

Turfgrass



NORTH CAROLINA

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COMPOST USE
IN NORTH CAROLINA SOILS
For Turf Establishment and Maintenance

BERMUDAGRASSES:
AN UPDATE



Killing sparse grass with non-selective herbicide

COMPOST USE IN NORTH CAROLINA SOILS

For Turf Establishment and Maintenance



Incorporation of compost



After sod was laid

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Managing North Carolina soils in order to grow healthy turf can be difficult. In the eastern part of the state, we have sandy, droughty soils, which are low in organic matter, nutrients and nutrient holding capacity (cation exchange capacity). In most of the rest of the state, we have to contend with fine textured soils, high in clay and silt content. While these soils can hold water and plant nutrients, they are also easy to compact and poor in water acceptance and percolation. Further, when they are dry, they can become extremely hard.

Of course, there is an inexpensive tool that turf managers and landscape contractors can use to improve soil quality, thereby assisting them in establishing, renovating and maintaining high quality and utility turf areas. At the same time, this tool is economical to use and extremely functional. *The tool (product) is called compost.* Aside from being readily available and consistent in quality, compost use in turf applications has been well researched, proving it to be a highly effective product for improving turf growth and soil health. By improving 'soil health' through the addition of stabilized organic matter, we can not only improve plant growth, but also improve the sustainability of landscapes.

Compost provides many benefits to the soil, the plants, the environment and to the pocketbook of the end user. It is readily available in most parts of North Carolina and its use should be considered for all of your projects. Excellent compost products are produced by both the City of Raleigh (919-625-3175) and Mecklenburg County (704-621-7372). Compost is manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment but may also contribute plant nutrients.

Compost Benefits

As previously mentioned, the use of compost can provide many soil benefits which in turn enhance plant growth. It can improve the physical, chemical and biological characteristics of the soil in which it is blended. To illustrate the various benefits of compost, the most commonly identified ones are outlined below. It should be noted that all of these benefits are well documented through university research.

- 1 Improves soil structure and porosity — creating a better plant root environment
- 2 Increases moisture infiltration and permeability, and reduces bulk density of heavy soils — improving moisture infiltration rates and reducing erosion and runoff
- 3 Improves the moisture holding capacity of light soils — reducing water loss and nutrient leaching, and improving moisture retention
- 4 Provides plant nutrients
- 5 Improves the cation exchange capacity (CEC) of soils — improving their ability to retain nutrients for plant use
- 6 Supplies organic matter
- 7 Supplies beneficial microorganisms to soils and assists in their proliferation
- 8 May encourage biological disease suppression
- 9 Encourages vigorous root growth
- 10 Allows plants to more effectively utilize nutrients, while reducing nutrient loss by leaching
- 11 Enables soils to retain nutrients longer
- 12 Contains humus (humic substances) — assisting in soil aggregation and making nutrients more available for plant uptake

Turf Applications

The classic landscape construction project usually starts with an area of land that has been stripped of true (native) topsoil. Frequently, the general contractor sells off or improperly stores the topsoil from the construction site, rendering it unavailable or of questionable quality. The classic remedy for this situation has been to specify the importation of topsoil removed from a farm, another construction project, or *from who knows where!* However, unlike certified compost producers who participate in the US Composting Council's Seal of Testing Assurance (STA) Program, topsoil suppliers are not required to test their product before they are sold. (For additional information on the STA Program, or to locate STA participants in North Carolina, log on to the USCC's website www.compostingcouncil.org.)

A rule of thumb when using compost is to apply a 2" layer, then incorporate it into 6" to 8" of site soil. This 20–30% inclusion rate will increase the organic matter content of the soil by 3–5%, greatly enhancing the characteristics of the soil. This application rate has proven to be effective in almost any type of soil, from the densest clays to beach sand, by almost 40 years of compost field experience, as well as through extensive university research.

Compost Use on Turf – By the Numbers

Turf Establishment or Renovation

- 1 Break up existing soil with a shovel, rototiller or similar implement.
- 2 Apply a 2" layer of compost evenly over the soil surface.
- 3 Thoroughly incorporate the compost into 6" of the subsoil creating a 7–8" layer of "manufactured" topsoil.
- 4 Water well after planting or seeding.

Topdressing

- 1 For best results: Core aerate the lawn, making at least 5 passes over the area where the compost has been spread.
- 2 Apply about ¼" to ½" of compost to the surface of your lawn.
- 3 Rake the compost into the lawn, onto the soil surface and into the aeration holes.
- 4 Seed and water well.

Compost can provide turf managers and landscape contractors with a sustainable product that is both cost effective and efficacious. Further, both a national certification program for compost and standardized specifications for the use of compost in turf management, exist. This makes high quality compost easy to identify and use. Start using compost now, in place of traditional, non-renewable resources and begin to realize the many benefits that compost has to offer. Remember, fixing the soil at the beginning of a project can help to solve longer soil related problems, while reducing input costs over a several year period.

Mr. Alexander is a horticulturalist who has been involved in compost specification end use for over 35 years. As a consultant, he has authored various end use tools (such as "The Field Guide to Compost Use" and "Landscape Architecture Specifications for the Utilization of Compost") and has developed compost specifications for a variety of applications; including turf. Mr. Alexander also managed the national compost testing program; the US Composting Council's Seal of Testing Assurance Program. ☼