A Greener Green

The grass on the golf course at the North Shore Country Club in Glenview, Illinois, not only looks green, but it uses "green" methods to keep it that way. Instead of chemical fertilizers and pesticides, the club uses a 50-50 mix of nutrient-rich biosolids from the Chicago Metropolitan Sanitary Sewer District and compost made from yard waste to keep the greens healthy and aesthetically pleasing.

This organic approach to landscape maintenance was started by club Superintendent F. Dan Dinelli in 1995. During routine testing of the turf, he noticed that sodium levels were too high to maintain quality turf and that the soil and plant life were suffering. Installing a new well would have mitigated the problem, but it also would have cost nearly a quarter million dollars.

Dinelli began researching organic alternatives to the chemicals he had been using. He found that replacing the chemical fertilizers with organics reduced salt levels. As an added benefit, he discovered that using compost could benefit the overall soil structure. At the time, there was little research available on the effects of compost on turf, so Dinelli embarked on his own in-house research project, using no outside funding—just donated organic materials. As superintendent, he had the authority to "select tools for the job as long as they were financially reasonable," Dinelli said.

Dr. Hank Wilkinson of the University of Illinois and Dr. Michael Boehm of Ohio State University observed plots of various compost mixtures and materials to detect signs of disease. Although the results were not significant, the treated plots showed earlier "green up" and recovery rates than control plots without compost. Further compost applications showed up to an 80 percent fungal disease suppression (specifically Dollar Spot, *Sclerotinia homoeocarpa* and Snow Mold, *Typhula spp.*), improved turf color and density, and increased earthworm castings.

Following the 2-year study period, the North Shore Country Club applied compost materials to all of its fairways. Dinelli estimates he uses between 300 and 500 yards of compost per year at the club, keeping these organic materials out of landfills and helping to reduce both pollution and greenhouse gases.

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"One of the challenges for any practitioner is to understand what is available in your area," Dinelli noted. He tried many different products such as steer manure, poultry, yard waste, mushrooms, earthworm castings, and sawdust before choosing the biosolids and yard waste combination.

"You have to use what is best for the money," he says, "not what is necessarily the best product." Dinelli found that biosolids worked extremely well with turf grass and the compost was great for growing seedlings. The yard waste the North Shore Country Club uses ranges from $15 to $17 per ton, and the biosolids are free. The two products he opted to use offer him a good nutrient package, reducing the need for fertilizer and other inputs. Most importantly, club patrons have noticed the improvement on the grounds since the project started.

Although Dinelli is pleased with the outcome, the process has not been problem-free. Compost encourages earthworm activity, a real problem on any golf course. There is also a potential lack of consistency in the materials from batch to batch, season to season, and supplier to supplier. Dinelli recommends knowing the compost you are going to use and take samples on a regular basis. Most importantly, he said, "realize that compost is a natural bioproduct and it will fluctuate." Because biosolids are used on the premises, EPA keeps records to ensure they are safe, but the Agency fully supports this innovative approach to turf management and biosolid reuse.