

## **2012 PROGRAM WORK TEAM ANNUAL REPORT**

Managing Wastes: Composting and Land Application

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## Activities, Accomplishments, Outcomes and Impacts:

The Managing Wastes PWT had a very active year conducting formal and informal interface to engage diverse stakeholders. Goals were identified and stakeholder interaction occurred through research projects and outreach. Livestock farmers, compost producers, government agencies, other universities and colleges, NGOs, private consultants, waste management companies, as well as Cornell Cooperative Extension educators and Cornell faculty and departments are represented on the PWT and work with CWMI to continue to address waste related issues. We also participate in other related PWT's to see if there are other collaborations and waste related needs with which we can assist.

Effectively managing and reducing waste can turn unwanted waste products into resources while avoiding disposal costs and reducing demand for landfill space. Stakeholder interest continues in the use of organic residuals in agriculture, on-site food-scrap composting and in adding value to what was once considered waste. The demand for research, education and outreach on organic residual management is high. Residuals such as manure, food and dairy processing residuals, mortality, post-consumer food waste and yard waste can be excellent sources of nutrients and carbon, and have the potential to be valuable amendments for use in agricultural/horticultural production, energy production and erosion control.

One of the important roles CWMI plays is convening people interested in waste management so that they can work together to affect change. Throughout the year, new and old issues surface. We can deal with easy issues quickly while others take a group of people to look at all aspects of the problem and give it direction. For several years, the focus has been primarily on agricultural wastes, but recently our constituents have indicated that there is a need to re-energize our education programs specifically on small and medium-scale on-site organics management. Homeowners, schools, restaurants, businesses and small municipalities are all seeking ways to manage their organic residuals either on-site or "close to home". 110 people participated in 1.5 day "Organics Management" sessions in cooperation with the state recycling organization (NYSAR<sup>3</sup>) and NYSDEC. This session allowed participants to hear about pilot projects, educational models, school and college programs and organics reduction strategies, as well as how to plan and fund organics management programs.

In addition, the Managing Waste PWT held three events to address ways to manage organic residuals. The first event took place in Greenwich, NY where a group of 30 diverse stakeholders got together to discuss connecting organics with users, municipal composting efforts, legislation and marketing of compost and implementing the NY State's Solid Waste Management Plan. A tour of a farm that is capturing and using the heat produced from composting animal manure to heat the water used by the farm allowed for networking between citizens, municipal workers, government personnel and educators. The second and third events grew from the first as participants had indicated that a workshop in Western NY on composting basics, as well as being able to see composting in action (both large and small) was important. A two-day tour and workshop took place with collaborators including CCE, Cornell ILR School, NYS Department of Ag and Markets and the Environmental Finance Center at Syracuse University. Forty-five participants from around the state toured five facilities that are managing organic residuals in a variety of ways, and the following day, 39 participants attended a workshop on the basics of composting, compost quality, controlling wood waste that may be affected by Emerald Ash Borer, troubleshooting common compost problems and mortality composting. Cornell ILR spoke about health and safety issues for the compost worker.

CWMI has been moving forward with implementation of programs that will help NYSDEC meet its solid waste management goals as building additional infrastructure to manage more organics is a priority. We worked with farms and municipalities to expand the feedstock they accept, not only for the benefit to the composting process, but also to recycle more nutrients and organic material. CWMI's Compost Facility Map (<http://compost.css.cornell.edu/maps.html>) helps facilitate the movement of organic feedstock to compost facilities; over 12 new facilities are managing more organics.

Participation in meetings and projects helped to reach hundreds of NYS homeowners, farmers, veterinarians, agency staff, educators, students, composters and others with up-to-date research-based information and also served to help set direction for research, policy and outreach activities. Cornell Cooperative Extension asked CWMI to facilitate a series of regional staff and volunteer trainings that would cover compost and soil basics. One hundred and twenty CCE agents and volunteers were trained in seven meetings and have passed on the training to their constituents. Cornell has agreed to give college credit to students that participate in the Tompkins County Cooperative Extension master composting class. The first class was held in Spring 2012 with lectures given by Cornell Faculty and Extension Staff.

Substantial progress was made on numerous PWT goals including answering research questions on managing organics, continued outreach and helping stakeholders learn about managing organics. Materials on waste management and the science and biology of composting, have been developed and used in workshops where over 130 college students, teachers and citizens were empowered with the tools to teach waste management in elementary and high schools, including composting of food scraps. Curricula, games and posters are available in both English and Spanish. An even larger audience was reached via a new fact sheet posted on our website "Composting at Home: The Green and Brown Alternative" (<http://cwmi.css.cornell.edu/compostingathome.pdf>). This 12-page fact sheet is designed to help homeowners and small scale composters close the loop: manage organics on-site, improve soils and grow plants for consumption that will then go through the loop again, achieving sustainable organic residuals management while reducing fossil fuel inputs and converting waste into resources.

Our continued interactions with community stakeholders through gardening events and discussion forums, urban farming workshops and responding to information requests by email and phone have clearly indicated that our "Healthy Soils, Healthy Communities" and soil quality resources (<http://cwmi.css.cornell.edu/soilquality.htm>) are in demand and being used frequently. Work continues on helping gardeners to understand how to interpret metal contamination in soils and use best management practices for healthy and safe gardening.

Another PWT goal, managing mortalities through composting, continues to be a focal point for research and outreach. Composting as a management tool has its place in CAFO plans, emergency response, disease outbreak and disasters and routine mortality. CWMI works with 20 universities to improve management of routine and mass mortality. In a CWMI collaboration with Penn State University, the Natural Rendering program (<http://cwmi.css.cornell.edu/mortality.htm>) has grown to include the development of a new fact sheet "Horse Mortality: Carcass Disposal Alternatives" and a DVD "Natural Rendering for Horses – Composting Horse Mortality. These resources are used in programming to give horse owners disposal options. Research conclusions are included in the information so that livestock owners have good information on disposal of euthanized animals. The PWT played a significant role in

developing a national conference on mortality management that engaged stakeholders from industry, universities, research institutes and government agencies.

CWMI collaborates with other Cornell departments to play a major role, particularly regarding generation and use of wastes in agriculture and communities. CWMI delivers research-based knowledge around the world. Our continuously updated web site (<http://cwmi.css.cornell.edu>) now has a blog section that communicates our current efforts. We share key information via a 4,558-person e-mail list. CWMI replies to over 360 requests for information per month via e-mail and phone. Fifty-two videos and documents are archived on eCommons and our videos on YouTube have received 11,232 viewings. CWMI's reach was extended by working with Extension educators from more than 42 counties in 2012.