

COST-EFFICIENT METHODS FOR NURSERY COMPLIANCE WITH ENVIRONMENTAL REGULATIONS FOR HAZARDOUS MATERIAL STORAGE

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CHEMICAL USE AND REGULATORY AUTHORITIES

Nursery growers routinely rely on regulated chemicals during plant propagation and production. Fungicides, insecticides, herbicides, fertilizer materials, and fuel are all resources that growers use to profitably produce high quality plant material.

Public concern for protecting the environment has resulted in the establishment of governmental authorities empowered to develop rules that regulate chemical storage and use. A primary concern is the contamination of ground water by hazardous materials including pesticides, fertilizers, and fuels. When introduced into the soil, these chemicals can move downward into the water table and eventually can be drawn toward wells supplying public drinking water.

The development of regulations on hazardous material storage and use is required by the federal government, but has been delegated to state and local governments. In some areas this responsibility has been assumed at the state level, such as the Department of Environmental Protection in Connecticut. In other areas it is delegated to county governments, such as the Environmental Quality Control Board in Broward County, Florida. The specific regulations are developed locally and can vary greatly from region to region.

The regulatory authorities are often composed of a policy or advisory board representing a cross-section of the community, including agriculture. This presents the opportunity for nursery growers to become involved in the development of regulations, with the goal of having those that are both effective and reasonable to implement.

ENVIRONMENTAL REGULATIONS

The establishment of environmental regulations has had many ramifications. Permits for storage and use are required and inventories of chemicals on hand are often required. Employees must be provided with protective clothing and equipment and are protected by the "right-to-know" law. For many nurseries, the most costly and difficult aspect of compliance is the storage of chemicals.

In areas where potential for ground water contamination is high, regulations governing chemical storage may stipulate the

requirement for double containment. To achieve double containment, a pesticide or other hazardous material packages must be stored within a container that must also be within a container. The objective of this system is to greatly reduce the risk of ground water contamination in the event of a chemical spill by providing two containment areas. Accomplishing double containment has the potential to be very expensive because each containment must be capable of catching all materials stored in the area.

LOW-COST COMPLIANCE CASE STUDY

The challenge of low-cost compliance is to modify existing storage areas to achieve compliance with a minimum of new construction. The following description is a case study of a storage system which was brought into compliance with very little expense to a grower, located in Broward County, Florida. This application may be adapted to meet the specific requirements of other regions.

This nursery grower had a below-ground storage tank for gasoline storage, an above-ground tank for diesel storage, and a concrete block shed with a cement floor and garage door for pesticide storage. With the promulgation of new regulations, no part of this storage system was in compliance.

The nursery grower decided to abandon the below-ground gasoline tank by draining it and filling it in with concrete. The high cost of replacing the tank was not deemed economical by the grower. However, the above-ground diesel tank and the pesticide storage area were brought into compliance at very little expense.

The diesel tank was moved into the pesticide storage building to consolidate the locations of hazardous materials. A concrete block retainer wall built eight inches high inside the building, forming a simple retaining wall (Figure 1). This formed the first containment area.

