

Memorandum

Date: 7/30/2007

To: Dan James, Clemson University, Department of Pesticide Regulation

Cc: Richard Haynes, Director of Waste Mgmt. Division, SCDHEC

Rodney Wingard, Waste Mgmt. Division, SCDHEC

Steve Burdick, Waste Assessment and Emergency Response Division, SCDHEC

From: Rachel Donica, Waste Mgmt. Division, SCDHEC

Re: Pesticide Handling

Attachment

I. Short History of Pesticides

Pesticides have been used for years starting with the “first generation” which were mostly inorganic materials and petroleum-based that required a multi-step approach where one pesticide was used in conjunction with others. In the 1930’s, wartime research and development lead to the “second generation” of pesticides. These pesticides were aggressive, toxic, and non-specific. The most notable is dichlorodiphenyltrichloroethane commonly referred to as DDT. In 1939, this chemical was found to contain insecticidal properties and became widely used because it was cheap, persistent, easy to use, and deadly. Due to the nature and wide spread use of DDT, the number of insects was greatly reduced which in turn decreased the occurrence of insect born diseases such as yellow fever and malaria.

By the 1940’s, development of other synthetic pesticides such as chlorinated hydrocarbons and organophosphates flourished causing the multi-step approach to be phased out and slowing research on less toxic methods of pest control. The first sign that these “miracle” pesticides may not be as great as previously thought surfaced in the 1950’s when effects on non-target organisms began to appear. Also, target organisms began to develop immunities to these pesticides triggering the need for stronger or larger quantities of pesticides.

By 1972, DDT was banned from use in the United States because of the effects it had on the environment. Additionally, EPA has and continues to ban or restrict common synthetic pesticides to the benefit of the less popular alternatives. For a complete list of pesticides currently banned or restricted, please visit the following web link. <http://www.epa.gov/oppfead1/international/piclist.htm>

II. Handling of Different Pesticides

1. New Generation

These pesticides are classified based on the length of time that they remain effective once applied to the land. They typically linger in the environment for anywhere from a year to less than two weeks. When using pesticides a few simple rules should be followed. First, these pesticides are labeled with specific instructions on use and those directions must be followed to ensure safety. Second, only buy in quantities that you will use. Third, dispose of containers properly.

In order to ensure safe disposal the following guidelines should be adhered to.

- Use as intended per label instructions until gone.
- Triple rinse plastic or glass containers and apply/dispose of the pesticide rinseate on your own property in a manner consistent with the disposal instructions on the pesticide label. Dispose of glass container in a landfill.
- Puncture empty plastic container multiple times and crush so as to avoid the possibility of reuse or pooling water. Disposed of in a landfill.
- Paper containers must be cleaned and triple bagged in plastic. Disposed of in a landfill.
- Any unused liquid must be solidified using an absorbent then triple bagged and disposed of in a landfill. An absorbent is a solid material used to soak up a liquid. Examples include cat litter, sand, or an absorbent from a local commercial store.

However, this does not apply to those pesticides, which EPA has banned from land disposal. This means the EPA will not allow them to be disposed of in a landfill or buried anywhere in the ground. These materials must be incinerated. The following link provides a list of all severely restricted and banned pesticides. <http://www.epa.gov/oppfead1/international/piclist.htm>

Also when dealing with pesticides, personal protective equipment (PPE) should be worn. Examples of PPE needed are goggles, disposable plastic or vinyl one-time use gloves, and dust mask. Also, these activities should be completed in an area with plenty of fresh air available to lessen the risk of inhalation.

Another alternative for disposal is to give a pesticide to someone else who will use it. The aforementioned disposal activities will then need to be carried out by that individual. An unused pesticide product described in SCHWMR 61-79.273.3(a)(2) becomes a waste on the date the generator decides to discard it. These guidelines are outlined in the South Carolina Hazardous Waste Management Regulations (SCHWMR) 61-79.262.70 and 273.3 apply to farmers and any other entities not falling under the exemption for household waste per SCHWMR 61-79.261.4(b)(1).

2. Restricted Use

These pesticides are typically organophosphates or lightly chlorinated compounds and have a typical life of 8-12 years once applied. Any individual or company wishing to use restricted pesticides must be certified through Clemson University's Department of Pesticide Regulation. The guidelines for disposal are the same as those mentioned above and are also outlined in SCHWMR 61-79.273.3.

3. Banned from sale

The most common examples are DDT and chlorodane. These compounds will last up to 30 years in the environment after being applied to the land. EPA has ordered that they are not to be used by anyone for any reason. A farmer/individual must work through a contractor to dispose of them by destroying them in a thermal process.

The SC Department of Agriculture is receiving grant money through the EPA in addition to the allotted state funds to run a one-time pesticide disposal program over the next two years. They are currently setting up an Advisory Committee to include personnel from their department as well as the pesticide community and other state agencies involved in the handling or disposal of pesticides. By March 2008, they will have outreach material, a disposal waste company and begin collections. They will then do an evaluation of the program. This will only be for pesticides from agricultural sites and will not include household related materials or fertilizers.

