Want Healthy Soil? Use Compost

We have many different soils in the Puget Sound area. Part of that is due to enormous glaciers half a mile high (that’s four Space Needles stacked on top of each other!). They extended as far south as Olympia more than 10,000 - 15,000 years ago, and obliterated all the soils beneath it. When the glaciers melted, they mostly left behind a mixture of sand, silt, clay, and rocks and beneath that, what we ‘lovingly’ call glacial till.

Problem: Vanishing Topsoil
Topsoils in our area are typically only three to 12 inches deep. The greatest concentration of organic matter remains in the top six inches of soil, and the most fertile soil is the top few inches of that. This thin layer of soil has been affected by development practices – bull-dozing off existing topsoil during grading, compacting the whole site with heavy equipment during construction, and replacing only one to two inches of soil over the compacted subsoil before landscaping with an instant (roll-on) lawn. Today we know this is a poor environment for plants to survive in, and only increases the risk of runoff and harm to nearby streams, lakes and Puget Sound.

Solution: Compost!
Compost is what results from the biological decomposition of organic material (living and dead plant or animal matter). Composting transforms plant and animal matter into a biologically stable substance. Common composting materials are animal manures, food wastes, yard debris, sawdust, wood chips and bark. Besides providing organic material, compost also supplies a modest amount of nutrients released slowly over years. And compost has a unique ability to improve the chemical, physical and biological characteristics of soils.

Compost is considered a soil condition rather than a fertilizer based on it’s effect on plant nutrition. Fertilizers are a source of readily available nutrients and have a direct, short-term effect on plant growth. Soil conditioners, on the other hand, affect plant growth indirectly by improving the physical and biological properties of the soil, such as water retention, aeration and microbial activity and diversity. Chicken manure is an example of an organic amendment with fertilizer value simply because more than 25 percent of its total nitrogen, phosphorus and potassium are in forms that plants can immediately absorb. However, amendments like municipal yard waste, food waste, and bark are examples of soil conditioners because their nitrogen, phosphorus and potassium are in forms that plants can’t use (until changes take place underground). They are not considered fertilizer substitutes; instead they mainly improve soil properties by building soil organic matter.

The Latest on How to Care for Your Soil!

While many of us already know the wonderful benefits of compost for soil, plants and the environment, did you ever wonder how much of it is actually true? Well, it’s a researcher’s job to systematically investigate and study things to establish facts and reach new conclusions. In 2001, Dr. Craig Cogger, a soil specialist, and other scientists at the WSU
organic amendments over time. Another study started in 2000 on native plantings in urban natural areas, found evidence that plants in mulched plots were larger, more vigorous, faster-developing, and had higher rates of survival than plants in herbicide-treated plots. The mulched plots also had fewer weeds, helping to reduce competition for resources.

**Action Tip** – This means your one time effort applying compost or bark can reap good results for five or six years. Isn’t that the kind of yard work we’d all love to do?

**Note:** If you buy commercially available compost, be aware that the US Composting Council has a Seal of Testing Assurance (STA) program. Members in this program must test their products for pathogens, heavy metals and pesticides on a regular basis. These numbers are available to the public. More information can be found on their STA website page: [http://compostingcouncil.org/participants/](http://compostingcouncil.org/participants/).

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**Compost and Your Lawn**

Studies show that there are two effective ways to use compost for a healthy lawn. **For a new (to be seeded) lawn**, you can apply 15 to 25 percent compost (by volume of your lawn area), and then dig or till it four to six inches deep into the soil. The higher application rate is best for soils low in organic material, such as our subsoils. Fine compost particle size is usually recommended to ensure good seed-to-soil contact. Timing is important here ~ early fall is best (when air temperature is between 60 and 85 degrees F). Another good time is late spring. Avoid summer and late fall if you can.

Compost helps establish a healthy root system, and supplies a portion of nutrients needed for turf grass for at least two growing seasons. Studies have shown improved turf quality in the second and third years after application.

**For an existing lawn**, use compost as a top dressing, by applying a thin layer (1/4 inch) with a spreader and work it into the soil with a rake. Or you can incorporate compost into your lawn via aeration. Apply the compost, then go over your lawn several times using an aerator with hollow tines and a heavy drag mat. It’s best to do this when the weather is cool and moist (spring or fall). Fall is a great time to do this because rain will help move the compost into the soil. This also gives the soil time to make more nutrients available for grass to absorb in the spring, when the growing season begins. Recent research has also shown that using high quality compost can degrade some turf pesticides over time, reducing contamination of nearby streams or lakes.

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**Compost and Your Landscaped Areas**

Just as for lawns, there are two ways to compost for a healthy landscape bed. **For a new landscape bed** dig in a layer of compost before any trees, shrubs or flowering plants are installed (fall and spring are the best times to do this). Results from WSU’s 2001 study suggest that using a maximum of about one-third compost (by total volume of area) is suitable for establishing landscape beds in Pacific NW soils degraded by development.

In most degraded landscapes, compost applications of two to three inches, amended eight to ten inches deep, can offer long-term improvements for your soil. Hand digging is recommended over using a tiller to keep the soil structure intact and keep soil microorganisms in their preferred layers of soil.

**For an existing landscaped area**, add compost among established plants and dig it in where ever you can without harming shrub and tree roots. As research has shown, a close