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IMPROVED!**



A protocol for investigating health complaints following biosolids land application

Pilot Testing: Surveillance and Investigation of the Illness Reported by Neighbors of Biosolids Land Application and Other Soil Amendments (08HHE5PP)

The Central Issue

Land application of biosolids is regulated and is guided by treatment requirements, risk characterization of contents, and best management practices. What has been missing – up until now – is a systematic and scientifically sound process to investigate and evaluate complaints of health symptoms or related concerns at the local (site) level.

Context and Background

Since the 1970s, U.S. EPA and the wastewater treatment industry have been challenged by the production of sewage sludge, defined by the Clean Water Act as “the solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage,” and biosolids defined as “sewage sludge that has been treated to meet the land application standards in Part 503 rule or any other equivalent land application standards.” Complaints have occurred over the application of biosolids. While not numerous in relation to the total number of sites at which biosolids are land applied, the complaints are of concern.

Part of the impetus for this research was a recommendation in the National Research Council’s 2002 review of the U.S. EPA biosolids management regulations and the science behind them. This research pilot tested a five-step investigation protocol (06HHE5PP). It included the administration of questionnaires to neighbors of land application sites complaining of health effects, to biosolids generators, and to applicators. The protocol documents the location of the site and pertinent site characteristics. Such a field-tested protocol could be used to collect a large sample of data on investigations of health symptoms and other concerns. The goal of the project was to verify the effectiveness of the protocol, so that it may be used in future to efficiently collect data on potential, health impacts from

Investigators understand that in order to get the protocol put into practice, outreach is essential.

land application. This will help investigators as they develop understanding of the cause and effect relationship of concerns related to land application of biosolids and other soil amendments.

Findings and Conclusions

The protocol was evaluated and refined using 33 real-life complaints from three states. The resulting protocol (08HHE5PP-P, next page) outlines:

- Field-tested and validated rapid response surveillance and standard investigation questionnaires that are practical, easy to use, efficient, and effective for investigating complaints of health symptoms purportedly caused by the land application of biosolids and other soil amendments.
- An implementable communication and outreach plan for an audience of federal, state, and/or local biosolids stakeholders.
- Suggestions for a possible multi-jurisdictional surveillance and rapid response investigation system with centralized, efficient, web-based data collection and analysis.

Management and Policy Implications

While there is not a regulatory driver, the protocol can be used on a voluntary basis by a broad base of local, state, and federal public health officials, and state biosolids regulatory agencies and biosolids generators and land applicators to investigate complaints of health symptoms or concerns from land application of biosolids or other soil amendments.

Executive Summary



Pilot Testing: Surveillance and Investigation of the Illness Reported by Neighbors of Biosolids Land Application and Other Soil Amendments

“This field-tested and validated protocol has helped to advance the 2002 NRC recommendations.”

Gary Toranzos, University of Puerto Rico



Information obtained through the protocol can help in our understanding of concerns about the land application of biosolids.

Related WERF Research

Project Title	Research Focus
Epidemiologic Surveillance and Investigation of Symptoms of Illness Reported by Neighbors of Biosolids Land Application Sites (06HHE5PP)	In 2007, researchers at the University of North Carolina completed development of a five-step protocol for investigating possible causes of problems at land application sites that lead to complaints of health impacts. This project developed the five-step draft protocol for use by local, state, and federal health and environmental officials. Pilot testing, refinement, and successful implementation of the draft protocol (Phase II) could provide information about the occurrence of reported symptoms near sites where soil amendments, including biosolids, animal manures, food residuals, and others are applied to land.
A Protocol for the Surveillance and Investigation of the Concerns Reported by Neighbors of Land Application (Biosolids and Other Soil Amendments) (08HHE5PP-P)	Field-tested protocol includes a public health questionnaire that can be used by health and regulatory officials to collect data on complaints of alleged health symptoms, nuisance odors, or quality of life effects from neighbors of sites where biosolids, manure, and other materials are land applied. The protocol also includes a generator questionnaire that can be used by wastewater treatment plants to characterize land applied biosolids, and an appliers' questionnaire that can be used by biosolids land appliers to document methods of application. The protocol includes two site investigation reports that can be used to locate, describe, and characterize the land application sites of concern.

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