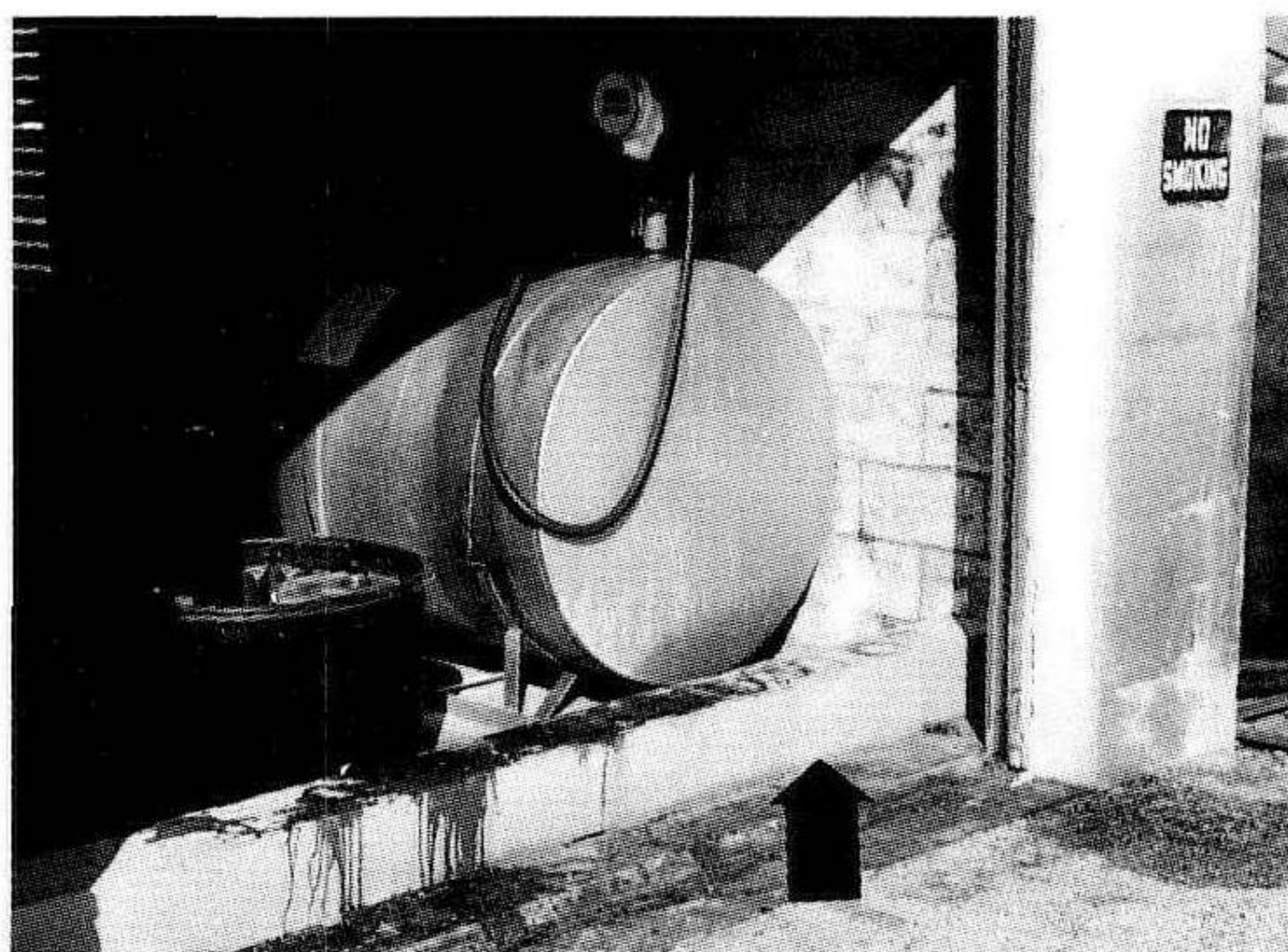


Figure 1. Pesticide storage building brought into regulatory compliance with the construction of a retainer wall across the opening to the building (indicated by arrow).

The second containment required for pesticides was also achieved with a minimum of expense. This grower specially ordered large nursery containers without drainage holes (Figure 2). The bottom of the container was covered with a layer of absorbent material, such as cat litter or sawdust, and the pesticide packages were placed inside. This system is both effective and inexpensive. A similar containment could be achieved by sawing a 55-gallon drum in half and sealing the inside with epoxy or other liner. These case studies have been used in training programs to satisfy in-service requirements for extension agents (1,2).

