

# Old, OLD SCHOOL TURFGRASS MANAGEMENT

Topdressing with  
compost can  
improve fairways.

By Clark Throssell, Ph.D.

**I**ncorporating organic matter to improve the physical, chemical and biological properties of soil is one of the fundamental principles of soil science. Superintendents in the 1920s and 1930s put that principle into action by regularly topdressing with compost as part of their management program. And in October 2007, Rick Pagett, superintendent at the Pennsylvania State University golf courses, followed suit; he put the “incorporation of organic matter into soil” principle into action when he topdressed the 7<sup>th</sup> fairway and surrounding rough on the Blue Course with compost.

The idea to topdress fairways with compost came to Pagett while he was a graduate student at Penn State taking Dr. Andy McNitt’s turfgrass soil physical properties class. Dr. McNitt, a turfgrass soil specialist, was discussing his experience using compost to improve lawns by topdressing them with compost. That’s when Pagett realized that adding compost to the soil was the solution to his problem on the 7<sup>th</sup> hole.

Rebuilt in 2006, the 7th fairway was constructed using fill taken from other locations on the golf course. Pagett struggled to develop a stand of creeping bentgrass on the fairway, or Kentucky bluegrass in the surrounding rough, that met his standards. Despite his best efforts, the stand of both the creeping bentgrass fairway and Kentucky bluegrass rough was thin, slow

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## Dressed for Success



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growing and a bad playing surface.

With the Women's Big Ten Golf Championship set for spring 2008, Pagett wanted to improve the turf on the 7<sup>th</sup> fairway and rough to provide the playing surfaces that Big Ten golfers deserved.

"Dr. McNitt and Dr. Pete Landschoot, a Penn State turfgrass scientist, were great resources for this project and I met with them to develop a plan to topdress the 7<sup>th</sup> fairway and surrounding rough with compost," said Pagett.

McNitt and Landschoot had both practical and academic experience using compost to improve turfgrass stands. The compost selected was produced locally by the University Area Joint Authority using municipal biosolids and hardwood saw-

◀ The amount of compost applied is seen on the right side of the photo.



ALL PHOTOS BY RICK PAGETT





▲ **The fairway after two years of topdressing.**

◀ **Appearance of the fairway after aerification, topdressing and blowing to remove debris.**

dust and was composted to maturity. The typical nutrient range of the compost was 1.7-2.4 percent nitrogen, 2.2-4.3 percent  $P_2O_5$  and 0.23-0.37 percent  $K_2O$ . A pH of 6.2, C:N ratio of 23:1 and organic matter of 89 percent were typical of the compost source.

In October 2007, Pagett and his two assistant superintendents, Don Chester and Scott Martell, finalized the compost application operation. They applied compost to a depth of approximately 0.5 inches using a Bannerman TurfTopper

set wide open, then aerated with hollow  $\frac{3}{4}$ -inch tines on a 2 x 2-inch spacing.

They then drag the fairway and rough with a metal 8-foot chain harrow drag mat to incorporate the compost into the aerification holes and break up the soil cores.

"The nutrients in the compost led to an increase in turfgrass color and density," said Pagett. "I also observed an increase in water penetration on the aerified and compost-treated turf. By the time the Big Ten Men's Golf Championship was held in May 2008, the turf was in great condition and was suitable for championship golfers."

In preparation for the championship the following year, Pagett again topdressed the 7<sup>th</sup> fairway and surrounding rough with compost in fall 2008. The turf in the fairway and rough was in great

condition for a couple of years, but the quality has started to decline. So, Pagett planned to topdress with compost again last month.

By experimenting along the way, Pagett says he has found that "aerification after topdressing with compost works the best to incorporate the compost into soil. Aerification before topdressing with compost has not worked as well and topdressing with compost without aerification has only provided so-so results."

Topdressing with compost is now one of Pagett's go-to management tools. Sometimes the old, old school turfgrass management techniques are still the best. ■

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