

Factory Farming

Toxic Waste and Fertilizer
in Vermont, 1990-1995



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Toxic Fertilizer in Vermont

Every year in the United States, polluting industries send millions of pounds of waste materials to fertilizer companies, presumably for use as raw materials in fertilizer production. Even though these wastes are often laden with toxic metal and chemical impurities, fertilizer manufacturers use steel mill smokestack ash and air pollution scrubber brine, and other industrial by-products as the raw materials for a substantial portion of the nation's fertilizers.

In theory, fertilizers applied to farm fields are subject to the same federal toxic chemical contamination standards as those applied to waste headed for toxic chemical dump sites. In practice, however, there is almost no monitoring of fertilizer or soil contamination levels, and contamination levels may be much higher than allowed by these loosely enforced standards. Highly contaminated fertilizer can render cropland sterile, harm the health of farmers and their families, and even threaten the food supply.

The Environmental Working Group used data from the Toxics Release Inventory to track

the flow of hazardous wastes from industries to fertilizer companies and businesses that appeared to be farms. (Some of the fertilizer companies also produce other organic and inorganic chemicals, and the term farm includes ranches, grasslands, and other agricultural businesses. Due to resource limitations we were not able to contact every business that was identified as a farm or a fertilizer company in the TRI.)

State Findings

According to the TRI, Vermont companies sent nearly 58,000 pounds of industrial chemicals to fertilizer companies and farms to be recycled and applied to land between 1990 and 1995. During the same time period, Vermont fertilizer companies and facilities that appeared to be farms did not receive any wastes. This makes Vermont a net exporter of toxic wastes to fertilizer companies.

Companies sending wastes for use in fertilizers

In Vermont, 3 companies sent waste to fertilizer companies and facilities that were listed as farms in the TRI. Of those, Vermont

Circuits Inc. sent the most, more than 44,000 pounds of waste. Nexus Custom Electronics Inc. and GE Co. followed with nearly 14,000 and 13 pounds, respectively (Table 1).

Most of the wastes, more than 44,000 pounds, were sent from the Electronic Components And Accessories industry, which accounted for 77% of the wastes sent to fertilizer companies and facilities that were listed as farms in the TRI (Table 2).

Chemicals “Recycled”

The chemicals most commonly transferred from companies in Vermont to fertilizers and farms (by weight) were copper and copper compounds. More than 44,000 pounds of copper and copper compounds were sent from TRI reporters to fertilizer companies and farms between 1990 and 1995. Freon-113 and lead and lead compounds followed with nearly 14,000 and 8 pounds, respectively.

National Summary Data

EWG identified more than 600 companies in 44 different states that sent more than 270 million pounds of toxic waste to farms and fertilizer companies between 1990 and 1995. More of this waste came from Nebraska than any other state, followed by California and Oregon.

Over 450 fertilizer companies and facilities that appeared to be farms in 38 different states received wastes between 1990 and 1995. Companies in California received the most toxic waste, 37.6 million pounds, followed by Nebraska and New Jersey.

Companies

Toxic waste shippers. The steel industry provided nearly 30% of all the waste sent to farms and fertilizer companies from 1990 through 1995, accounting for nearly 80 million pounds of waste shipped. Nucor Steel of Norfolk, Nebraska sent the most waste of any company with 26.2 million pounds, followed by Atlantic Steel Industries, Inc. of Cartersville, Georgia with more than 17.5 million pounds and Allco Chemical Corporation of Galena, Kansas, with more than 12.7 million pounds.

Fertilizer company recipients. Phibro-Tech of Santa Fe Springs, California received the most waste, more than 35.4 mil-

lion pounds, followed by Old Bridge Chemical Company of Old Bridge, New Jersey, with nearly 30 million pounds and Frit Industries of Ozark, Alabama, with more than 27.4 million pounds.

Farms. Between 1990 to 1995, industrial polluters sent more than 22.5 million pounds of wastes directly to 381 facilities that appeared to be farms.¹ This includes 21 million pounds of potentially beneficial—yet not necessarily pure—chemicals, as well as more than 1 million pounds of toxic waste, mostly toxic heavy metals, with no potential agricultural application. This toxic waste includes more than 174,000 pounds of chromium and chromium compounds and over 33,000 pounds of lead and lead compounds. Unfortunately, the TRI does not include any additional information on these “farms,” so it is impossible to say what these farms did with this waste or whether food or livestock are grown on these lands.

Chemicals. The chemicals most commonly transferred to fertilizer companies and businesses that appear to be farms were zinc (90 million pounds), copper (48.8 million pounds), and sulfuric acid (34.6 million pounds).

In addition to these chemicals, the companies we studied sent more than 6.3 million pounds of lead and lead compounds, 230,000 pounds of cad-

mium, and 16,000 pounds of mercury. The company that sent the greatest amount of these heavy metals to fertilizer companies and farms was Nucor Steel in Nebraska. The fertilizer manufacturer receiving the greatest amount of these compounds was Frit Industries in Norfolk, Nebraska which received nearly 2.2 million pounds of heavy metals between 1990 and 1995.

Major Loopholes Allow Toxic Waste to be Used in Fertilizer

Three major loopholes in existing toxics law allow toxic waste to be used in fertilizer, presenting risks to farmers and the food supply.

The Steel Industry and K061.

