



Proper disposal of pesticide containers should not be overlooked.

Pesticide safety and security issues

By Laurie Ann Hurner

Editor's note: This article grants one continuing education unit (CEU) in the Core category when submitted and approved toward the renewal of a Florida Department of Agriculture and Consumer Services restricted-use pesticide license.

Anyone who works with agricultural pesticides should have a knowledge of these products far beyond just how to apply them. Many applicators spend a lot of time studying for the restricted-use pesticide license exam, toiling over the exam itself and stressing until they find out if they passed. Then they return to work with a pesticide license and someone who will tell them how to apply the product. This situation is not ideal, nor is it safe. An applicator needs to understand not only how to read labels, but also how to choose the right product to apply and how to safely apply it. The applicator must also understand completely how to transport, store and dispose of pesticides.

This article will focus on the following:

- Transportation of pesticides that are deemed hazardous by the U.S. secretary of transportation
- Secure pesticide storage
- Proper disposal of pesticide waste

TRANSPORTING PESTICIDE PRODUCTS

If you ship or transport a hazardous material in the course of doing business, following specific regulations is necessary and lawful. The U.S. Department of Transportation (DOT) determines what constitutes a hazardous chemical, and some pesticides are included on that list. The Hazardous Materials Regulations (HMR) protect not only employees who transport materials, but also nearby people and the environment.

The HMR specifically identifies a *farmer* as a person who is engaged in the production or raising of crops, poultry or livestock. Many products regularly used in farming (fertilizers, pesticides, soil amendments and fuels) are identified through this regulation by their hazard class. There are nine classes in the DOT Hazard Classification System and one additional section titled "Other."

Transportation of pesticides falls into two categories for farmers:

- 1) transporting between fields and
 - 2) transporting to and from the farm.
- These two categories carry different requirements and exemptions for farmers, as follows:

1) If you are a farmer transporting agricultural products for pest control (other than gases) between fields of the same farm using local roads, you are exempt from the HMR. The same farm is any property that you own, lease or rent. However, in a document titled, "Transporting Pesticides and Understanding the Rules of the Road..." author Frederick M. Fishel, University of Florida Institute of Food and Agricultural Sciences professor, reminds us that if a farmer transports a Class 2 hazardous material (gases) between fields, this falls under the HMR.

2) Farmers are subject to the HMR when transporting products classified as hazardous materials from the dealer/co-op to their farm. If your dealer/co-op delivers materials to your farm, it is responsible for compliance.

Since 2003, agricultural producers who ship or transport hazardous materials in quantities that require placards must develop and implement a transportation security plan. This plan must address personnel safety, unauthorized access and en route security. The goal

of this requirement is to deter terrorists and other illegal acts and to limit a producer's exposure to liability in the event an illegal act occurs.

SECURE PESTICIDE STORAGE

Now that you understand completely the importance of safe pesticide transportation, another key item to review is secure pesticide storage. Many companies rehabilitate an old, unused building or area for pesticide storage, but it is always best to build a separate facility for such storage. There are many things to consider when building a pesticide storage facility. In a document titled "Secure Pesticide Storage: General Features," Fishel describes a well-designed and maintained storage site as one that:

- Protects people and animals from exposure
- Reduces the chance of environmental contamination
- Prevents damage to pesticides from temperature extremes and excess moisture
- Safeguards pesticides from theft,

vandalism and unauthorized use

- Reduces the likelihood of liability

Pesticide storage is even a topic in Chapter 5E-2 of the Florida Administrative Code, which states that "restricted-use pesticides shall be stored and maintained in a secure manner, such that they are not easily accessible to unauthorized persons." Inspectors from the Florida Department of Agriculture and Consumer Services conduct regular agricultural pesticide-use inspections, which include examining a farm's pesticide storage area.

