



Safe Fields, Safe Food: Keeping Toxic Industrial Waste Off the Farm and Out of Our Food

Since the beginning of the industrialized age, many sectors of the American economy have sought to deposit the detritus of their own industries upon farmers, food producers and consumers. Two examples of this "dumping" which have recently garnered national attention are the use of toxic industrial wastes from steel mills, cement kilns, paper mills and other industrial processes in fertilizers used to grow food and garden crops; and the land application of sewage sludge from sewage treatment plants that accept toxic wastewater discharges from polluting industries.

FERTILIZER

Ironically, state and federal regulatory agencies may have encouraged the use of these practices. Steel production, cement manufacturing and many other industrial techniques generate wastes that contain dioxin, lead, cadmium, arsenic and other pollutants. However, because these wastes also contain lime, calcium, phosphorus, zinc or other minerals that are beneficial to agriculture, the Environmental Protection Agency (EPA) and other state and federal agencies have encouraged the "recycling" of the wastes into fertilizers. In the award-winning exposé "Fear in the Fields," *Seattle Times* reporter Duff Wilson noted that at least 26 states have programs in place to match hazardous waste generators with recyclers. Industry consultant and chemist Ed Kleppinger said, "The last refuge of the hazardous-waste scoundrel is to call it a fertilizer or soil amendment and dump it on farmland."

In a March 1998 report, *Factory Farming: Toxic Waste and Fertilizer in the United States, 1990-1995*, researchers found that during the five-year period studied, more than 271 million pounds of toxic waste tracked by the EPA's Toxics Release Inventory (TRI) were sent to 450 fertilizer manufacturers and businesses that appeared to be farms. Sixty-nine toxic chemicals were represented in those wastes [1].

Many of the wastes being put into fertilizers are taken from pollution control equipment at factories. In other words, industries dutifully capture pollutants in scrubbers and other equipment, only to turn around and spread the captured wastes directly onto productive farm land. The situation represents a major threat to health and the environment.

There are currently no federal regulations requiring fertilizer manufacturers to test their products to determine the amounts of heavy metals, dioxin, or other pollutants they may contain, nor are fertilizer companies required to list anywhere the sources from which they obtain minerals. In fact, hazardous steel mill waste has a special exemption under federal hazardous waste law that specifically removes all standards and requirements for disposal (i.e. testing, manifesting and tracking) if it is used for fertilizer. Dick Camp, president of the Bay Zinc Fertilizer Company of Moxee City, Washington, seemed mystified: "When it goes into our silo, it's a hazardous waste. When it comes out of the

silos, it's no longer regulated. The exact same material. Don't ask me why. [2]"

The ramifications of this lack of regulatory oversight combined with EPA's endorsement of recycling have been demonstrated in very real economic terms on farms across the country.

- Central Washington farmers have lost crops, cows and horses and traced the problem back to fertilizers they used.
- In Tifton, Georgia, a mixture of hazardous waste sold as liming material killed more than 1,000 acres of peanut crops.
- A uranium processing plant in Gore, Oklahoma sprayed its radioactive waste on grazing land and local residents believe that the waste caused mutations in animals as well as devastating health problems in local residents.
- Most recently, state officials in Washington [3], and investigative journalists at the Dallas Morning News [4] tested Ironite, a fertilizer made from mining waste and which is sold in garden centers around the country, and found industrial-cleanup levels of lead and arsenic.

These are but a few examples of this practice gone awry, costing innocent farmers and local community members their livelihood and health.

There are urgent environmental and public health concerns resulting from the use of toxic waste in fertilizer. Farmers and farmworkers are exposed to it in the fields. Food crops can take it up. Wildlife as well as farm animals may consume it. (Dairy cows actually ingest a lot of soil as they graze, for example.) The toxic constituents run off into groundwater that feeds into surface water bodies and can be blown with soil, where people and pets track the toxic dust into homes. House dust is a significant toxic exposure route for children; dust in farmworkers' homes tends to have higher concentrations of pollutants [5].