III. South Carolina Hazardous Waste Management Regulations (SCHWMR) Cited

1. R.61-79.262.70

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this part or other standards in R.61-79.270, R.61-79.264, R.61-79.265, R.61-79.266 or R.61-79.268 for those wastes provided he triple rinses each emptied pesticide container in accordance with R.61-79.261.7(b)(3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label. (11/90; 12/93)

2. R.61-79.273.3

(a) Pesticides covered under this part 273. The requirements of this part apply to persons managing pesticides, as described in 273.9, meeting the following conditions, except those listed in paragraph (b) of this section: (8/00)

(1) Recalled pesticides that are:

(i) Stocks of a suspended and canceled pesticide that are part of a voluntary or mandatory recall under FIFRA Section 19(b),

including, but not limited to those owned by the registrant responsible for conducting the recall; or

(ii) Stocks of a suspended or canceled pesticide, or a pesticide that is not in compliance with FIFRA, that are part of a voluntary recall by the registrant.

(2) Stocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.

(b) Pesticides not covered under part 273.

The requirements of this part do not apply to persons managing the following pesticides:

(1) Recalled pesticides described in paragraph (a)(1) of this section, and unused pesticide products described in paragraph (a)(2) of this section, that are managed by farmers in compliance with 262.70. (262.70 addresses pesticides disposed of on the farmer's own farm in a manner consistent with the disposal instructions on the pesticide label, providing the container is triple rinsed in accordance with 261.7(b)(3));

(2) Pesticides not meeting the conditions set forth in paragraph (a) of this section. These pesticides must be managed in compliance with the hazardous waste regulations in parts 260 through 272;

(3) Pesticides that are not wastes under part 261 of this chapter, including those that do not meet the criteria for waste generation in paragraph (c) of this section or those that are not wastes as described in paragraph (d) of this section; and

(4) Pesticides that are not hazardous waste. A pesticide is a hazardous waste if it is listed in part 261, subpart D or if it exhibits one or more of the characteristics identified in part 261, subpart C.

(c) When a pesticide becomes a waste

(1) A recalled pesticide described in paragraph (a)(1) of this section becomes a waste on the first date on which both of the following conditions apply:

(i) The generator of the recalled pesticide agrees to participate in the recall; and

(ii) The person conducting the recall decides to discard (e.g., burn the pesticide for energy recovery).

(2) An unused pesticide product described in paragraph (a)(2) of this section becomes a waste on the date the generator decides to discard it.

(d) Pesticides that are not wastes. The following pesticides are not wastes:

(1) Recalled pesticides described in paragraph (a)(1) of this section, provided that the person conducting the recall:

(i) has not made a decision to discard (e.g., burn for energy recovery) the pesticide. Until such a decision is made, the pesticide does not meet the definition of "solid waste" under 261.2; thus the pesticide is not a hazardous waste and is not subject to hazardous waste requirements, including part 273 of this chapter. This pesticide remains subject to the requirements of FIFRA; or

(ii) has made a decision to use a management option that, under 261.2, does not cause the pesticide to be a solid waste (i.e., the selected option is use (other than use constituting disposal) or reuse (other than burning for energy recovery), or reclamation). Such a pesticide is not a solid waste and therefore is not a hazardous waste, and is not subject to the hazardous waste requirements including part 273 of this chapter. This pesticide, including a recalled pesticide that is exported to a foreign destination for use or reuse, remains subject to the requirements of FIFRA.

(2) Unused pesticide products described in paragraph (a)(2) of this section, if the generator of the unused pesticide product has not decided to discard (e.g., burn for energy recovery) them. These pesticides remain subject to the requirements of FIFRA.

3. R.61-79.261.4(b)(1)

(b) Solid wastes which are not hazardous wastes. The following solid wastes are not hazardous wastes:

(1) Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse-derived fuel) or reused. "Household waste" means any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day use recreation areas). A resource recovery facility managing municipal solid waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purpose of regulation under this subtitle, if such facility (12/92; 12/93, 6/03):

(i) Receives and burns only

(A) Household waste (from single and multiple dwellings, hotels, motels, and other residential sources) and

(B) Solid waste from commercial or industrial sources that does not contain hazardous waste; and

(ii) Such facility does not accept hazardous wastes and the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in such facility.

IV. Contact Information

Stephen Burdick
Division of Waste Assessment and Emergency Response
Bureau of Land and Waste Management
SC Dept. of Health & Environmental Ctrl.
Phone: 803-898-1317
Email: burdicsc@dhec.sc.gov

Dan James, Investigator
Department of Pesticide Regulation
Clemson University
Phone: 803-736-7680
Fax: 803-736-8457
Email: wjames@clemson.edu

DRAFT