

# 2010-2011 Accomplishments



## NORTHWEST BIOSOLIDS MANAGEMENT ASSOCIATION



### Education & Information



- ☀ Hosted General Membership, Board & Committee Meetings
  - Featured a tour in Seattle, WA on April 26, 2011 to visit two urban agriculture projects using biosolids compost (Danny Woo Garden pictured to left)
- ☀ Presented “Making Our Mission Reality: Supporting Sustainable Biosolids Initiatives in the Pacific Northwest” at the 2011 WEF Biosolids & Residuals Conference in Sacramento, CA
- ☀ Organized a workshop at Washington State University-Puyallup highlighting the use of biosolids to revitalize urban landscapes.

- ☀ Produced monthly Biosolids eBulletin and Technical Resource Library
  - Received additional support from other regional associations to utilize library
- ☀ University researchers provided biosolids presentations to schools, public agencies and organizations such as BioCycle, Soil Science Society of America, Kansas State University and Master Gardeners
- ☀ Co-sponsored the 2010 Excellence in Biosolids Management Award with Oregon Assoc. of Clean Water Agencies & Pacific NW Clean Water Assoc.
- ☀ Held 2010 & 2011 Biosolids Management Conferences

### Regulatory Coordination

- ☀ Provided comments to U.S. EPA on Proposed Solid Waste Rule and the inclusion of wastewater sewage sludge
- ☀ Participated in Wahkiakum County Board of Commissioners meeting to review biosolids safety
- ☀ Forwarded a letter to the Mayor of San Francisco in support of the city’s biosolids compost program
- ☀ Signed Amicus Brief to the Supreme Court to support cross boundary transportation and beneficial use of biosolids (City of Los Angeles vs. Kern County)
- ☀ Submitted comments on the Canada -wide Approach for Management of Wastewater Biosolids
- ☀ Tracked Washington State legislation affecting biosolids (Revenue Bill & Phosphorus Limit Bill)



### Research & Demonstration

- ☀ Hosted presentation by UW on removal of endocrine disrupting chemicals during wastewater treatment
- ☀ Featured Research Short Stories in monthly Biosolids eBulletin
- ☀ Presented Biosolids & Reclaimed Water Research Day in Renton, WA
- ☀ Coordinated Urban Agriculture program for the PNCWA Puget Sound Section meeting featuring carbon sequestration research and tour of the King County South Treatment Plant agriculture demonstration sites

## 2010-2011 NBMA & Member Agency Funded Research

NBMA and member agencies continue to fund research on trace organic chemicals and pathogens and their potential effects on the environment following land application of biosolids. Results of these studies will help biosolids managers respond to questions from community members and regulators.

- University of Arizona (UA) completed a research study on the fate of fire retardant chemicals (poly-brominated diphenyl ethers, or PBDEs) in land applied biosolids. No estrogenic activity was detected in soil samples. A risk assessment showed that risks to human health from PBDEs in biosolids are negligible.
- University of Washington (UW) studied fate of organic compounds in biosolids that originate from pharmaceutical and personal care products, and found they degrade rapidly in soils, do not move in water and are not taken up by plants.
- UA developed a method to study survival of prions in biosolids; early tests indicate prions do not survive solids digestion.



NBMA research and demonstration program is helping to develop new markets and products for biosolids use.

- UW and Washington State University (WSU) are evaluating use of biosolids products for sustainable development projects, such as stormwater retention, nutrient removal, and development of rain garden soil mixes.
- WSU and Oregon State University (OSU) continue to evaluate landscape plant performance and soil quality after using biosolids and yard debris composts to 'remediate' compacted urban soils. Data indicate biosolids blends were equal to or better than yard debris compost in establishment and survival of plants.
- WSU previously showed that a variety of wood waste materials can be used to create a high value potting media suitable for greenhouse and nursery plant production. A second phase of this research will help fine-tune product specifications.
- OSU research has shown that biosolids composts outperform manure-based composts for production of woody ornamental plants such as azalea and blueberry. A new study will determine the effectiveness of composts in suppressing root rot disease in greenhouse grown blueberry plants.
- WSU established biofuel oilseed plots using heat dried and dewatered biosolids. Researchers evaluated canola, camelina, and mustard yield performance. All crops responded well to biosolids, but canola had vigorous growth.
- WSU continues to document long-term benefits of biosolids in dryland wheat production, including increases in crop yield, soil organic carbon and nitrogen.
- WSU is involved in numerous extension activities, sharing the science of biosolids recycling at workshops and field days, Master Gardener classes, Compost Operator training and other WSU events.

NBMA researchers are exploring how to use biosolids as a tool to reduce greenhouse gas emissions by storing carbon in the soil

- A UW and WSU project documented long-term benefits of biosolids and compost amendments on carbon sequestration and soil quality in a variety of agricultural ecosystems across Washington State. Organic residuals increased carbon storage, soil water holding capacity and nitrogen content at all sites.
- UW scientists continue to measure plant response, soil carbon concentration and nitrous oxide (N<sub>2</sub>O) emissions from biosolids amended soils, and will use data to help establish management practices to minimize N<sub>2</sub>O emissions.
- UW helped develop a greenhouse gas accounting tool for biosolids management, allowing comparison of the greenhouse gas impacts of different biosolids options.