Initial political response by state and federal governments is a major concern. In August 1998, the Environmental Protection Agency

issued a complex amendment to the rules regarding hazardous waste recycling and land disposal restrictions as those rules apply to "zinc micronutrient fertilizers" derived from hazardous wastes. Within the complicated regulatory jargon lurked a telling statement:

EPA's finding that today's standards are not below a "minimize threat" level is based on the *Agency's inability at the present time to establish concentration levels for hazardous constituents which represent levels at which threats to human health and the environment are minimized* [emphasis added]. As the Agency has explained a number of times, determining these levels on a national basis ... has not yet proven possible. [7]

In plain English, this means that the Agency has not yet determined what levels of toxins in fertilizer might be safe, yet they continue to allow, even encourage, the products to be used to grow America's food. EPA will hold "stakeholder" meetings in Seattle with members of the fertilizer industry and environmental groups in the fall of 1998.

The Governor of Washington has gotten a bill passed in Washington's short legislative session; that legislation adopts extremely weak Canadian soil standards for metals that will not stop toxic waste from being spread on farms and backyard gardens. The New York legislature has proposed an outright ban on the practice of using toxic waste in fertilizer. However, there are currently no federal plans to adopt a national prohibition on this practice, and indeed, EPA continues to appear supportive of the process.

SEWAGE SLUDGE

"I am appalled at what I would term the 'total disregard for human health' and the fact that the Environmental Protection Agency is actively promoting and is, in fact, lulling communities throughout the United States into initiating programs for the composting of sewage sludge," said Melvin Kramer, an infectious disease epidemiologist who has been researching the

issue since the late 1970s. He says the EPA's plan for sludge disposal poses "a significant health hazard to the population in general, but especially to the elderly, children, and the infirm, both in terms of nuisances as exemplified by excessive putrid odors and minor allergic reactions . . . to life-threatening diseases. [8]"

Sludge is the non-liquid portion of the waste that flows through a sewage treatment plant. As with "recycling" of hazardous industrial wastes for their mineral content, the use of sewage sludge, or "biosolids," is being touted by many as a way to recycle the nutrient potential of human waste. In theory, this could be beneficial both to farmers and municipalities, if human waste and industrial waste were segregated. As the Cornell Waste Management Institute at Cornell University notes, "While recycling sludges is a desirable goal, caution is warranted since many pollutants are persistent and agricultural soils are irreplaceable [9]." Indeed, sewage sludge from most major metropolitan areas does not contain only the wastewater from residential areas, but also the toxic effluent from industrial dischargers deemed too small to require their own National Pollution Discharge Elimination System (NPDES) permit from the state regulatory agency. These small industrial dischargers may include metal plating operations, dry cleaners, hospitals and dental clinics (which may discharge mercury, solvents, and other toxic chemicals), and any number of other businesses that can dump legally small amounts of pesticides, solvents, heavy metals, polychlorinated biphenyls, and other chemicals down the sewer. What's more, there may be hundreds of industrial dischargers to one publicly owned treatment plant, which means that, in the aggregate, the "small" amounts of toxics released by individual businesses add up to tons of pollution.

The primary and secondary treatment utilized by most treatment plants involve bacteria to digest organic wastes and are in no way intended or able to handle heavy metals or synthetic chemicals. Thus, those compounds -- over 60,000 toxic substances and chemical compounds [10] -- pass through the treatment plant largely intact and remain in the sludge. For

example, the Cornell Waste Management Institute estimates that 90 percent of the dioxins in wastewater entering a POTW will be retained in the sludge [11]. When that sludge is applied to farm fields, the crops may take up the toxic constituents.

Dr. Stanford Tackett, a chemist and expert on lead contamination, has warned, "The use of sewage sludge as a fertilizer poses a more significant lead threat to the land than did the use of leaded gasoline," he says. "All sewage sludges contain elevated concentrations of lead due to the nature of the treatment process. . . . From the standpoint of lead alone, sludge is 'safe' only if you are willing to accept a lowered IQ for the young children living in the sludge area. And what about the other toxins?" [12] It is important to note that in the U.S. Environmental Protection Agency (EPA) "Part 503" rules "allow the application of sludges with metals up to the ceiling limits to be used in home gardens." [13]

Many communities, including metropolitan areas, are already marketing their sewage sludge for agricultural uses, either through direct land application or through retail sales as fertilizer products. "Milorganite," which has been produced by the city of Milwaukee for 70 years, is one such product. Milorganite production has been fraught with problems, including two explosions; \$4.5 million in costs associated with repairs and other expenses related to the accidents; and violation of its DNR air permit for the discharge of volatile organic compounds [14]. Chicago, Houston and Los Angeles also commercially market their sludge fertilizer. Other cities give away their sludge, because as one consulting firm put it, "Regardless of the solids treatment process employed, the residual is the waste of a wastewater treatment process, a byproduct that is not highly sought after." [15]