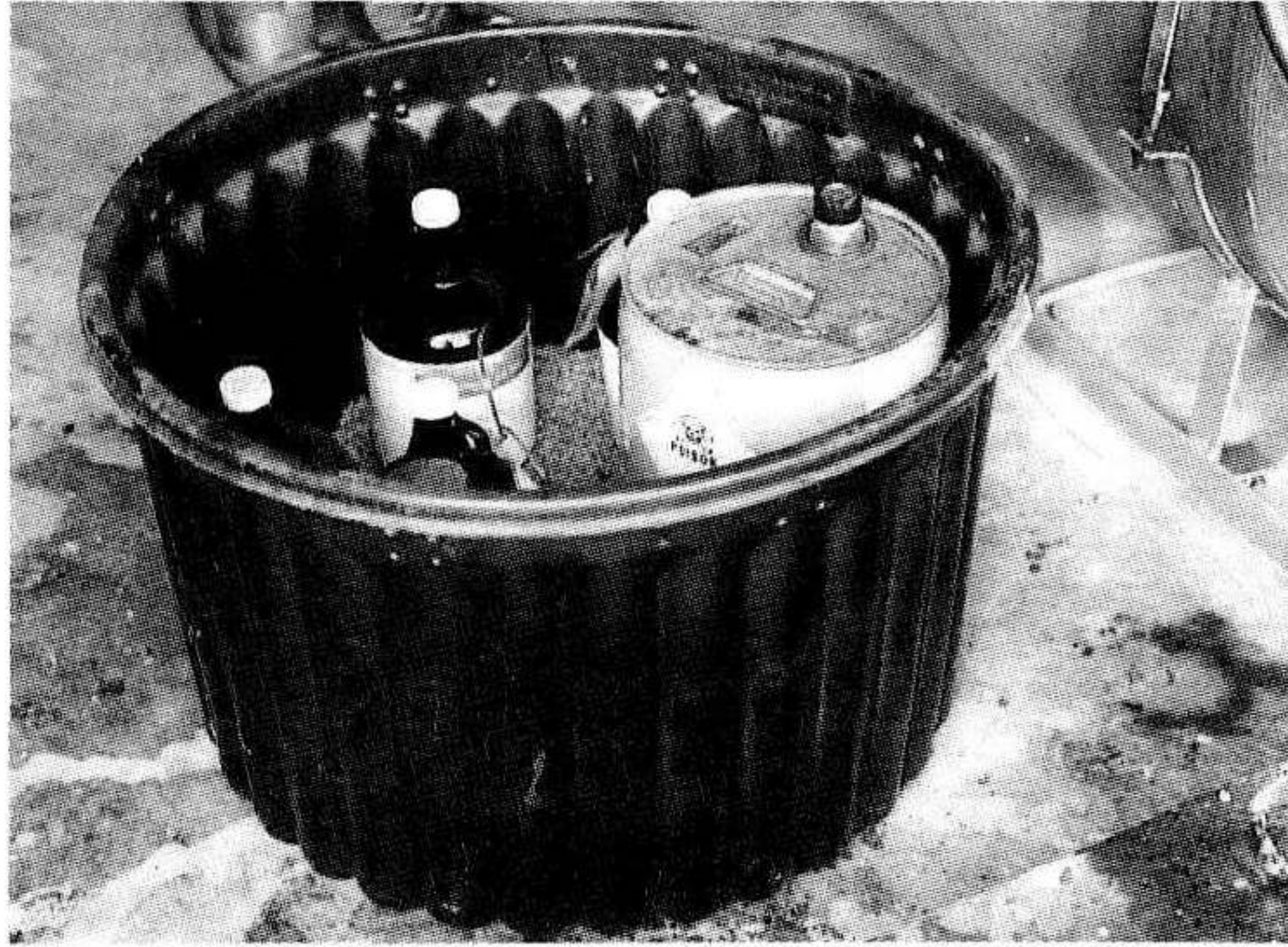


Figure 2. Double containment of pesticides is achieved by placing the pesticide packages inside a large nursery container, specially ordered without holes, with the bottom covered with absorbent material.

SUMMARY

As hazardous material users, nursery growers have liability for contamination to areas nearby the nursery. It is important for growers to become aware of environmental regulations affecting them and to strive for compliance to reduce their risk. In many cases compliance with regulations can be effectively achieved with minimum expense to the nursery grower through the use of commonly available materials.

LITERATURE CITED

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