

## **Scoop and Dump Method of Soil Remediation**

*Background:* Over a 12-year period, the Scoop and Dump method of soil remediation was developed by the Urban Horticulture Institute at Cornell University with the goal of improving plant growth and soil health in managed landscapes. This technique of soil fracturing and incorporation of large quantities of compost was designed as a tool for the remediation of compacted and degraded soils in the urban environment.

*Purpose:* Soils in urban environments often experience conditions that can degrade their quality and their ability to foster quality plant growth. Typical attributes of soils found in urban landscapes include: high bulk density, decreased microbial activity, reduced levels of organic matter, poor structure, low water holding capacity, decreased aggregate stability, and inadequate volume for root proliferation. The Scoop and Dump method of soil remediation is a technique for reclaiming or improving sites that exhibit these conditions by reconstructing the profile via fracturing and incorporation of organic matter. The goal of this technique is to modify the physical properties of the soil to support healthy plant growth.

### *Procedure:*

- 1) Determine desired depth of compost incorporation
  - a. Woody plant beds recommended depth: 18-24 inches
- 2) Determine required compost volume
  - A for an 18" depth, used 6" of compost. For a 24" depth use 8" of compost
- 3) Spread compost to an even depth across the entire site.
  - a. If turf is present apply compost on top of grass.
- 4) Select size of back hoe bucket based on desired depth of incorporation and volume of compost. (See example at end of document)
- 5) With a back hoe:
  - a. Soils are scooped to the full depth of the bucket and lifted into the air.
  - b. Bucket is opened and soils are dropped back to the ground.
  - c. Work so that you are not driving on soil that has been remediated as you move on site.
- 6) If large clods are present or the grade is very uneven the site can be rototilled and smoothed with a rake, but this is not necessary
- 7) Apply 2-4 inches of finished wood chip mulch after planting. Renew annually.



### *Amendment Considerations:*

The primary factor to consider for determining how much compost to apply when amending soils is the resident soils texture. Different soil textures require different quantities of compost by volume to improve soil quality.

*Compost Specifications:*

Use a mature, stable, humus-like and aerobically decomposed compost derived from a known feedstock, and aerobically decomposed that has been tested to ensure quality. Composts should be a dark brown to black color and be capable of supporting plant growth in conjunction with appropriate management practices. Composts should have no visible free water, dust, or unpleasant odor. Composts should meet the following criteria as reported by laboratory tests. Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC) from the United States Composting Council (USCC).

<b>Parameters</b>	<b>Recommended Ranges</b>	<b>Units</b>
pH	6.0 - 8.2	-
C:N	10 - 20	ratio
Organic Matter	>24	% dry matter
Soluble Salts	1.0 - 3.5	mmhos/cm
Total N	0.5 - 3.5	% dry matter
NO <sub>3</sub> -N	100 - 1,000	mg/kg
NH <sub>4</sub> -N	<500	mg/kg
NH <sub>4</sub> :NO <sub>3</sub>	<10	-
P <sub>2</sub> O <sub>5</sub>	<1.0	% dry matter
K <sub>2</sub> O	1.0 - 3.0	% dry matter
Particle Size	100% passing through 3 cm sieve 85% passing through 2 cm sieve 40-60% passing through 2mm sieve	% dry matter