Compost efficacy

■ Research by Peter Landschoot and Andy McNitt at the Penn State University Turfgrass Research Center during a 1992-1993 research project, studied the efficacy of seven compost amendments on clay loam subsoils. They were most interested in how different compost mixes effected turfgrass rate of establishment; overall turf quality; organic matter content; bulk density and infiltration.

"Our goal," says Landschoot, "was to simulate a situation in which a contractor removes good topsoil from a new development and hauls it away from the site—a common practice that leaves a subsoil high in clay, low in organic matter and nutrients and unsuitable for good turf growth."

Eight different composts, a reed sedge peat and a topsoil were applied at two rates: 6.2 cu. yds. per 1000 sq. ft. and 3.1 cu. yds. per 1000 sq. ft., at depths of four to six inches. The compost mixes tested were:

- yard trimmings;
- a biosolid compost from the water department;
- brewery waste;
- mushroom media;
- paper pulp;
- a mixture of various manures;
- a topsoil -amended plot.

Landschoot: to examine compost efficacy as topdressing.

The plots were seeded with Kentucky bluegrass. Among the findings:

- all compost treatments increased soil organic matter content, reduced bulk density and increased water infiltration rates when compared with the topsoil treatments and the unamended control plot;
- good turf quality was correlated with increasing levels of available phosphorus and nitrogen recovery;
- starter fertilizer increased the rate of turf establishment with all treatments except the biosolid compost and the brewery residues.

Landschoot says the quality of the material used is a big issue, as well as the length of time it takes before the organic portions of composts break down, how long soil improvements last and the effects of compost additions under heavy-traffic conditions. He plans to examine those issues in the near future, as well as a look at the efficacy of various compost mixtures when used as a topdressing.

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sludge or municipal solid waste (MSW) may contain contaminants. If you use these composts, know the producer, check with others who have used the product and ensure that the compost meets all local, state and federal regulations.

Producers should be able to produce test results for heavy metal and pathogen contamination in sewage sludge or MSW compost.

—Dr. James Wilkinson, vice president of research and development for Earthgro, Inc., in the Bulletin of the New York State Turfgrass Association.

Sprayer tune-up time

■ A pre-season check is a good time to spot needed repairs.

Although sprayer brands and types differ slightly, they operate on the same principles. Industry and university experts recommend using the following checklist to tune-up all sprayers:

Check for wear and tear—Look for obvious damage to frame, running gear and tank.

✔ Drain antifreeze or water and check the pump for cracks or leaks.

✔ Test throttling valves, pressure gauges, hoses and clamps for leaks.

✔ Check nozzle gaskets for a tight fit.

✔ Clean line and tip strainers with fresh water and a soft brush.

Check for uniformity—Calibrate. Make sure nozzle size flow rate, and spray pattern are uniform across the boom.

✔ Measure flow rates from each nozzle and replace any tip which varies 10 percent or more from manufacturer's specifications. If two or more nozzles are off by 10 percent, replace the entire set of tips.

✔ Identify nozzle needs for the upcoming season. New chemicals or application procedures may require different nozzle types, sizes or pressure ranges.

✔ Replace worn nozzles before the season and keep extra nozzles on hand to avoid unnecessary delays during the season.

Check for safety—Equip your sprayer to carry fresh water for rinsing gloves and tools, and for cleaning spray tips and screens.

✔ Use appropriate safety equipment. Basic protective gear includes a long-sleeved shirt, long pants, sturdy shoes or boots, chemical-resistant apron, gloves and goggles or a face shield. Read label instructions to identify further safety precautions.

✔ Be certain pumping and filling equipment has devices to prevent backflow and check valves to protect water supplies.

Do's and don'ts—**Do** check the chemical label to determine recommended application rate.

Don't think of calibration as a once-a-year task.

Don't try to calibrate your nozzles by blindly raising or lowering pressure to change flow rate. There isn't a linear relationship between the two variables. For example, a nozzle spraying at 10 psi will deliver only twice the amount of liquid when the pressure is increased four times to 40 psi.

Do adjust for variances in nozzle flow rate when spraying solutions with substantially different densities than water. Some solutions, such as 28 percent nitrogen, are heavier than water and would flow at a lower rate through the same nozzle.

When checking ground speed for calibration purposes, use a stopwatch to measure the time it takes the tractor to go 250 feet, then calculate speed with this formula:

$$\frac{\text{Distance (ft.)} \times 60}{\text{Time (sec.)} \times 88}$$

Calibrate each nozzle individually, and check for worn or split hoses or leaky valves. **LM**