When developing a new pesticide storage area or deciding if your pesticide storage area is secure, there are several things to consider:

- **Secure the site.** You can check off a couple of the factors needed for a well-designed and maintained storage site with this one. Pesticides are expensive, and people are nosy. Even though people may be aware of the danger of pesticides, they cannot help themselves when a door is unlocked.
- **Prevent water damage.** Make sure that your facility is sound from a design standpoint. Pesticide storage should never be located near a source of surface water or an access point to ground water. In some cases, it may be beneficial to consider diking the storage facility as a secondary security measure against water damage. The U.S. Natural Resources Conservation Service and the Florida Department of Environmental Protection recommend that pesticide-handling facilities are located a minimum of 100 feet from water sources.
- **Control the temperature.** Definitely choose a cool, well-ventilated building with an insulated ceiling. Exhaust fans may be a good investment. If you examine the label on most pesticide products, it will specify storage temperature limits.
- **Provide adequate lighting.** Proper lighting is important. Pesticide applicators have to be able to easily see the products in storage, identify any leaks or spills and read the pesticide labels.

- **Use nonporous material.** Use only sealed concrete, glazed ceramic tile, no-wax sheet flooring or other materials that are easy to clean and decontaminate in the event of a spill or leak.
- **Maintain the storage site.** Keep the site a pesticide storage site. Do not store other materials at the site. It is too easy for people to get confused about the danger of materials.
- **Keep labels legible.** Make sure the pesticide labels are easy to read. If a label is torn, damaged or lost, immediately mark the container with some basic labeling information and then request a replacement label.
- **Store pesticides in accurately labeled containers that seal securely.** Do not store pesticides outside of their original containers. People have used empty soda bottles, milk jugs and medicine bottles to store pesticides temporarily. One can very quickly see the problem with that.
- **Look for damage.** Inspect pesticide containers regularly for any damage or label issues. If you identify a spill or tear, immediately put on the proper personal protective equipment and transfer the product to a secure, properly labeled container.
- **Note shelf life of pesticides.** Keep an accurate inventory of all pesticides that are in storage. Some pesticides have short shelf lives and can become more dangerous if used after the expiration date.
- **Isolate waste products.** Always keep outdated, damaged and cancelled products away from product used on a daily basis. Make sure that you recycle or dispose properly of waste products as soon as possible.

Although pesticide storage seems like a no-brainer, it remains critical. Safety is the key element in the equation. Being safe with pesticides should always be top of mind.

PROPER DISPOSAL OF PESTICIDE WASTE

Proper disposal of pesticide waste is so important that there are several federal and state laws that



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regulate it. The Federal Insecticide, Fungicide, and Rodenticide Act and the Florida Pesticide Law speak directly to this topic. Improper disposal of these types of waste may result in fines to the applicator.

There are five types of pesticide waste: empty containers, excess mixture, excess product, rinse water from containers and application equipment, and material generated from the cleanup of spills and leaks. It may seem like a no-brainer of what to do with all these things: just throw them in the garbage. However, this is definitely not a good idea with some of these types of waste. Pesticide waste is divided into two categories:

- 1) **Hazardous waste**, regulated by the Federal Resource Conservation and Recovery Act, is listed in a section of federal regulations and must be disposed of properly by a licensed hazardous waste contractor. A hazardous waste has at least one of the following characteristics: ignitable, corrosive, reactive and/or toxic.
- 2) **Solid waste** pesticides not

classified as hazardous waste can be disposed of as regular trash.

Proper disposal of each type of waste is as follows:

Empty containers include bags. Shake them clean and then they may be thrown away as solid waste. Empty drums, bottles or cans can be triple-rinsed or pressure rinsed.

Excess mixture is diluted pesticide left over in the spray tank after an application. Excess mixture can be avoided by measuring product correctly and calibrating machinery properly. If you do end up with extra mixture, make sure to dispose of it by applying it on a labeled site.

Excess product is unused product that you may have in your inventory that is no longer needed or no longer legal. The best way to avoid having excess product is to buy only what you need for a season.

Rinse water can be dangerous. Do not discharge rinse water on the ground. This water can potentially cause ground and surface water contamination. Reuse rinse water to dilute the next batch of formulation. Up to

five percent of the water for dilution may be rinse water. You can also reapply rinse water to a labeled site. This is allowed under federal law and will not result in an applied concentration above the label recommendation.

Material generated from the cleanup of spills and leaks: If the spill or leak is from a currently registered pesticide and the cleanup is immediate, you can usually use the material in your spray application. You may use cat litter, sawdust or other absorbent materials to absorb the material and then use that as a pesticide. If soil has been contaminated by pesticide discharges for a long time, do not use this method since some of the soil may be now classified as a hazardous waste.

