

ALTERNATIVES TO DISPOSING HERBICIDE AND PESTICIDE CONTAINERS

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I have been in the chemical business for 23 years selling all types of pesticides and herbicides. It has only been in the past few years that I have really paid attention to what happens to those empty containers. I am going to limit my talk today to three problems facing those of us who must dispose of empty containers. First is the problem of the general public and the disposal site operator's fear of our type of containers. Second is the problem of properly disposing of these containers. Third is the problem of trying to eliminate certain types of containers for our usage.

I have in my hand the Detroit News dated December 15, 1983. It shows in color a man in a spaceman-like suit walking down the street at Times Beach, MO. I want to read to you part of the article.

"In 1970, few Americans outside the toxicologists laboratory had heard of dioxin. But in the 13 years following, "dioxin" has evolved into a scary buzz word. The family of chemical compounds to which it belongs has vaulted from obscurity to capture top billing among the nation's dreaded chemical environmental hazard. To date, more than one thousand workers around the world have been exposed to the chemical as the result of industrial accidents. And 6000 American veterans of the Vietnam War, where the dioxin laden defoliant Agent Orange was widely sprayed, have sued the government, alleging the dioxin caused health damages to them or their children..."

However, the latest -- but not necessarily the last -- authoritative statement on dioxin, which was issued last week, is that most infamous formulation of dioxin (2,3,7,8-TCDF) does not seem to have lived up to its advanced billing. The dioxin story is more than an account of confusion among scientists and makers of public policy; it is also the saga of the troubled citizen's efforts to come to grips with one of the most complex environmental issues in modern times.

Here is some of what Americans have had to wrestle with over the past 13 years:

- 1970: Three Departments of the Federal Government - Health, Education-Welfare, Agriculture and Interior - ban the use of dioxin containing herbicide.
- 1970: The Defense Department stops spraying Agent Orange in Vietnam.
- 1972: The Food and Drug Administration bans the use of hexachlorophene -- it contained traces of dioxin -- in non-prescription soaps and deodorants.
- 1978: The Veterans Administration creates a national registry to identify Vietnam veterans concerned about exposure to Agent Orange.
- 1979: An apparent increase in miscarriages among Oregon women prompts the Environmental Protection Agency to extend the ban on certain herbicides.
- 1981: The Federal Center for Disease Control begins a study of Vietnam veterans to determine their chances of fathering children with birth defects.
- 1983: The federal government buys the town of Times Beach, MO, because the soil was contaminated with dioxin. Years earlier waste oil containing dioxin which had been poured onto dirt roads to keep

down dust and winter flooding, apparently spread the dioxin throughout neighborhoods.

For Michigan residents, dioxin first surfaced in the late 70's as something objectionable in the Tittabawassee and Saginaw Rivers. TCDD levels ranged from zero in some fish to 695 PPT in others.

Dow Chemical Co.'s herbicide-manufacturing plant is located by the Tittabawassee, and it was Dow itself which first detected dioxin in the fish. After checking the herbicide - manufacturing process for leaks, company scientists decided that the plant was not at fault.

But how was the TCDD getting into the river? To find the answer, Dow embarked on a precedent-setting study which to this day gets top marks in the scientific community for its integrity. The study found the dioxins, besides being an unwanted by-product of 2,4,5-T herbicide, also come from combustion. According to Dow, society makes dioxins when it operates power plants, runs automobiles, builds fires, smokes cigarettes and charcoal broils steaks.

Consumers learned of dioxins in soap containing hexachlorophene; in talcum powders, perfumes and cosmetics: in sprays used to kill germs around swimming pools: in chemically treated lumber used in playgrounds; in weed killers used on suburban lawns; and in herbicides sprayed on Kansas wheatfields.

An alarmed public, trying to remain rational and responsible amid often conflicting statements from government, industry and the academic world about TCDD's effect on humans, evolved a siege mentality as it girded itself for the worst.

This, generally, represented the national mind-set until last week, when several hundred scientists from around the world met here at Michigan State University to address the dioxin question.

At the end of four days, the conference issued a statement. It said, in part, that while 2,3,7,8-TCDD dioxin causes death and disease in several species of animals, scientists can not yet verify that it has caused a single human death.

Therefore, the conference concluded, on the basis on present knowledge, the chemical has not turned out to be as dangerous to humans as some scientists warned.

Detroit Free Press, Friday, December 16, 1983:

"A nationwide battle plan to find and clean up possibly hundreds of sites contaminated by dioxin was announced Thursday by the Environmental Protection Agency, which calls dioxin one of the most perplexing and potentially dangerous" chemicals known to man."

The Detroit News, Thursday November 10, 1983:

"At least 13 new waste dumps - including one that will dispose of toxic materials - are planned for the Detroit area, even though many existing landfills are leaking dangerous chemicals into the soil and ground water.

There are already 13 operating landfills in Oakland, Macomb and Wayne counties licensed to dispose of municipal garbage. In addition, hundreds of illegal and no longer used dumps dot the area. Five of Michigan's most hazardous toxic waste sites are in Oakland and Macomb counties.

