

Compost Use



Begun in March 2000, the Seal of Testing Assurance (STA) Program improves customer confidence in compost selection and utilization. Samples must test for pH, soluble salts, nutrients (N,P,K,Ca,Mg), moisture, organic matter, maturity (bioassay), stability (respirometry), particle size, pathogens and trace metals (USEPA 503).

Landscape contractors now have a tool that can assist them in establishing, renovating and maintaining high quality and increased utility turf areas. At the same time, this tool is economically practical to use and extremely functional. The product is called compost.

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Aside from being more readily available and consistent in quality, compost use in turf applications has been well researched, proving it to be an effective product for improving turf growth and deficient soils.

Soil Quality

It has been well documented that there has been a significant reduction in soil quality across the nation. Fortunately for the green industry, this situation has coincided

with the increase in compost production. As we all know, poor soil conditions make it more difficult and costly to manage the landscape. However, we also now know that by improving "soil health" - by enriching it with stabilized organic matter (primarily available in the form of compost) - we can not only improve plant growth, but also improve the sustainability of landscapes. Research completed by the Pennsylvania State University has even shown that we can effectively create a functional topsoil by blending compost with subsoils.

Compost provides many benefits to the soil, the plants, the environment and to the pocketbook of the user. It is readily available in most parts of the country and its use should be considered in every project for which you compete.

in Turf Care



Compost increases soil structure and porosity creating a plant environment which encourages vigorous root growth.



A rule of thumb to use when specifying compost is to apply a 2-inch layer of compost, then incorporate it into 6-inches to 8-inches of site soil (a 20 to 30-percent inclusion rate to improve the physical 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 over 20 years of compost field experience, as well as through extensive university research.

What is Compost?

Compost is the product resulting from the controlled biological decomposition of organic material. Proper composts are stabilized to the point that they are beneficial to plant growth, and bear little physical resemblance to the organic materials from which they were produced. These materials may include yard trimmings, biosolids, manure, and other feedstocks. Compost is primarily used for its soil conditioning properties, but it can also provide significant amounts of plant nutrients.

How is Compost Produced?

The microbes formed during decomposition require oxygen, moisture and food in order to grow and multiply. When these resources are maintained at optimal levels, the natural decomposition process is greatly accelerated. Their activity generates significant heat, as they transform the organic feedstocks into a stable soil conditioner. The composting process includes a high temperature phase that sanitizes the product and a lower temperature phase that allows the compost to stabilize and become agronomically viable.

Compost Benefits

As previously mentioned, the use of compost can provide many 'soil' benefits. It can improve the physical, chemical and biological

Compost Benefits

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 – assisting in soil aggregation and making nutrients more available for plant uptake.
13. Buffers soil pH.
14. Binds and degrades specific pollutants.

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.

Turf Applications

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



Left, After: All compost, regardless of the original feedstock, is produced through the activity of aerobic (oxygen requiring) microorganisms. Compost is primarily used for its soil conditioning properties, but it can also provide significant amounts of plant nutrients.

Below, Before: The classic landscape construction project usually starts with an area of land that has been stripped of exactly what it needs to support plant growth - the topsoil. Across the nation, this reduction not only affects the farming communities, but also the landscaping and turf industries.



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-inch layer of compost evenly over the soil surface.
3. Thoroughly incorporate the compost into 6-inch of the subsoil creating a 7 to 8-inch 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 1/4-inch to 1/2-inch 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.

importation of topsoil removed from a farm, another construction project, or from *who knows where!*

Most of the specifications written for topsoil will contain reference to organic matter content and perhaps a pH value, but often nothing more. This purchased topsoil will then be delivered and spread, usually to a depth of about 6-inches, and planted with turf. In addition, more often than not, the contractors planting the seed or laying the sod will continually drive over the topsoil layer, compacting it and destroying its structure. We then cross our fingers after all of this occurs and hope that nature will prevail, and the plants will thrive, provided they receive enough fertilizer and water. There is a better way to go about doing this. Specify compost instead!

Seal of Testing Assurance Program

The Seal of Testing Assurance (STA) Program rules require participating facilities to sample and test their compost products on an on-going basis, through a network of certified laboratories which use uniform protocols provided by the US Composting Council (USCC). It also requires the disclosure of test analyses and product ingredient data, as well as end use instructions to compost customers. This is what you would expect when specifying or using any other horticultural product (or any consumer product for that matter). This program was developed with the end user in mind. So, why should you accept a compost product that isn't certified by STA and doesn't provide you with this basic information? The USCC's STA Program has also recently achieved two important milestones. Beginning its fifth year of operation, the STA Program has just surpassed the 100 products and 3,000,000 cubic yard certification mark.

Compost can provide the landscape contractors with a sustainable product that is both effective and economical to use. We now have a means by which to consistently characterize compost products (the STA Program), as well as some

The Key Elements of the Seal of Testing Assurance Program

1. Participants regularly sample and test their product

- Testing frequency is based on the quantity of compost produced.

Compost Quantity	Frequency
1 – 6250 tons	1 per quarter
6251 – 17500 tons	1 per 60 days
17501 tons and above	1 per month

- Sample must test for pH, soluble salts, nutrients (N,P,K,Ca,Mg), moisture, organic matter, maturity (bioassay), stability (respirometry), particle size, pathogens (USEPA 503) and trace metals (USEPA 503).

2. Meet applicable State and/or Federal regulation, to assure public health/safety and environmental protection

- Applicable tests must be completed (e.g., pathogens, heavy metals, pesticides, inerts, etc) and standards met.
- Participant's facility must be compliant with all applicable regulations.

3. Testing will be completed at approved laboratories.

- Approved labs are required to use test method protocols from the *Test Methods for the Examination of Composting and Compost* manual.
- Approved labs are required to participate in the Compost Analysis Proficiency program (administered by Utah State University and managed by Bob Miller of Colorado State University).

4. Participants will offer "directions for product use" at point of sale


- includes a list of product ingredients.

5. All participants will make test results available to inquiring customers

- using the "Compost Technical Data Sheet", a uniform product label.

6. Participants have the right to use the Seal of Testing Assurance Program Logo in their promotional activities

For a list of STA certified composters, go to www.compostingcouncil.org and click on STA Program, or contact Al Rattie at 215-258-5259

specifications in which to evaluate them. These benefits can best be seen when using high quality compost products. So, what are you waiting for? Start using compost now, in place of traditional, non-renewable resources and begin to realize the many benefits that these products have to offer! 

Mr. Alexander is a horticulturalist who has been involved in the production and end use of 'organic recycled' products; specializing in compost, for over 19 years. As a consultant, he has directed and completed over 200 compost marketing and utilization projects; working with products derived from a variety of feedstocks. Mr. Alexander is currently managing their Seal of Testing Assurance Program and is also the author of "The Field Guide to Compost Use" and "Landscape Architecture Specifications for the Utilization of Compost". He can be reached at 919-367-8350.



Compost evaluation tools provided by STA certification are invaluable to landscape contractors, allowing them to more effectively compare and use compost products. The STA also requires the disclosure of test analyses and product ingredient data, as well as end use instructions to compost customers. Remember, consistently high quality compost, consistently performs "in the field".



It has become more and more difficult for landscapers and turf managers to obtain functioning, landscape grade soils that they can use on their projects. Approved labs are required to participate in the Compost Analysis Proficiency program (administered by Utah State University and managed by Bob Miller of Colorado State University).



Trying to determine whether imported soil is rich in organic matter, of overall poor quality (physical and/or chemical), or contaminated with herbicides and pesticides can prove to be difficult to determine (especially on larger projects).