

## **Farmland application of sewage sludge raises environmental justice concerns**

By Nancy Lamontagne

People who live close to farmland where treated sewage sludge is applied to the soil said they experience physical symptoms, smell offensive odors, and are angry about the practice, according to a new study from NIEHS grantees at the University of North Carolina at Chapel Hill (UNC) Gillings School of Global Public Health. The [study](http://www.ncbi.nlm.nih.gov/pubmed/23562940), (<http://www.ncbi.nlm.nih.gov/pubmed/23562940>) which was supported by the [NIEHS Partnerships for Environmental Public Health](#), indicates a need for involving community members in the decision-making process about land application of sewage sludge.

Researchers found that health concerns recorded in this study were consistent with other reports, but they did not expect so many respondents to express feelings of injustice over the spreading of urban wastes called “sludge” in rural areas.

“Many of the people interviewed reported a lack of public notification about land application in their neighborhood, and said they had difficulty reporting concerns to public officials and influencing decisions about how the practice is conducted where they live,” said [Amy Lowman](http://www2.sph.unc.edu/index.php?option=com_profiles&Itemid=6711&profileAction=ProfDetail&pid=709960557), ([http://www2.sph.unc.edu/index.php?option=com\\_profiles&Itemid=6711&profileAction=ProfDetail&pid=709960557](http://www2.sph.unc.edu/index.php?option=com_profiles&Itemid=6711&profileAction=ProfDetail&pid=709960557)) research associate in epidemiology at UNC and the study’s first author.

### **Responding to a community need**

“Rural residents who knew about our previous studies of health impacts of hog waste contacted us about illness and noxious odors that they associated with the use of treated sewage sludge on farmland near their homes,” said [Steve Wing, Ph.D.](http://www2.sph.unc.edu/index.php?option=com_profiles&Itemid=1894&profileAction=ProfDetail&pid=702514616), ([http://www2.sph.unc.edu/index.php?option=com\\_profiles&Itemid=1894&profileAction=ProfDetail&pid=702514616](http://www2.sph.unc.edu/index.php?option=com_profiles&Itemid=1894&profileAction=ProfDetail&pid=702514616)) associate professor at UNC and a co-author of the study. In response, the researchers interviewed 34 people from North Carolina, South Carolina, and Virginia who lived near fields where sludge is applied as a soil amendment.

More than half of the study participants reported physical symptoms such as eye, nose, and throat irritations and gastrointestinal symptoms. Most of them said that the unpleasant odors from the sludge disrupted their daily activities and socializing with family and friends.

“Researchers and public officials responsible for permitting land application of sludge from municipal wastewater should not be so dismissive of neighbors’ reports of illness,” Wing said.



*Treated sewage sludge, the solid byproduct of wastewater treatment, is often applied to farmland as a soil amendment in the United States. (Photo courtesy of Sustainable Sanitation Alliance)*



*More than half of the people interviewed in Lowman’s study reported physical symptoms, which they associated with the land application of sludge. (Photo courtesy of UNC)*

In addition to being angry over not being informed that sludge was being applied near their homes, the people interviewed also said that regulators seemed unconcerned with violations of land application rules, and that public officials do not respond to reported concerns. Study participants wanted improved monitoring and better enforcement of regulations, and several said they would like public officials to directly notify residents near application sites prior to every application, so they can prepare and take precautions.

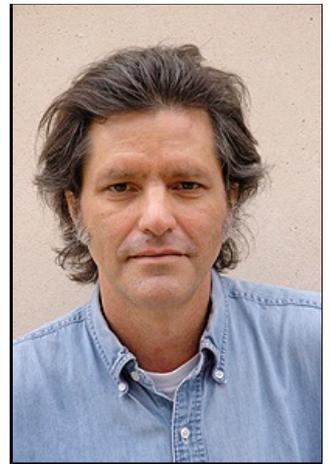
“It may also be helpful to provide a way for neighbors of treated sludge fields to report possible violations, such as application during rain events or runoff of sludge into waterways, so potential problems can be promptly addressed,” Lowman said.

Wing outlined several changes that could lessen the impact of land application of sludge. In the short term, these modifications include decreasing the frequency and amounts of sludge applied, increasing buffers between application sites and neighbors, and improving the treatment of sludge to reduce pathogens and bacterial regrowth.

“In the long run, it will be important to eliminate industrial wastes that are released to domestic treatment plants, and to address the sustainability of using potable water, which will be increasingly scarce as climate change occurs, to flush human waste,” Wing said.

*Citation: Lowman A, McDonald MA, Wing S, Muhammad N. (<http://www.ncbi.nlm.nih.gov/pubmed/23562940>) 2013. Land application of treated sewage sludge: community health and environmental justice. Environ Health Perspect; doi:10.1289/ehp.1205470 [Online 11 March 2013].*

(Nancy Lamontagne is a science writer with MDB Inc., a contractor for the NIEHS Division of Extramural Research and Training, Superfund Research Program, and Worker Education and Training Program.)



*Wing said that researchers and public officials responsible for permitting land application of sludge from municipal wastewater should not be dismissive of neighbors' reports of illness. (Photo courtesy of UNC)*

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