

Managing and Disposing of Pesticide Wastes – Water Management Guidelines for
Nursery/Floral Producers
Courtesy of the Texas Cooperative Extension

Management and disposal of pesticide wastes are a major problem for greenhouse and nursery producers. Improper handling of these chemicals poses a real threat to the environment, as well as to the health and safety of laborers. Excess application or improper disposal of "left over" mixtures, undiluted chemicals, or even pesticide containers can lead to potential contamination of surface and groundwater. However, the risk of a serious incident can be reduced if proper management and disposal techniques are used.

Hazardous agricultural wastes are defined in the 40 Code of Federal Regulations (parts 261.31 - 261.33) as having one of the characteristics of a hazardous waste. Pesticide wastes that are regulated are those which:

1. Contain a hazardous sole active ingredient;
2. Are hazardous mixtures;
3. Are acutely hazardous waste; or
4. Are hazardous waste as identified by an EPA number.

In most areas, pesticides are called hazardous, acutely hazardous, or regulated wastes if they require specific disposal procedures. Disposal of these chemicals usually requires completion of a Uniform Hazardous Waste Manifest before the chemicals can be shipped off-site for treatment, storage, or disposal. This can be costly, so it is important to minimize amounts of hazardous waste.

The first step in minimizing chemical waste is to determine the optimum means for pest control. Integrated pest management (IPM) techniques have been developed to provide needed protection, with reduced use of chemical pesticides. In addition, biological control alternatives should be evaluated. If a pesticide must be used, the following management practices will help minimize waste disposal problems:

1. Select the appropriate pesticide;
2. Read the label carefully;
3. Apply the pesticide properly;
4. Clean up thoroughly;
5. Store the pesticide securely; and
6. Dispose of containers safely.

With these basic guidelines in mind, several waste minimization techniques can be implemented.

Storage

Pesticides should be stored in a locked, dry, cool, well-ventilated area. This will ensure that the chemical will maintain its active ability for the period of time it is stored before use. Safe storage will also help avoid non-authorized personnel from coming into contact with potentially harmful materials. The storage area should be equipped with clean-up supplies, such as clay absorbents, in case a spill occurs. Water, food, or feed should not be stored in the same locked areas as pesticides. Safely storing pesticides will help minimize wastes by preventing spills and loss of chemical activity from degradation by heat, sunlight, or other environmental factors.

Application

Improper pesticide application can create serious waste management problems. Misapplication limits a product's ability to control the target pest(s) and as a result, additional pesticide applications are frequently required. These subsequent applications significantly increase the potential for contamination. Overestimating the volume of pesticide required represents another waste management problem. Pre-application calculations should be conducted to accurately determine the amount of pesticide needed for a specific area. This will help avoid excessive, left over mixture that will later have to be disposed of.

Equipment should be tested frequently to determine if it is in proper working order. A trial run with water can be used to determine the spray pressure needed to cover a specific area at the labeled rate. Check all nozzles to make sure they are dispersing similarly. Clogged nozzles or an improperly pressurized boom will cause uneven distribution, resulting in over or under application.

Cleanup

All remaining mixture should be disposed of according to label instructions. For specific information on the state regulations in your area contact your local Extension office. Storing excess mixture is not recommended. Many pesticides degrade more quickly when mixed with water or oil. This may weaken or even completely inactivate mixtures saved for later use. Also, these mixtures are more subject to temperature and sunlight factors, which can hasten pesticide degradation. Stored mixtures also present spill and leakage hazards.

All equipment should be triple rinsed both inside and out to minimize pesticide residues. If equipment is rinsed on a loading pad, a closed storage system could be used to collect rinsate. If a closed system is not available, storage tanks or containers may be used to catch the rinse water. If this material is stored, keep accurate records on the content of each tank. Never store assorted wastes in the same tank.

Rinse water should be applied to an area that would do some good in controlling the target pest(s) but would not create a contamination hazard. Do not apply rinse water to

areas previously treated. Reapplication over such an area could increase the potential for contamination or result in longer persistence of the pesticide in that area.

Container Disposal

In many areas, specific requirements exist for the disposal of pesticide containers. Check with your county Extension office for state regulations. Typically, all containers should be triple rinsed with a solvent capable of removing any remaining content and the rinsate disposed of according to the disposal instructions on the label. Empty containers should then be punctured, crushed, or otherwise rendered incapable of holding liquid. These containers can then be disposed of at a sanitary landfill or returned to the manufacturer or formulator.