'Sludge Magic' at the EPA

BY DAVID L. LEWIS

According to scientists working for the U.S. Environmental Protection Agency's Office of Research & Development, the sludge rule on land application of municipal wastes (40 CFR Part 503) promulgated in 1993 may be the most scientifically unsound action ever taken by the agency.

Rather than being protective, the rule actually threatens public health and the environment.

In brief, the EPA's sludge rule permits land application of dried urban sewage — called "sludge" — in lieu of dumping it in the ocean, which is now prohibited.

About half of the sludge from municipal waste-treatment facilities across the United States, containing human sewage, agricultural runoff and industrial wastes, is now being used to fertilize farmland, national forests and other areas.

This amount is rapidly increasing as states and waste-disposal companies pressure local communities to use sewage sludge and assure the public that the EPA has determined it to be virtually risk-free.

In 1972, Congress amended the Clean Water Act directing EPA to develop regulations for disposing of sewage sludge. A U.S. District Court in Eugene, Oregon, followed suit in 1990, issuing a consent decree requiring the agency to promulgate the regulations within two years.

Remarkably, the agency's position on this issue reveals a sort of environmental doublespeak: Traces of pesticides, heavy metals and industrial wastes that environmental officials have long argued cause cancer, and other major public health problems are now said to be completely safe for disposal on farmlands, forests, even home lawns and gardens.

The science behind the EPA's sludge rule, according to some of the agency's own scientists who reviewed it, was so bad it was popularly deemed "sludge magic."

Because sludge contains human pathogens and trace quantities of mercury, lead and other toxic metals, applying it to areas used for growing food crops and selling bags of it to home gardeners is a source of concern. Ecologists also have reservations about the effects of nutrients, toxic metals and other pollutants leaching from sludge into surface and ground water.

Indeed, government researchers in Canada collaborating with scientists at the University of Quebec last year published a study showing that forests treated with sewage sludge released toxic metals in amounts that exceeded water-quality criteria for protecting aquatic organisms.

Disease-causing microorganisms that can lie dormant or proliferate in soil treated with sludge are even more disconcerting to microbiologists. Samples taken this year from land in north Kansas City contained 650,000 salmonella and E. coli bacteria per 100 grams of soil — many thousands of times higher that what is considered safe by public health officials. The source, apparently, was sludge applied in the area before 1992.

The appearance of new strains of staphylococcus, tuberculosis, E. coli and other bacteria — some of which are completely resistant to modern antibiotics — has led to a resurgence of life-threatening infections that were once easily treated.

Spreading sludge, which contains some superbugs flushed down hospital sewer lines, on farms and home gardens throughout the United States has scientists both inside and outside of the EPA understandably concerned.

With increasing numbers of children dying from E. coli strain O157, traced to an assortment of products, including strawberries and hamburger meat, people are becoming increasingly concerned over agricultural products imported from less developed areas of the world where human waste serves as cheap fertilizer.

Meanwhile, content that syringes and rubber gloves no longer litter our beaches, few policy-makers and reporters seem even slightly curious about how our government solved the problem of ocean dumping of municipal wastes.

Still, it is what the EPA's sludge rule says about many of the agency's other regulations that seems most enigmatic. When asked why pesticides, organic solvents, toxic metals and other pollutants in sludge pose virtually no risk to public health or the environment, agency officials point to a lack of documented cases of anyone becoming sick from exposure to sludge.

Critics argue that the same can be said of traces of pesticides and other industrial chemicals in drinking water. EPA's position on sludge, they say, shows that agency regulations are based on political expediency, not sound science.

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