Fall Topdressing Takes Hold

Topdressing turf in the fall has grown steadily for many years and now has become standard practice for many landscape contractors. This is simply because once they topdress the first time, they typically see dramatic results and want to maintain the healthy turfgrass and verdant look.

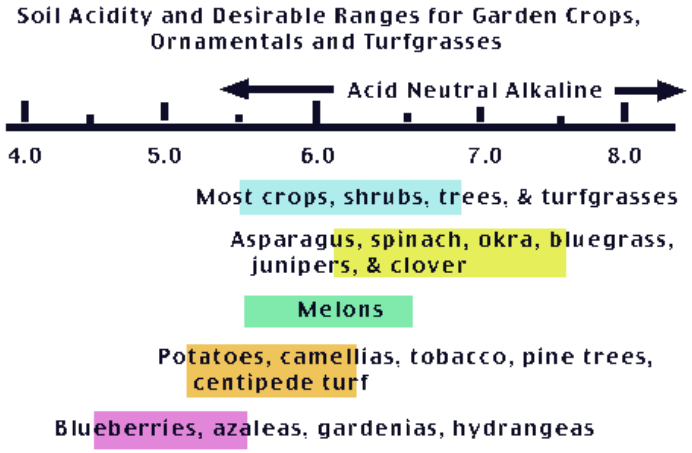
Sandy soil with organic matter content and a southern exposure shows brown grass.

Two weeks later after a single topdressing application.

The lawn above was aerated and topdressed by Schumacher Landscape Company using a 3/8-inch layer of Agresoil Compost from Merrimack, NH. Overseeding was also done.

Stabilizing Soil pH using Compost

Natural soils in New England are typically acidic with pH running often below 5.5. In contrast most manufactured soils in New England are neutral to alkaline having pH's between 7.0 – 8.0. Adding aluminum sulfate to lower soil pH and lime to raise pH are acceptable methods in today's landscaping practices to achieve ultimate nutrient uptake for specific plant types. Compost incorporated into the soil has the ability to buffer and stabilize soil pH more affectively resisting pH change.



Compost has many benefits to improve soil's physical, chemical, and biological properties but the impacts on soil pH have been over looked by many professionals. Unlike most chemical treatments, compost's capability to modify pH results from the fact that organic matter in the compost boosts the cation exchange capacity (CEC) of soil. Most treatments will change the soil pH in one direction either up or down. However compost can potentially change it in either direction and raise the pH when added to an acidic soil and at the same time lower the pH when added to an alkaline soil.

Theoretically, pH measured on a scale of 1 to 14 describes the level of free hydrogen ions (positively charged ions) in a water solution. The more hydrogen ions the more acidic the solution and the lower the pH. Aluminum sulfate provides free hydrogen ions while lime absorbs the free hydrogen ions. Both of these treatments may act more quickly than compost but are often more unstable and likely to change due to moisture and other conditions. Acidic soil suffers from an overabundance of positively charged hydrogen ions. When compost is added, its negatively charged molecules attract and bind the hydrogen. When enough hydrogen ions are taken out of solution, the pH level of the soil rises.

In alkaline soil, compost's complex, hydrogen-rich molecules provide a source for hydrogen ions. Many get stripped away, leaving their electrons behind and become positively charged ions. When enough ions are released into the soil solution, the pH falls. The negatively charged ions on the compost molecules are now available to bind other positively charged particles which includes various soil nutrients.

As the CEC increases due to the addition of compost it will help absorb any chemical addition meant to change pH. Thus larger quantities of aluminum sulfate and lime must be used in compost-rich soil. Because of these particular chemical characteristics, compost can buffer soils against sudden changes in pH, and it can render both acidic and alkaline soils more nearly neutral raising the pH in acidic soils and lowering pH in alkaline soils.

Not all compost products are the same. Manure composts have a high pH, typically 7.5-8.5 or higher. Leaf compost is usually between 7.0 and 8.0 pH and bio-solids compost is 5.5-8.0 PH but can be higher if it is lime stabilized. When choosing a compost to amend planting bed soils architects need to evaluate the soil pH and specify compost with the proper pH range.

Mass DEP Waste Ban Provides Opportunities for Composting Food Wastes

Effective October 1, 2014 the Massachusetts DEP has instituted a ban on disposal of commercial organic wastes that applies to businesses and institutions that dispose of more than one ton per week. The ban provides opportunities for diverting food wastes from disposal to composting, re-use as animal feed, and the conversion to biogas energy through anaerobic digestion. Although the ban is new, food wastes have incorporated into many successful composting operations for a number of years.

Since April 2009 The Town of Needham has been successfully incorporating food wastes into the existing leaf and yard waste composting program. Although food wastes are being composted at a number of farm facilities throughout Massachusetts, the Needham program is one of the first municipally operated leaf and yard waste composting programs to incorporate source separated food residuals.

For a number of years the Town of Needham has had a successful leaf and yard waste composting operation and has been handling about 10,000 tons per year of leaves and yard wastes on a 5.3 acre site located at the recycling Transfer Station. Agresource has

worked with the Town to market compost generated at the facility to its customers and continues to provide the Town with both marketing services and technical support.

Agresource and the Town entered into an agreement with New England Solid Waste Consultants, a regional trucking company, and Brick Ends Farm, a registered farm composting operation, to divert source separated food wastes from the ongoing composting operations at the farm to the Needham facility. Thus the Town has been able to successfully add food wastes to its ongoing compost operation without having the responsibility to set up and manage the collection program.

All food wastes received at the Needham facility are delivered by New England Solid Waste Consultants in accordance with a pre-arranged schedule. Food wastes are collected primarily from grocery markets, and consist largely of vegetables and bakery products. Small quantities of meat, fish and dairy are included along with the plant material generated from the floral department. Generators have instituted programs to insure that the food wastes are free of plastic packaging and any other unwanted debris.

Upon the receipt of the food wastes (typically 6.5 ton loads twice a week) they are quickly mixed with leaves and yard wastes. The incorporation of the food wastes into the existing composing operations has a number of benefits to the Town. The Town is paid by Agresource a tip fee per ton for all the food wastes that the Town receives. In addition, the food wastes provide additional nutrients and moisture and thus when added to the relatively dryer leaf and yard wastes they can accelerate the composting process.

The Needham compost facility serves as a model that may be used by others looking to incorporate food wastes into existing composting operations that receive leaves.

Topdressing Results at Winslowe's View

Topdressing at Winslowe's View in Plymouth MA continues to show dramatic results. Agresoil Compost made in Dartmouth, MA has been used for over six years to improve

new areas that have sandy, low organic content soils. The results speak for themselves in the pictures below.