This article has provided an in-depth look at three types of pesticide handling that an applicator does not consider every day while concentrating on getting the assigned job done and moving on to the next task. If you are the applicator or a person who works with applicators, you may want to keep this article handy for a frank discussion in the near future. 🍊

Laurie Ann Hurner is the Highlands County Extension director and a citrus agent with the University of Florida Institute of Food and Agricultural Sciences.

Sources

- Proper Disposal of Pesticide Waste, Norman Nesheim and Frederick M. Fishel, <http://edis.ifas.ufl.edu/pi010>
- Transporting Pesticides and Understanding the Rules of the Road: Farmers, Ranchers, and Production Agricultural Operations, Frederick M. Fishel, <http://edis.ifas.ufl.edu/pi197>
- Secure Pesticide Storage: General Features, Frederick M. Fishel, <http://edis.ifas.ufl.edu/pi068>

Mail the answer sheet or copy of the form to:

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If you have questions regarding this form, test or CEUs, e-mail Laurie Ann Hurner at lhurner@ufl.edu or call 863-402-7150. Please allow two weeks to process your CEU request.

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'Pesticide safety and security issues' test

To receive one Core continuing education unit (CEU), read "Pesticide safety and security issues" in this issue of Citrus Industry magazine. Answer the 20 questions on the magazine's website (www.CitrusIndustry.net) or mail the answers and application information to the address at the end of the article. The article and test set are valid for up to one year from the publication date. After one year, this test will no longer grant a CEU.

1. Proper lighting in a pesticide storage building/area is very important for the safety of the employees. **T F**
2. When creating a pesticide storage building/area you do not need to worry about temperature because all of the pesticides are in their containers and have not been opened yet. **T F**
3. Securing pesticide storage facilities is a good idea so that outside people and animals cannot get inside and steal the products or get sick from them. **T F**
4. According to Hazardous Materials Regulations (HMR), a farmer is a person who is engaged in the production or raising of crops or poultry, but not livestock. **T F**
5. There are several local county laws that govern the disposal of pesticide containers. **T F**
6. If a pesticide label has been torn off the container, just leave the container near the other ones filled with the same product and everything should be fine. **T F**
7. If you are a farmer transporting agricultural products for pest control (other than gases) between fields of the same farm using local roads, you are exempt from the HMR. **T F**
8. Solid waste is pesticides not classified as hazardous waste. These pesticides can be disposed of as regular trash. **T F**
9. Today's pesticides are so safe for people and the environment that you can throw any type of pesticide container away in your household trash. **T F**
10. You must never use cat litter, sawdust or other absorbent materials to clean up a pesticide spill or leak. **T F**
11. Rinse water from a pesticide application rig is so diluted that you can simply pour that water on the ground and forget about it. **T F**
12. Keeping an inventory of all pesticides purchased will help an applicator avoid out-of-date chemicals or chemicals that are no longer labeled for use. **T F**
13. Hazardous waste may be thrown in any dumpster as long as it is on wheels. **T F**
14. Farmers are subject to the HMR when transporting products classified as hazardous materials from the dealer/co-op to their farm. **T F**
15. Currently, agricultural producers who ship or transport hazardous materials in quantities that require placards must develop and implement a transportation security plan. **T F**
16. It is always best to build a separate facility for pesticide storage. **T F**
17. You must never reapply rinse water to a labeled site. This is not allowed under federal law and will not result in an applied concentration above the label recommendation. **T F**
18. Empty pesticide bags may be shaken to clean them and then thrown away as solid waste. **T F**
19. Excess pesticide mixture can be avoided by measuring your product correctly and calibrating your machinery properly. **T F**
20. You must have a placard on your vehicle when transporting dynamite of any quantity. **T F**

Please circle the number below to rate this article and test:

Not very useful 1 2 3 4 5 6 7 8 9 10 **Very useful**

Pesticide Applicator CEU Form

First Name: _____ Last Name: _____

E-mail: _____ Phone: _____

Pesticide License Number: _____

Address: _____

City: _____ State: _____ Zip: _____