

Unwanted Agricultural Pesticides: State Disposal Programs

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Abstract: Millions of pounds of unwanted pesticides have accumulated in barns throughout our Country. The potential environmental and health risks posed by this situation has garnered public attention and governmental action. The federal government has revised its Universal Waste Rule so that it is easier to dispose of unwanted pesticides rather than simply banned pesticides. Nearly every state has initiated efforts to collect and dispose of accumulated pesticides in a safe manner. While the possession of unwanted pesticides generally is not illegal, producers need to follow requisite legal requirements and dispose of pesticides properly to avoid legal infractions. To assist producers, the implementation of a permanent apparatus is advised for the disposal of unwanted pesticides. Through an evaluation of state collection endeavors, this paper identifies important features that may be offered as initiatives for developing better responses for eliminating sources of potential contamination.

Key Words: hazardous waste, pesticide, pesticide collection program, universal waste rule

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The disposal of hazardous waste is a subject that draws public attention. Firms seeking sites for the manufacture or disposal of hazardous materials may be met by local citizen opposition referred to as NIMBY, Not in My Backyard (Groothuis and Miller, 1994; Mabry, 1993). Smith and Desvousges (1986) show that inequities concerning the location of LULUs, facilities dealing with hazardous wastes and locally undesirable land uses have been the subject of considerable research. Been (1994) and Bullard (1994) proffer suggestions to address these inequities, and an environmental justice movement has exposed practices that might constitute environmental racism.

While many agricultural producers may feel that NIMBY, LULUs and environmental justice are environmental issues that generally do not affect agriculture, it is becoming increasingly clear that the countryside has its own hazardous waste problem. Jones (1993) reports that millions of tons of unwanted agricultural pesticides have accumulated over the past 60 years in thousands of barns throughout rural America. The Minnesota Department of Agriculture estimated in 1994 that approximately 3 million pounds of waste pesticides were stored in the state (Spitzmueller, 1995). The Wisconsin Department of Agriculture, Trade, and Consumer Protection (1991) estimated that nearly 4 million pounds of waste pesticides were present in the state.

As agricultural producers and persons inheriting property from former pesticide users are storing unwanted pesticides rather than disposing of them, governments have become concerned about the environmental threat posed by these materials. The Environmental Protection Agency

(EPA) revised the federal Universal Waste Rule to address this problem better (Federal Register, 1995). State legislative and administrative actions have been enacted to address the disposal of unwanted pesticides. Cabbage (1996) and Spitzmueller (1995) report that forty-six states have engaged in agricultural pesticide collection efforts to help owners of unwanted pesticides with disposing of them safely.

The disposal of unwanted pesticides presents agricultural producers a challenge. Most producers are not aware of the legal requirements for disposal, and often, a convenient method for safely disposing pesticides is not readily available. Survey results reported by DeWitt (1997), Karnatz (1991), and Spitzmueller (1995) of farmers from Iowa, Minnesota, and Vermont, respectively, suggest that most persons with quantities of unwanted pesticides continue to store them due to the absence of a viable disposal option. Usually, producers also are unwilling to incur the full cost of legal disposal. Therefore, without government intervention, unwanted pesticides are likely to be left in their current storage locations. Some, however, end up being disposed of in a landfill or dispersed into the environment where they may cause a pollution problem.

Despite the numerous collection efforts in nearly every state, producers in many areas have not had an opportunity to dispose of unwanted pesticides due to the localized and targeted nature of many collection programs. Moreover, the lack of details of legal requirements and the new options available under the Universal Waste Rule has impeded more comprehensive efforts. This paper examines the regulatory framework regarding the legal disposal of pesticides to show how states might augment their collection efforts. To provide all agricultural producers possessing unwanted pesticides a disposal option, states may need to revise their programs to cut

costs and increase their efforts to provide a more convenient disposal outlet. Through the examination of the revised Universal Waste Rule, an alternative federal mandate providing for the disposal of pesticides, ideas for greater flexibility with fewer costs are offered to help states in providing for pesticide disposal.

The second section evaluates state statutory and regulatory provisions that provide for distinct agricultural and household collection programs. With these regulatory parameters, questions about agricultural producers incurring liability for the storage or disposal of pesticides are addressed. Due to potential problems involving the storage of pesticides, producers are advised to dispose of them in a safe and legal manner. Another finding is that the implementation of a permanent apparatus is needed to provide for the disposal of unwanted pesticides address the problem of stored unwanted pesticides.

