

## **WI DOT Compost for Erosion Control and Revegetation Project**

Leslie Cooperband  
Asst. Professor  
Department of Soil Science  
University of Wisconsin-Madison

August 13, 2002

Project objectives: To determine the feasibility of compost use for soil stabilization and to establish vegetation on a steep (slope > 3:1) construction site.

Project location and site description: Hwy 10-110 (Outagamie Co.) near Pioneer Rd. The experiment site dimensions are 100 ft. wide with a slope length of approximately 70 ft. The topsoil from the site will be removed and stockpiled so that it can be put back on the project demonstration area before the experimental treatments are installed.

### Experimental design and details:

The 100' width will be divided into three 33.3' sections. The treatments will include three application rates of yard-debris compost-bark mixtures. Given the slope (>3:1), an erosion control mat (Class IA) will be used as the control treatment on the remainder of the site. The Class IA mat is organic and short duration (6 months or greater) netted material. According to Section 625 (625.3.3) of WI DOT Guidelines, topsoil should be spread over the entire site after grading to a depth of 75 mm (approximately 3"). The compost treatments will include applications of either 1", 2" or 3" depth of compost (60% compost, 40% bark) blown onto each 33.3' strip.

Compost treatments and seeds will be applied to the experimental site using a Rexius blower truck.

The compost applicator will seed the entire site with the specified seed mix (type #10) at the WisDOT recommended seeding rate (1 kg seed per 100 m<sup>2</sup> of area or 2.2 lb. seed per 1076 ft<sup>2</sup>; Section 630.3.3.4.1). Seeding will be done concurrent with compost application and placement of erosion control mats.

### Measurements to be taken

UW Staff will measure germination rates, vegetation density and percent vegetative cover. Based on recommendations from UW Turf Specialist Dr. John Stier, we will be using the point quadrat method for estimating percent vegetative cover (Engel and Trout, 1980; Laycock and Canaway, 1980). If time and resources permit, our staff may install small-scale erosion collection units (lawn runoff sampler designed by Roger Bannerman, WI DNR) to estimate soil loss from each treatment.

References:

Engel, R.E., and J.R. Trout. 1980. Seedling competition of Kentucky bluegrass, red fescue, colonial bentgrass, and temporary grasses. p. 379-390. In J.B. Beard (ed.) Proc. 3<sup>rd</sup> Int. Turfgrass Res. Conf., Munich, Germany. 11-13 July 1977. Int. Turfgrass Soc., and ASA, CSSA, and SSS, Madison, WI.

Laycock, R.W, and P.M. Canaway. 1980. A new optical point quadrat frame for the estimation of cover in close-mown turf. J. Sports Turf Res. Inst. 56:91-92.