"Still, waste planners say new landfills are needed to cope with the mounting trash disposal problem.

But residents feel differently. Nearly every proposed landfill is meeting community opposition from citizens who are distrustful of even dumps that promise to handle nontoxic materials.

What we are concerned about is what they're going to haul in after dark", said Barbara Columbus. "Look at the Berlin & Ferro (Dump site near Flint); they dumped all kinds of chemicals in there illegally. Now the people living around it can barely breathe, let alone sell their houses."

The Detroit Free Press, Wednesday December 28, 1983:

"On December 15, the Environmental Protection Agency announced a program to clean up places around the country contaminated by dioxin, which it characterized as one of the most potentially dangerous chemicals ever to pollute the environment.

This follows the agency's purchase last March of the entire town of Times Beach, MO, to protect its residents against the dioxin present in the local soil. It may also foreshadow a long and expensive campaign for an ultimately dubious goal."

Even as public fear of the dioxin menace has spread, the scientific case for doubting the danger has grown. The EPA announcement, which got much attention, followed hard on a report issued by a symposium of scientists at Michigan State University which got little attention. What the scientists concluded casts considerable doubt on the urgency suggested by the Federal government.

Invariably referred to by environmentalists as "one of the most toxic substances known to man," dioxin is an unwanted by-product of the manufacturing of pesticides and herbicides.

The scientists who met in Lansing stressed precisely this point. "Insufficient evidence exists to conclude that TCDD is a human carcinogen," concluded a workshop on dioxins health effects. "The preponderance of evidence indicates that TCDD is not a mutagen (a cause of mutations)."

One conference participant said that dioxin may be a "universal environmental contaminant and that there may be a fairly uniform "background level" of residues in almost everyone" -- largely because it is produced by such innocuous processes as fire. In places where there is a lot of dioxin, the scientists recommended nothing more drastic than further study.

The fact that dioxin hasn't been proved very dangerous yet doesn't mean it will never be. Certainly the federal government ought to do what it can to settle the issue. But until it can find better evidence of dioxin's hazards, neither the public nor the EPA should panic.

No wonder the public is scared. All of us have seen the T.V. cameras on our local television focusing on empty 55 gallon drums laying on their side or half submerged in the soil. 55 and 30 gallon drums have become a focal point of fear of contamination. Do you realize how many products are packaged in drum containers, everything from herbicides to solvents, industrial cleaners to ingredients for making bread at the local bakery. I do not want to make light of or take away from our hazardous waste disposal problems because we do have some major problems with improper disposal. But I think it is important that we realize why the public is so upset. Well, how do we properly dispose of our containers?

The Department of Agriculture of the State of Michigan gives the following guidelines for pesticide container disposal:

A. Liquid formulation containers

Triple rinse containers immediately after emptying according to the following procedure:

1. Fill the container with rinse water to one quarter of the containers' volume.

2. Replace the closure or plug the opening of the container.
 3. Shake or roll the container vigorously.
 4. Add this rinse water to the spray tank.
 5. Puncture top and bottom of container to prevent its reuse.
 6. Dispose of the container in any licensed sanitary landfill. Prompt rinsing of the container allows all of the valuable pesticide product to be used and avoids environmental harm which would be caused by improper disposal.
- B. Wettable powders, dusts, and other solid formulation containers
1. Completely empty the contents of the container.
 2. Open both ends of the bags to prevent reuse.
 3. Deposit container in any licensed sanitary landfill.

The Michigan Department of Agriculture (MDA) is now prepared to provide advice and assistance to individuals with a disposal problem. The address of the agency is:

Waste Evaluation Unit
 Office of Hazardous Waste Management
 Department of Natural Resources
 P.O. Box 30038
 Lansing, MI 48909
 Telephone: 517-373-2730

Another useful address is: IDENTIFICATION AND LISTING OF HAZARDOUS WASTES
 Mr. Ed Cox
 U.S. Environmental Protection Agency
 P.O. Building B
 Dalton and Library Streets
 Dock 14
 Cincinnati, OH 45214

NOTIFICATIONS OF HAZARDOUS WASTE ACTIVITY
 Same as above

The following publications should be of interest. They are available from the Michigan Department of Natural Resources (address above), Attention: Joan Peck.

Licensed Hazardous Waste Transporters. ACT 64. P.A. 1979.
 Hazardous Waste Management Act. ACT 64 of 1979 as Amended.
 Helpful Pesticide Information.
 Pesticide First Aid Kit.
 Instructions for Obtaining U.S. EPA I.D. Number of Hazardous Waste Activities.
 Summary of Application for ACT 64 Operating Licenses. Aug. 15, 1983.
 DNR/ESD/Hazardous Waste Management. Provisions and Rules. February 5, 1981.
 National Fire Protection Agency Publication 43D.
 National Fire Protection Agency Publication 30

There are only a few of the publications covering the disposal of wastes. After reading all of the previous mentioned articles, I was totally confused. All I can say for certain is to triple rinse your liquid containers and punch holes in the top and bottom of them. It is still possible to do both of these precautions and still have a landfill operator or disposal company refuse to take your containers.