Federal Regulatory Mandates

The regulation of pesticides by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is well known (Fisher et al., 1994a, 1994b, 1994c). An initial question is whether regulation under FIFRA precludes further regulation under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA)? CERCLA provides that the storage of registered pesticides is not covered by the CERCLA notification requirements respecting released substances (U.S. Code, 1994, title 42, § 9603). Farmers disposing of waste pesticides through a triple-rinse procedure of emptied pesticide containers are excepted from standards applicable to generators of hazardous wastes (Code of Federal Regulations, 1996, title 40, § 262.70). Yet, the regulatory provisions

defining hazardous wastes, especially the special RCRA regulations for the universal waste management of pesticides (Code of Federal Regulations, 1996, title 40, part 273), reveal that federal hazardous waste regulations apply to agricultural pesticides in certain situations. The RCRA provisions for hazardous waste apply to the disposal of liquid and solid pesticides.

RCRA defines hazardous waste as a special kind of solid waste, with solid wastes including discarded materials that are in a liquid or semisolid form (U.S. Code, § 6903). Discarded materials encompass materials that are abandoned, considered inherently waste-like, and other qualifying recycled materials. A material abandoned by being disposed of is a waste under the RCRA regulations. Hazardous wastes are solid wastes with characteristics that cause them to present special dangers or potential hazards to human health or the environment. Given the potential hazards of unwanted pesticides to humans and the environment, the disposal or abandonment of these materials is within the definition of hazardous wastes covered by RCRA.

The cleanup of pesticides on a site also may be covered by CERCLA. Litigation in four cases has shown the disposal of pesticides to be waste products subject to hazardous waste regulations. The deposition of agricultural chemicals at a contaminated site in *North Carolina v. W.R. Peele, Sr. Trust* (1995), and the improper disposition of pesticides containers in *Richland-Lexington Airport v. Atlas Properties* (1989), created liability under CERCLA. In *Voluntary Purchasing Groups, Inc. v. Reilly* (1989), potential liability under CERCLA for a dump at which pesticides had been disposed was recognized in an appeal of a declaratory judgment action. The defendants in *United States v. Almy Brothers, Inc.* (1994) were liable for the disposal of pesticide wastes by a previous owner due to their ownership of the dumping site.

Under Subtitle C of RCRA, the Environmental Protection Agency has adopted regulations that identify hazardous wastes and has prescribed regulations that espouse human and environmental safety. Parts 260 through 272 of the Code of Federal Regulations (1996) set forth detailed regulations in for the disposal of hazardous wastes, known as the Subtitle C requirements. Person collecting wastes are hazardous waste generators. As such, the collector will need an EPA generator identification number, maintain a contingency plan, conduct employee training, and prepare a manifest for each shipment of collected materials. Generators also must use approved hazardous waste transporters to take the materials to a designated hazardous waste treatment, storage, and disposal facility.

Due to the prevalence of many persons with relatively small quantities of common hazardous waste, relaxed regulations for universal wastes were prescribed in Part 273 of the Code of Federal Regulations (1996). Three major categories of hazardous wastes have been classified as universal wastes: pesticides, batteries, and thermostats. While at one time only banned pesticides meet qualifications of the Universal Waste Rule, since 1995 stocks of unused pesticide products collected and managed as part of a waste pesticide collection program also qualify to be treated as universal wastes. With the less onerous regulatory provisions of the Universal Waste Rule, the EPA estimates annualized savings of \$76 million for generators of pesticides (Federal Register, 1995).

Under the relaxed rules of Part 273, agricultural producers taking pesticides to a collection program do not have to meet the paper work normally required of generators disposing of hazardous waste. Persons managing agricultural pesticides with a collection program qualify as handlers of universal wastes. Under Part 273, handlers are categorized as small and large quantity

handlers of universal waste, and separate provisions define standards for each category. Part 273 sets forth fewer burdensome requirements for handlers than apply under the Subtitle C requirements concerning employee training, a contingency plan, hazardous waste biennial reports, transport, storage, and manifests for each shipment of hazardous waste (Federal Register, 1995).

Universal waste handlers who do not accumulate more than 5,000 kilograms of universal waste at any time qualify for the standards set for small quantity handlers. As such, they are not required to notify the EPA of handling activities, do not need to use a hazardous waste transporter, and are not required to keep records of shipments of universal waste. By qualifying as a small quantity handler under the Universal Waste Rule, the names of participating agricultural producers may remain anonymous, as records of who brought pesticides to a waste collection program are not required. Large quantity handlers of universal wastes operate under more stringent requirements than apply to small quantity handlers, but are not subject to the requirement of a manifest.

