection is not available, bury in an isolated area at least 500 feet from any well or surface water, such as lakes, ponds, etc. If possible, bury to a depth of at least 18 inches, in a well-drained soil; break glass or puncture metal containers (except aerosol) and bury promptly. Paper containers should be buried intact and covered.

Dont's

1. Do not bury in sand or gravel or other porous substances where ground or surface water may be contaminated.
2. Do not leave containers where children or pets may come in contact with them.
3. Do not reuse.
4. Do not dispose of containers in ditches, erosion areas, streams, ponds or rivers.
5. Do not burn pesticide containers.

Large-scale Applicators†

Farm operators, custom applicators, pest control operators, arborists, public agencies and industrial weed control operations usually purchase large quantities of many different pesticides through co-operatives, farm supply stores, chemical companies or directly from wholesale distributors. Generally, purchases are made in 5-gallon containers or 2- to 10-pound bags, and some purchases are made in 30-gallon or 55-gallon drums or 50- to 100-pound bags.

Commercial applicators usually purchase only what is needed. Surplus pesticides or pesticides carried over from one year to the next are stored or returned to the wholesale or retail outlets. Inventories of old or faulty pesticides are minimal.

The use of medium size containers (5-gallon pail and 2- to 10-pound bags) generates one of the

†*Golf Courses fit in this category.*

major problems of disposal to this group. Extra or excess tank mix and rinse water from cleaning operations poses a serious problem.

Public agencies apply varying amounts of pesticides to control weeds, insects, and rodents. Spills and mishandling are of concern to this group. Surplus pesticides may be stored improperly; containers may develop leaks or may be left open and the concentrate deteriorates.

Guidelines for large-scale applicators

I. Disposal of empty containers

A. Pertains to all empty containers except 30- and 55-gallon drums.

Do's

1. Empty all containers thoroughly.
2. When empty, rinse containers which held liquids several times with water (or other suitable diluent) and use rinse for dilution of spray mixture.
3. When empty, flatten dry containers to facilitate handling, temporary storage and disposal.
4. Hold empty containers prior to proper disposal, in a secure area where children or animals will not come into contact with them, and where any drainage or particles from emptied containers will not be a hazard.

Don'ts

1. Do not reuse containers for any purpose unless reprocessed (detoxified) by a commercial processor, or in accordance with the label.
2. Do not burn containers unless burning is done in a high temperature incinerator (1800 degrees F).

B. Pertains specifically to glass, light metal, plastic, paper or other single trip containers.

Do's

1. When thoroughly emptied and/or rinsed, the containers should be rendered unusable by breaking, flattening or perforating and then disposed of through normal trash collection or buried in an isolated area at least 500 feet from any well or surface water such as lakes, ponds, streams, etc.

Don't

1. Do not reuse for any purpose.

C. Pertains specifically to 30-gallon or over drums (heavy metal, heavy plastic, etc.).

Do

1. When thoroughly emptied and rinsed, return to commercial reconditioning processor

Don'ts

1. Do not reuse any pesticide container for food, feed or watering purposes.
2. Do not reuse any pesticide container with specific instructions prohibiting reuse.

II. Disposal of unused pesticide concentrates

Do's

1. Limit your inventory of unused concentrated pesticides so that a complete inventory turnover occurs within two years.
2. Store properly.
3. Use the pesticide properly. If surpluses accumulate, attempt exchanging with another applicator for pesticides you need or return unopened packages to the distributor or dealer.
4. Dilute pesticides with a liquid carrier and apply uniformly at recommended rates to a non-target area owned or rented by the applicator where the pesticide will be detoxified by photodecomposition and microbial activity.

Don't

1. Do not dispose of large (5 pounds or 1 gallon or more) amounts in landfills, dumps or directly on the ground surface because of the pollution hazard.

III. Disposal of unused diluted pesticides

Do's

1. Applicators should take particular care in preparing the last tank of spray mixture to be used for each job. Calculate closely the amount required to complete the job.
2. All but a few pesticides can be maintained in a dilute solution for a considerable

length of time. The user should ascertain if this is true for the pesticide he is using, and if so, the dilute solution can be stored in a sprayer tank until the next day, or stored in a properly labelled container until the spray operation.

3. If the pesticide user has completed use of a particular chemical, or the solution cannot be kept for the length of time desired, the best means of disposal is reapplication to the target area in a very dilute solution. This can be done by further diluting the material with water (or other solvent being used) at least 10:1 and then spraying the diluted material over a portion of the target area which has been previously treated. (Avoid this method with exceedingly excessive amounts which could result in phytotoxicity, over-tolerance residues or other undesirable results.)

Note: For golf course purposes, Dr. Paul M. Alexander does not subscribe to this recommendation, especially where greens, tees and fairways are concerned.

Don'ts

1. Do not dump leftover dilute pesticides.
2. Do not dump onto the ground of farmsteads or work areas where humans or animals may contact it.

IV. Disposal of waste and wash from clean-up

Do's

1. Every effort should be made to clean equipment on the site where application of the pesticide was made, and to dispose of clean-up wastes within the target area.
2. Construct a securely fenced area on the farmstead or at the central operations area used by other applicators, especially for the purpose of cleaning application equipment. One suitable method is to excavate an area of sufficient size to accommodate the amount of waste involved, for example 12ft. by 12ft. to a depth of about 1ft. This excavation should be filled with crushed rock of approximately 1in. size. Wash from equipment can be drained directly into this area with little potential of contact by humans or animals. Locate where surface water will not drain through area and ground water will not be affected.
3. Use same precautions in clean-up as used in handling and applying the pesticide.

Don'ts

1. Do not clean equipment in areas where residue from clean-up can contaminate or harm persons or animals using the area for other purposes.
2. Do not clean equipment or discard clean-up wastes in areas where contamination of wells, ponds, streams or other ground or surface water is likely.

With grateful acknowledgements to the Golf Superintendent

CLASSIFIED ADVERTISEMENTS

For Hire. Sisis Autoturfman Aerator, £25 per week – do it yourself. For contract prices telephone **Burnell**, Eaglescliff 780647.

Used Golf Balls Bought. Any quantity. Price 20p per dozen. Solid and perished balls no value. **Sparkbrook Golf Ball Co. Ltd.**, 29 Highgate Road, Birmingham 12.

**LAWN
MOWER
GRINDERS**

A comprehensive range of superior machines designed and built to suit operators' requirements. For brochure and full details contact us now.

ATTERTON & ELLIS LTD
Dept. B.G.G. Iron Works, Haverhill,
Suffolk. Tel: Haverhill 2312/3.



**DEEP AERATION BY SUB-AIR
MACHINE
AT ANY TIME OF YEAR
NO SURFACE DAMAGE**

We are unaware of any other machine which penetrates to seven inches yet keeps the greens undamaged and in play

Cambridge Soil Services Limited
Girton Road, Cambridge

Specialists in science based Drainage Tel. 76002