That takes us to the third part of our problem. It seems there isn't too much trouble if you are only getting rid of a couple containers. If you are a lawn care company with ten or twenty 55 gallon containers to get rid of, you have a problem. One of the answers to this problem has been the use of bulk

containers.

Lawn care companies have inherently grown to be a highly visible industry to the public. They have manifested this image through intense marketing and attractive equipment passing through residential areas. Even though the fraction of pesticides applied by lawn care companies is small compared to the total sum of all used, they still remain the most apparent and have the greatest impact on public opinion. The lawn care industry has an obligation to develop innovative means to operate within the safety parameters of handling, storing, and disposing of pesticides and their containers.

One method that has been employed to satisfy these operational concerns is the Bulk System. A Bulk System consists of a pesticide station comprised of only one storage unit per product and a dispensing method. The system is economical, eases daily operation, and offers many benefits. Collectively, the greatest benefits derived from the Bulk System are cost, time and safety when compared to smaller containers. The highlighted cost and time savings includes the elimination of triple rinsing, and the expense of properly disposing of drums.

The United State Environmental Protection Agency issued a policy applicable to the Bulk concept: "It has come to our (EPA) attention that an increasing practice among manufacturers and distributors of pesticides involved the transport and transfer of pesticides in large quantities, i.e. bulk". For the purpose of this policy the EPA has termed "Bulk" as any volume of pesticide greater than 55 gallons liquid or 100 lbs dry material held in an individual container.

It goes on to state "in the interest of energy and resource conservation and of improved safety measures in pesticide handling, it is incumbent upon the agency to encourage and endorse these purposes in so far as they are consistent with the broad purposes of FIFRA (The Federal Insecticide, Fungicide and Rodenticide Act)".

An enforcement policy is defined in regards to bulk shipment and transfer practices. It should be the philosophy of a bulk distributor and the end user to institute these practices in accordance with regulation. Among the pertinent information is included FIFRA section 3 (A) USC 136A (A). It states that "no person may distribute, sell, offer for sale, or hold for sale, to any person any pesticide which is not registered with the administrator." The purpose of the registration is to provide a vehicle for review, tracing, identifying, and assuring that a labeled product is accountable.

The lawn care company as an end user requires no special registration (i.e., establishment of product registration) for the storage and use of bulk pesticides. Yet, regulations that are applicable to the general usage of pesticides should be enacted. If a bulk purchaser, however, decanted product purchased in bulk into a smaller container for resale, the registrant could not be held accountable for the product, nor would the decanted product be considered registered. The lawn care company could be subject to enforcement under sections 12 (A) (1) (A) and 12 (A) (1) (E) for selling and distributing unregistered and mislabeled pesticides.

The strategy around planning a pesticide storage area should emphasize both safety and day to day operation efficiency. Whether a single bulk tank or a complex pesticide station is employed, many considerations should enter into the planning of a bulk facility. Bulk tank replacment and set-up require a conceived plan since its design is for ease of daily operations. Many lawn care companies utilize a meter system with a totalizer to allow a quick reading of material used. The storage area should have the essential equipment that is near any chemical storage. This equipment includes protective handling gear,

eye wash, a sink or shower, first aid kit, absorptive material and an emergency procedure with phone numbers. The National Fire Protection Agency, publication 43D describes a code for storage of pesticides. It is an excellent reference for guidelines which include building location, separation of pesticides, posted signs, storage arrangement, and other storage area requirements. Spills from leaks are unlikely, but upon occurrence, dikes prevent a loss and potential pesticide issue. Pesticides of particular note are xylene based compounds which are classified as combustibile liquids (i.e. Bensulide-Betasan). The National Fire Protection Agency, publication NFPA 30-FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE lists these as a class II liquid. Lawn care companies storing these liquids should refer to this code. This code does address the control of spillage of class II liquids and preventing accidental discharge from endangering important facilities, adjoining property, or reaching waterways by remote impounding or by diking.

Most of the regulations regarding storage of pesticides are well defined and well serve their intended purpose of promoting safety to humans and the environment. The small remaining fraction of those regulations subject to interpretation, or those being generated on a local level will, to a certain degree, reflect how the industry stores, handles, and disposes of pesticides and their by-products in the future.

Besides the use of bulk containers the most important thing we can do is pay attention to how we are handling our empty containers. I personally visit lawn care companies, landscapers, municipalities, schools, golf courses, and apartment projects. I see empty containers at the back of buildings rusting with the labels long since destroyed. Some of these areas back up to residential dwellings. What do you think the residents think about this condition? What about the rain water running onto their property? They don't know about triple rinsing. Get rid of those containers promptly. Some of the complaints made to village and city councils are made by people that see the evidence of our sloppy disposals and poor housekeeping. Let's quit waving a red flag in the face of the public. Start with cleaning up your own area and properly disposing of containers.