Both large and small quantity handlers must send or take universal waste to another handler, a destination facility, or a foreign destination. At the destination facility, the universal waste will be treated, recycled, or disposed of properly. In this manner, the Universal Waste Rule provides for the safe disposal of universal waste, without all of the requirements associated with the normal disposal of hazardous wastes. As the Universal Waste Rule applies to state programs collecting unwanted pesticides, as individual states adopt state universal waste provisions, they will remove some barriers and expenses associated with the safe disposal of unwanted pesticides.

With the adoption of universal waste provisions, current efforts of providing for the safe disposal of stored unwanted pesticides should be accelerated. For rural areas, up to 5,000

kilograms of pesticides may be collected and transported to a destination facility without notifying the EPA, without the expense of a hazardous waste transporter, and without detailed records of the wastes. Moreover, small collections of up to 5,000 kilograms may be repeated so long as there is never an accumulation of more than this amount. Thus, a program can probably provide for the collection of thousands of pounds of pesticides under the relaxed provisions of the Universal Waste Rule if there is never an accumulation above this amount. In the alternative, a program could be a large quantity handler and still not need to employ a manifest.

State Regulatory Oversight

State pesticide collection efforts have proceeded under the authority of a variety of regulatory provisions (Table 1). Under existing state legislation regarding pesticides and hazardous wastes, a state has the authority to engage in pesticide collection efforts. In many cases, Table 1 shows that special administrative rules have been adopted to facilitate the state's pesticide collection program. However, several states have enacted specific legislation authorizing pesticide collection and disposal programs (Table 1).

State pesticide collection programs for unwanted pesticides may be divided into two categories; agricultural programs and household programs. The most significant category of pesticide collection and disposal program for waste pesticides consists of those efforts that address agricultural producers, as most unwanted pesticides are held by persons who purchased them to use in their farming activities (Mississippi Code Annotated, 1996; Washington Administrative Code, 1993). While several of these programs are permanent, many are targeted or temporary efforts dependent upon the availability of funds. Due to the costs of pesticide

programs, the Pennsylvania program limits participation to farmers (Pennsylvania Code, 1993). Some agricultural programs basically allow all noncommercial and nonindustrial possessors of pesticides to dispose of pesticides under the state collection program (Minnesota Rules, 1997; Washington Administrative Code, 1996). A few programs encourage commercial and industrial firms to participate (Nevada Department of Business and Industry, 1996). For example, in 1996 Wisconsin extended its pesticide collection program so that golf courses, cooperatives, landscape contractors, and aerial applicators could participate (Wisconsin Department of Agriculture, Trade, and Consumer Protection, 1997).

A second category of state programs consists of hazardous materials collection provisions, often called household programs, that exist in more than 20 states (Iowa Department of Natural Resources, 1995). Household programs may be differentiated into programs that exclude participation by agricultural producers and programs that include participation by agricultural producers. Household programs that restrict collection to household materials fail to recognize the need to provide for the safe disposal of agricultural pesticides (California Health & Safety Code, 1997; Illinois Compiled Statutes Annotated, 1997, title 415, sections 90/1 to 90/7).

Household hazardous materials programs in some states facilitate the acceptance of limited quantities of agricultural pesticides. Agricultural producers may be allowed to participate due to a statutory description or definition (Iowa Code Annotated, 1990). In the alternative, state administrative rules defining small quantity generators may enable farmers to participate (New York State Department of Environmental Conservation, 1993). Due to their acceptance of both agricultural pesticides and household hazardous materials, household programs are convenient and may be more economical than targeted or temporary programs. A single administrative and

physical structure provides for the safe disposal of both household and agricultural pesticides, and a steady volume of waste may allow for disposal at a lower price per pound than temporary programs. As household programs are ongoing, they also provide a permanent response for the continued generation of small quantities of unwanted pesticides.

Producer Liability Concerns

Many producers who have unwanted pesticides are concerned about the liability issues that accompany their possession and disposal. Although prosecutors have not elected to prosecute agricultural producers who have breached a regulatory provision concerning the storage pesticides, three potential legal issues may be identified. First, in some instances it could be found illegal for an agricultural producer to possess unused pesticides. Second, if a mishap were to cause a stored pesticide to cause injury, a producer could incur liability. This involves liability for accidents and possible regulatory violations. Third, given that the disposal of unwanted pesticides involves hazardous waste, when producers go to dispose of their unwanted pesticides, they need to meet the requirements of federal hazardous waste law.