There are three major pathways that hazardous waste can follow from the industry to the farm, each with a different level of reporting and testing requirements. The most loosely regulated route is through a loophole that allows steel companies to send toxic-laden ash—technically called “K061 Waste”—from their smokestacks, to companies that make zinc fertilizers, without testing it or even recording where it is going. This material can literally flow from the smokestack directly to the fertilizer sack and from there to the crop field.

The second method is for companies to exploit a loophole that was designed for the “recycling” of hazardous wastes. Any company sending any wastes to a fertilizer company for recycling

need only ensure that the material would pass the EPA’s Land Disposal Rule (LDR); regulations written for the storage of treated toxic wastes in lined and highly regulated hazardous waste landfills. If the waste is safe enough to be stored in these landfills, then it is considered safe enough to be recycled into fertilizer. The generating company is not required to test their wastes beyond the LDR standards, nor are they required to document what eventually happens to it.

The third recycling loophole allows companies to transfer their wastes directly to farms if the farms can treat the waste on their land and render the material harmless. This “land treatment” process is more highly regulated than the previous two loopholes and was originally designed to allow beneficial use of relatively benign waste. This report, however, shows that manufacturers sent more than 200,000 pounds of non-beneficial heavy metals to farms between 1990 and 1995.

Conclusions

Between 1990 and 1995, manufacturers sent hundreds of millions of pounds of hazardous materials to fertilizer companies and businesses that appear to be farms, where they were almost certainly incorporated into nutrients that are spread on the soil that produces America’s food supply. The ultimate use of these chemicals, however, is difficult to determine because of

severe limitations in the federal programs — most notably the Toxics Release Inventory — that are theoretically designed to guarantee the public the right to know the fate of industrial waste and toxic chemicals used or generated in their communities.

Recommendations

Anyone who uses fertilizer has the right to know what is in it, and whether it was made from toxic industrial waste. But beyond this basic public right to know, health officials need to know what is in the nation's fertilizer in order to protect the nation's food supply, rural communities, and farmers from toxic chemical contamination. Agricultural authorities, in turn, need an efficient means to monitor possible contamination of the nation's cropland with toxic metals and industrial chemicals.

To achieve these goals we recommend:

- **Expansion of the Toxics Release Inventory** to include full chemical use reporting for all manufacturing, utility, and waste-treatment facilities. The EPA is considering expanding the Toxics Release Inventory to include materials accounting requirements as done in New Jersey and Massachusetts. This would be an important first step toward fulfilling the public's right to know about toxic chemicals in their homes, workplaces, and communities.
- **Elimination of the RCRA exemption for K061 waste.** This would close a recycling loophole that allows millions of pounds of heavy metals, carcinogens, and dioxin to be incorporated into fertilizer and applied to the nation's farmland.
- **A ban on the use of any hazardous waste in fertilizer production that could possibly be contaminated with dioxin.** At a minimum this ban would prohibit waste from the steel industry, hazardous and municipal waste incinerators (including pulp incinerators) and cement kilns as a raw feed stock for fertilizer production.
- **A moratorium on all waste incorporation into fertilizers** until standards for non-degradation of the soil can be designed and enforced. A policy of non-degradation would limit application of materials to the soil that would result in a net increase of toxics in the soil over a 40 year or longer time period.
- **All raw materials used to produce fertilizers should be tested for toxic constituents.** This requirement would include but would not be limited to cement kiln dust and mining waste.

- **Full labeling of fertilizers.** Fertilizers derived from toxic waste should be tested for heavy metals, persistent organic poisons, and other toxics, and the results of those tests should be printed on labels on the containers. All fertilizers derived from toxic waste should be labeled as such.
- **Monitoring farms treated with toxic waste derived fertilizers** for leaching of materials from the cropland into the surrounding envi-

ronment. In addition, a record of use of these chemicals on the land should be retained as an addendum to the land deed in order to inform and protect future purchasers of the land. Farms treated with toxic waste-derived fertilizers could contain high levels of heavy metals and other persistent poisons. These chemicals are some of the most commonly found pollutants at Superfund sites and could create a toxic legacy for generations to come.

Note

¹For purposes of this analysis we included as farms all businesses identified in the TRI as farms, ranches, grasslands, dairy operations and entities engaged in other forms of agricultural production. We also included as farms, any individual who received toxic materials for “other” land disposal, “other” recycling, or land application. In total, 11 percent of the entities listed as farms into this report fell into the “other” category. The vast majority of these recipients were individuals who received waste for land disposal. The TRI provides no information about the use that may have been made of the materials sent to these “farms” nor whether food crops were grown at the locations listed.

Factory Farming in Vermont

Table 1: Companies shipping toxic chemicals to fertilizer companies and farms*--1990-1995

Factory: VERMONT CIRCUITS INC. --BRATTLEBORO,VT	Pounds Shipped: 44,220
Chemicals: Copper And Copper Compounds	44,220
Factory: NEXUS CUSTOM ELECTRONICS INC. --BRANDON,VT	Pounds Shipped: 13,552
Chemicals: Freon 113	13,552
Factory: GE CO. --NORTH CLARENDON,VT	Pounds Shipped: 13
Chemicals: Chromium And Chromium Compounds	5
Lead And Lead Compounds	8

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Source: Environmental Working Group. Based on data from the U.S. EPA's Toxics Release Inventory (1990-1995)