In public comments on the draft national standards for organic agriculture, consumers have voiced their resounding opposition to sewage sludge [16]. In addition to what many believe are true health and environmental risks from agricultural use of sewage sludge, farmers and food producers must face the perception of

risk by many consumers and the economic impacts of buying decisions based on those perceptions. Consumers appear generally unaware of the extent and scope to which sewage sludge is already being used in conventional agriculture.

CONCLUSION

IATP's Food Safety Project will continue to raise these important emerging food safety issues to consumers, farmers and policy makers through education and through partnership with other groups active in these areas. We will also seek to document the extent of the problem -- particularly in the Midwest, where the toxicity of industrial waste-derived fertilizers has received little media attention and where use of fertilizers to grow corn, wheat and soybeans is high.

The ultimate choices reside with the farmers, when they make informed choices about what inputs they use on their fields to raise food; and with consumers, when they select food to feed their families. Everyone has the right to know what was used to grow their food, and to choose the foods they believe are safest and healthiest.

To learn more about IATP's work on agriculture and the environment, visit our web site: <http://www.iatp.org/>. For information on the Food Safety Project, contact Jackie Hunt Christensen, Institute for Agriculture and Trade Policy, 2105 1st Avenue South, Minneapolis, MN 55404. Phone: 612-870-3424; fax: 612-870-4846; e-mail: jchristensen@iatp.org.

Citations:

1 *Factory Farming: Toxic Waste and Fertilizer in the United States, 1990-1995*, Environmental Working Group, 1998: Washington, DC. p. ii.

2 *Ibid.*

3 Phone conversation with Robin Schoen-Nessa, Washington State Department of Agriculture, May 21, 1998.

4 "High Levels of Lead Found in Fertilizer; Arsenic, Metals Used Are Safe, Company Says," *Dallas Morning News*, March 30, 1998.

5 "Pesticides in household dust and soil: Exposure pathways for agricultural families," *Environmental Health Perspectives*. 103(12): 1126-1134.

6 *Toxic Wastes Used in Fertilizer in Washington: An Analysis of the Federal Toxics Release Inventory, 1990-1995*, Environmental Working Group, 1998: Washington, DC. p. 1.

7 40 CFR Part 268 Hazardous Waste Recycling; Land Disposal Restrictions; Final Rule, *Federal Register*: August 31, 1998 (Volume 63, Number 168)

8 Melvin N. Kramer, Ph.D., executive summary of testimony given Oct. 1, 1992 before the U.S. House of Representatives, Committee on Merchant Marine and Fisheries, Subcommittee on Coast Guard Navigation, Hearing on Ocean Dumping Enforcement and the Current Status of Research Efforts, pp. 1-2, as cited in *Toxic Sludge Is Good For You, Lies, Damn Lies And The Public Relations Industry*, John Stauber and Sheldon Rampton, Common Courage Press, 1995, pp. 107-108.

9 *The Case for Caution: Recommendations for Land Application of Sewage Sludges and an Appraisal of the U.S. EPA's Part 503 Sludge Rules Working Paper*, Ellen Z. Harrison, Murray B. McBride and David R. Bouldin, Cornell Waste Management Institute August 1997, p. 3.

10 *Toxic Sludge Is Good For You*, p. 104.

11 *The Case For Caution*, p. 3.

12 Stanford L. Tackett, "The Myth of Sewage Sludge Safety," delivered at the Municipal Sewage Sludge Conference, State College, PA, May 21, 1994, as cited in *Toxic Sludge Is Good For You*, p. 108.

13 *The Case For Caution* p. 9.

14 97-6 *Milwaukee Metropolitan Sewerage District Report Summary*, <http://www.legis.state.wi.us/lab/97-6summary.htm>

15 *Evaluation of Alternative Technologies for Solids Handling at the Metro [Minneapolis/St. Paul, MN] Plant*, CH2M Hill, January 1998, p. 23.

16 "USDA to Make Fundamental Changes in Proposed Rule on Organic Standards," *USDA press release*, May 8, 1998.