To ease the concern about liability, some states have carefully positioned their programs as amnesty programs and have taken special efforts to maintain the confidentiality of participants. Amnesty is especially important when a program requires the registration of participants. By touting that a pesticide collection program provides amnesty, producers are more likely to feel that the program offers a viable method to dispose of their unwanted pesticides legally. While this perception may be important, the program officials making promises concerning amnesty may lack the authority to grant such dispensation.

Confidentiality often involves precluding state and federal governmental officials from learning who possesses what pesticides. While registration frustrates complete confidentiality, preventing a list of registrants from being submitted to state or federal officials may be possible. A county or state cooperative extension service or another person may be employed to collect the registration forms and delete the names before forwarding the forms to the state officials. In this manner, a program may maintain some confidentiality to assuage the fears of producers.

Possession of Unwanted Pesticides

Possession of unwanted pesticides by agricultural producers may be expected, and the storage of unused pesticides is an anticipated aspect of pesticide usage. If the pesticides were obtained when they were registered, the subsequent cancellation of their registration generally does not cause their possession by an end user to be illegal.

A state may, however, have regulations that alter this response. New York and New Hampshire have administrative rules that require the disposal of some unwanted pesticides by returning such pesticide to the supplier, taking it to a hazardous waste facility, or by consigning it to a state pesticide collection program (New Hampshire Code of Administrative Rules, Pesticides, 1996; New York Compilation of Codes, Rules & Regulations, 1995). The New York rules only apply to persons with more than regulatory threshold amount that varies given different characteristics of pesticides. The New Hampshire provisions apply to obsolete, banned, and unregistered pesticides. Both statutes use the word “shall” in directing the disposal so that they should be read as mandatory. By that, these rules suggest that persons who store an unused pesticide with no intention of using it could be violating state law.

Mishaps or Accidents Involving Stored Pesticides

Producers must use care to ascertain that their stored pesticides do not cause injuries to a person or the environment. Several potential actions, other than the unlawful disposal already noted, may be identified. Perhaps the most obvious is negligent storage whereby a child or another person accidentally comes into contact with the stored pesticide and is injured. Given that many agricultural pesticides are stored in unlocked buildings, such an accident is possible and could subject the owner of the property to liability under negligence and state statutory law. The possessor of the pesticide could be negligent due to the improper storage of a hazardous material. Most states also have a statute or regulation to the effect that pesticides are to be stored in a secure place (Ohio Administrative Code, 1984; Washington Administrative Code, 1996). A producer could thus incur liability under a regulation provision.

Producers may also incur liability for the deterioration or loss of a label on a pesticide container. Again, liability could be premised on negligence, but a more likely cause of action would exist under a state statute or regulation (Massachusetts General Laws Annotated, 1991). For many situations, the removal of a label from a pesticide container, whether willful or accidental, violates a statutory or regulatory command. Thus, if age causes the deterioration or oblivion of a label, the possessor may be violating the law.

Meeting Disposal Requirements

Another concern is how do producers meet the requirements of hazardous waste law in disposing of unwanted pesticides? Cabbage (1996) reports of communications by officials implementing collection programs indicating that producers may be reluctant to participate in a

collection program due to the fear that they are violating the law by possessing unregistered pesticides. The existence of alternative hazardous waste disposal provisions may compound the comprehension of disposal requirements. At the same time, the moderate requirements of the Universal Waste Rule and the considerate undertakings by government pesticide collection programs suggest that the major problem is communication. Collection programs are a preventive measure to remove a potential dangerous situation, rather than additional governmental oversight. Convincing producers of this objective might increase participation in the programs and increase the safe disposal of unwanted pesticides.

Producers who want to dispose of pesticides do have responsibilities. Unwanted pesticides become subject to federal hazardous waste regulations when the possessor decides to dispose of or abandon the unwanted pesticide. At that point a pesticide will be considered to be a hazardous waste. While the long-term possession of a banned pesticide could create a presumption that such material is a hazardous waste, no legal action against a producer-possessor has been reported. Rather, when a producer delivers an unused pesticide as part of a waste pesticide collection program, it becomes a waste that is subject to federal hazardous waste regulations. It must be disposed of pursuant to either the normal hazardous waste provisions or the Universal Waste Rule.

