

Wisconsin Department of Agriculture, Trade and Consumer Protection
Agriculture Development and Diversification Program
2002-03 Grant Project Narrative Report No. 1

Date: **January 21, 2003**

DATCP Contract No.: **17048-UW Project 133-
FF21**

Project Title: **Developing Soil Amendment Products from Organic Residuals in Wisconsin's Fox River Valley Region**

Project Leader: **Leslie Cooperband, UW Madison Department of Soil Science**

Report For: July-December, 2002

Activity for this period has focused on conducting a feasibility study of additional compost processing sites in Green Bay and the Appleton area, testing of finished compost, growing trials and demonstrations, and facilitating the formation of a feedstock cooperative to process, market and distribute soil amendment products manufactured from organic residuals.

As reported last year, due to the uncertainty of continued operations at the Green Acres Landscaping (BioResource Products, LLC is or was the composting division of the company) composting site (Dave Wiegman), FRVOR staff decided to investigate other processing locations, which are discussed later in this report. Due to insufficient operating capital, Wiegman terminated all of his composting operation staff, and is no longer a participant in our project.

The project coordinator continued to work on the GIS database design to identify and coordinate exchange of organic byproducts within the Fox Valley region that will permit information exchange between organic byproduct producers and processors. A database of approximately 500 organizations and a survey instrument to gather information about feedstock types, quantities and management costs has been developed that will be mailed in early 2003. Data acquired will be used to populate the GIS database, which will be made available on Leslie Cooperband's website in spring 2003.

Progress on the tasks listed in our ADD grant proposal has been as follows:

1. Product development and testing.

We have analyzed chemical and physical characteristics of eight different compost recipes made from all of the FRVOR feedstocks. We then blended each of these composts using a ratio of 50% compost, 25% perlite and 25% vermiculite to use in a greenhouse growth trial with an annual bedding plant (Impatiens). The greenhouse growing trial is described below. In addition, we blended BioResource Products yard debris compost with bark (50% compost and 50% bark) to use in the WI-DOT trial that is also described below.

2. Field greenhouse demonstration and promotion

We conducted growing trials at a UW Department of Soil Science greenhouse using the compost from the eight experimental mixes that were prepared during the first phase of this project. The tests were performed to evaluate physical, chemical and biological characteristics important to plant growth. The data from these tests will identify how the batch materials can be used or blended with other materials to create soil amendments for specific agricultural, horticultural and landscape applications.

The experimental design included the eight compost types plus a peat control blended with perlite and vermiculite as described above. We also included two fertility levels: one with slow-

release fertilizer added and one without. We had a total of five replicates per treatment. We planted impatiens plugs and harvested total aboveground and root biomass at the end of six weeks. We also measured moisture retention in each of the mixes and how frequently they needed to be watered. Results are being analyzed statistically and will be presented to the FRVOR group in the next month.

We continued to work with the Wisconsin Department of Transportation on testing the use of compost for slope stabilization, erosion control, and vegetation establishment on a 100-foot stretch of highway right-of-way, part of the reconstruction of State Highway 10 in Winnebago County. The compost installation was completed on November 15, 2002, and consisted of three different compost/bark treatments (application rates of 1", 2" and 3" blown onto the graded soil surface-on top of 2" of topsoil). The work was originally scheduled for mid-September, but was delayed due to heavy rains that delayed highway construction. FRVOR staff will monitor the site and begin taking measurements on vegetation establishment in early spring 2003. DOT has also agreed to work with FRVOR on the installation of compost filled "socks", a substitute for silt fence, but has not yet identified a site. This demonstration will be done in spring 2003, when construction activities resume.

Leslie Cooperband is currently coordinating greenhouse growing trials with Natural Beauty near Denmark who has agreed to work with us on compost evaluation and testing. We will be starting this trial in late February 2003. We will compare potting mixes with composts with their standard container mix to grow several bedding plant species. Presently, we are working with their plant propagator to design the experiment. The purpose of these trials will be to evaluate economics and performance of the substitution of compost for peat in container mixes. We also plan to conduct a field container trial with Johnson's Nursery in Menomonee Falls, WI in June-July 2003. They produce ornamental shrubs and trees in containers and are considering use of compost as a substitute for peat in their container mix.

3. Market development

Due to the loss of the Compost Operations Director at Bio-Resource Products and other staff, market development activities have been temporarily delayed. The customer database developed by the project coordinator and Bio-Resource Products has been secured, and will be given to whatever entity becomes responsible for compost processing and marketing, which we assume will be the feedstock cooperative described in the next section of this report.

4. Business organization and planning

We raised additional funding from several FRVOR collaborators (\$21,000) to help pay for a feasibility study and 5-year business plan that will evaluate construction and operation of a Feedstock Cooperative at a site owned by the Green Bay Sewerage District, and to identify another processing site in the Appleton area, possibly near Black Creek, Wisconsin, or the Outagamie County Landfill. The proposed Feedstock Cooperative would receive, process, market and distribute soil amendment products. We used the additional funds to hire Amy Pietsch, a business consultant (Preferred Consultants, LLC), to develop a 5-year business and strategic plan for the proposed cooperative, and Peter Moon, an engineering consultant (Price Moon Enterprises) with considerable expertise in composting technology, to provide a study of the proposed operation, and to prepare cost estimates of plant construction at the main and satellite processing sites.

Feedstock cooperative members would be able to reduce their waste management costs through patronage refunds paid from the profit of products marketed by the cooperative. The feasibility study and business plan will be used to identify and encourage equity investors to form the cooperative who would lease and improve the site, purchase processing equipment, and hire staff. We had hoped to be completed by early January, but UW procurement requirements required bidding for the business-planning consultant delayed the start-date by approximately two months. The study is now underway and we expect to complete it by late March 2003. At that time, the Steering Committee will review the study results, and decide if they wish to form the cooperative. If the decision is made to go forward, the cooperative would be formed, a Board of Directors would be elected, funds would be raised for 1st year operations and an equity drive, financing would be secured, the plant(s) would be constructed, and operating personnel hired.

The project coordinator, now employed by the UW Center for Cooperatives, is working closely with other Center staff on cooperative structure alternatives. Margaret Bau, a cooperative development specialist with USDA, is providing additional help on forming the cooperative.

5. FRVOR Steering Committee meetings and Project Publicity

A new Steering Committee has been formed and met formally in September and November. From July 2002 through December 2002, the project coordinator made 20 trips to the Fox Valley area to conduct individual collaborator meetings focused on facilitating formation of the cooperative, and completing the feasibility study. The next planning meeting is scheduled for January 23 2003.

The project coordinator made FRVOR presentations at the Solid Waste Conference in Waupaca, Wisconsin on October 1, 2002, and at the Biocycle Waste to Energy Conference in Middleton, Wisconsin on November 18, 2002. We also made a presentation at the Wisconsin AROW conference (state recycling organization) on January 17, 2003 at the Wisconsin Dells Kalahari Resort.