

# BIO SOLIDS NEWS

News and Information from the Virginia Biosolids Council • July 2008

*Revision of regulations underway*

## DEQ takes charge of land application

On January 1, 2008, the Virginia Department of Environmental Quality (DEQ) assumed regulatory oversight over all biosolids land application activities in the Commonwealth. We asked Neil Zahradka, Manager-Office of Land Application Programs, to provide an update on the program and his perspective. It is provided below.

The DEQ Office of Land Application Programs now directs the administrative, permitting and compliance functions for biosolids land application in the Commonwealth. In addition to biosolids, this new office is also responsible for regulations associated with industrial sludges, septage, animal feeding operations, and water reclamation and reuse.

As compliance assurance is a primary goal of the DEQ program, staff began unannounced compliance inspections of land application activities the first week in January, conducted by biosolids specialists located in DEQ's seven regional offices.

A list of DEQ biosolids staff and their respective regional assignments can be found at [www.deq.virginia.gov/export/sites/default/vpa/pdf/DEQBiosolidsContacts.pdf](http://www.deq.virginia.gov/export/sites/default/vpa/pdf/DEQBiosolidsContacts.pdf).

From January 1 through April 30, DEQ staff inspected 303 distinct application fields, with some fields being visited more than once. Inspections have identified conditions that resulted in the issuance of three warning letters, with application rates and buffer zones included in the issues identified.

DEQ also is administering the biosolids land applier training and certification program. Land appliers operating under an existing Virginia Department of Health (VDH) biosolids use permit were required to have a certified applicator on site during land application activities beginning on or after April 1, 2008 and land appliers operating under DEQ permits by July 1, 2008. Over 100 persons have now been certified under the program.



Clyde Gantt of DEQ's Tidewater Regional Office inspects a site.

Certified land appliers are required to obtain at least four hours of continuing education every two years.

This requirement can be met by attending training held by DEQ, or attending other biosolids training with pre-approval from the agency. Persons interested in becoming certified should contact Christina Wood at the DEQ Central Office by phone at (804) 698-4263 or email [cmwood@deq.virginia.gov](mailto:cmwood@deq.virginia.gov).

Permits that were issued by the VDH will remain valid through their expiration date, with DEQ VPA permits being required for all new land application sites. Permit modification requests submitted to the VDH regarding addition of land that were not completed before January 1, 2008 must go through the VPA permit issuance process. All VDH biosolids use permits must be converted to DEQ VPA permits, and complete VPA permit applications for any administratively continued VDH permits must be received by June 1, 2010. Permit applications should be sent to the DEQ regional office serving the county where the land application activity is proposed.

Although land application permits are no longer issued through the VDH, they remain involved in the biosolids program in an advisory capacity for the DEQ regarding human health issues. The DEQ has been con-

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*The Virginia Biosolids Council supports the land application of biosolids in Virginia through information and education on the beneficial use and safety of biosolids. The Council is supported by municipal wastewater treatment plants, land application companies and biosolids users, and is available as a resource to those who need information about the recycling of biosolids.*

# Researchers test biosolids drought resistance

For years farmers have reported that crops grown in biosolids amended soil appear to be more drought resistant than crops that don't receive biosolids. Now, researchers at Virginia Tech think they know why.

Improvements in soil structure from the organic matter that biosolids provide may account for some of this effect, but researchers at Virginia Tech led by Dr. Erik Ervin and Dr. Greg Evanylo of the Department of Crop and Soil Environmental Sciences speculate that something else is going on. For the past few years, they've been investigating the effects of biosolids to enable crops to better withstand drought stress in greenhouse studies.

Ervin and Evanylo believe that biosolids contain biologically active substances that enable crop to withstand environmental stress, including drought. The greenhouse offers a controlled environment in which it is easier to measure impacts such as stress response.

Detailed analysis of various types of biosolids has confirmed that they contain substances such as hormones, humic acids, vitamins, and amino acids that are important either as plant growth regulators themselves or as feedstock for microbes that can produce such plant biosimulants.

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## New regulations for biosolids

sulting with local VDH Health District Directors when citizens have health complaints or concerns, and is working with VDH to develop specific procedures that will guide the interaction between the two agencies when adjoining landowner health complaints are received, whether before or after permitting.

DEQ is also in the process of initiating regulatory revisions to improve the biosolids program. To this end, DEQ published a Notice of Intended Regulatory Action (NOIRA) in the Virginia Register on June 23, 2008, with a public comment period open through July 31.

This regulatory action is designed to streamline the program, provide consistency among all those land applying biosolids, complete regulatory actions begun at the VDH, and address other issues noted to be of concern to the agency as well as to the public. More details can be found on the Virginia Town Hall website at <http://www.townhall.state.va.us/L/ViewAction.cfm?actionid=2625>.



Dr. Xunzhong Zhang examines grass that is being studied as part of the Virginia Tech research on the drought resistance of biosolids.

The researchers also have confirmed that plants grown in biosolids-amended potting media contain higher levels of various plant growth regulators than plants grown in soil without biosolids. Their analyses show that the concentrations of these substances are very small, in the range of several parts per million, but the researchers believe this is enough to make a significant impact. And they have been able to show that, at least in some cases, the plants grown in the soil with biosolids were more tolerant of drought stress than the plants grown without biosolids.

Now the researchers are ready to test their theory in the real world outside the greenhouse. They hope to soon launch a field trial in which they will grow corn with and without biosolids and try to document the effects of plant growth regulators.

The work is not just of academic significance. If the researchers can document that a certain pathway leads from constituents in biosolids to the production of a particular plant growth regulator, the wastewater treatment plant managers that produce biosolids may be able to modify their processes to boost production.

Farmers will benefit from such "designer" biosolids by producing higher yielding and quality crops under environmental stress. These advantages may become even more important under the stresses produced by the continuing predicted climate change.

A public meeting to address the proposed revisions of the biosolids regulations will be held on July 24 at 1:00 PM at the DEQ Piedmont Regional Office in Glen Allen.



Biosolids News is published by the Virginia Biosolids Council  
P.O. Box 72893 • Richmond, VA 23235  
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