State collection programs have proceeded with an operational mode whereby the government functions as the generator and meets the requirements for the disposal of the hazardous materials. Under state Universal Waste Regulations, collection programs would proceed with the government as a handler. Under these programs, producers do not need to become involved in the paperwork. Rather, they will need to follow the directions for the

collection program and, usually, safely transport the material to the collection site. If a producer has a pesticide without a label, including unknown pesticides that may have been inherited from a previous owner, the producer will need to act accordingly to have the material sampled so that proper disposal may be arranged.

Moving Toward a Permanent Program

Through a survey of state pesticide collection efforts in 1996, information was gathered on the status and results of state endeavors of disposing of unwanted pesticides. The states have treated stored pesticides as a major concern and have worked hard to develop appropriate strategies to respond to this environmental issue. Simultaneously, the absence of any meaningful type of permanent legislation, funding, or program in most states exposes a major weakness. Thirty states lack statutory or administrative provisions that would establish a permanent initiative for collecting unwanted agricultural pesticides. This situation suggests that the issue of how a state might move from a temporary or targeted program to a reliable program that truly removes most accumulated pesticides is important.

The pesticide collection efforts of several states have simply consisted of targeted accumulations of unwanted pesticides, while others have scheduled collection programs based upon the availability of funding. These efforts are a reasonable beginning and may markedly reduce the potential contamination problems posed by accumulated pesticides. However, targeted programs cannot be expected to collect all on the accumulated pesticides because participation is voluntary and some people will not participate.

Moreover, targeted programs do not achieve a long-term solution for the disposal of unwanted pesticides because they do not address the continued generation of unwanted pesticides. Unused pesticides continue to accumulate whenever a producer buys more pesticides than are used. The dangers posed by unwanted pesticides cannot be completely addressed until an ongoing long-term solution is in place with regulatory guidelines and a permanent source of funding. Therefore, if a state truly wants to remove a majority of unwanted pesticides from storage, it needs to institute a permanent program that provides for the disposal of not only accumulated pesticides, but also those pesticides that are currently being relegated to storage due to the lack of plans by the possessor to use them.

Several states have recognized the need for a long-term solution with appropriate regulatory controls regarding unwanted pesticides. Although states have independently employed distinct organizational, funding, and safety provisions to collect unwanted pesticides, two basic approaches may be discerned: one for an agricultural program and one for a household program. Michigan and Minnesota have established a long-term apparatus for program funding and the safe disposal of unwanted agricultural pesticides. Michigan has a particularly commendable program whereby pesticide registration fees are deposited into a fund and some monies may be used for pesticide pickup. As it might be expected that the amount on unwanted pesticides will decrease over time due to decreased quantities of accumulated pesticides, the Michigan program provides for the suspension of fees whenever the amount of money in the fund exceeds a statutory amount.

Iowa and New York are examples of states employing the second approach. They use their household hazardous waste program to handle modest quantities of unwanted pesticides from agricultural producers. These efforts suggest that it should not be that difficult for other

states to provide a mechanism to facilitate the removal of unwanted pesticides. Florida has also moved to household programs in some counties (Florida Department of Agriculture and Consumer Services, 1997). Yet an agricultural pesticide collection program conducted in three Florida counties in 1996 showed that significant amounts of pesticides had not been disposed of through existing household programs. This suggests that improved communications are necessary, and possibly greater assistance by county and state extension agents, as has occurred in other states (Panter, 1996).

Conclusion

The storage of significant quantities of unwanted pesticides has been noted as a situation that poses risks. Due to the potential of contamination of the environment and injuries to humans posed by accumulated pesticides, governments have developed new regulations to help in the safe disposal of unwanted pesticides. The revised Universal Waste Rule should offer greater assistance to states in devising collection programs to dispose of these materials. Under the relaxed rules of this rule, persons managing agricultural pesticides with a collection program qualify as handlers of universal wastes. As handlers, they qualify for fewer burdensome requirements for handlers concerning employee training, a contingency plan, hazardous waste biennial reports, transport, storage, and manifests than apply under the Subtitle C requirements for hazardous waste (Federal Register, 1995).

The experiences of 40 states in operating pesticide collection programs show that state programs can effectively provide for the safe removal of accumulated pesticides. At the same time, a few targeted efforts cannot be expected to eliminate the dangers of stored pesticides. The

continued generation of new unwanted pesticides together with accumulated stocks that have not been collected means that a long-term approach is needed. As individual states gain experience and adopt implementing provisions for the Universal Waste Rule, they should contemplate instituting a permanent infrastructure to provide for the disposal of unwanted pesticides. The collection efforts of several states offer initiatives that might be studied to for developing better responses to eliminate sources of potential contamination.

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