

# Turf Grass TRENDS



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## More than meets the eye:

The microbiology of turfgrass soils

by Dr. Eric B. Nelson

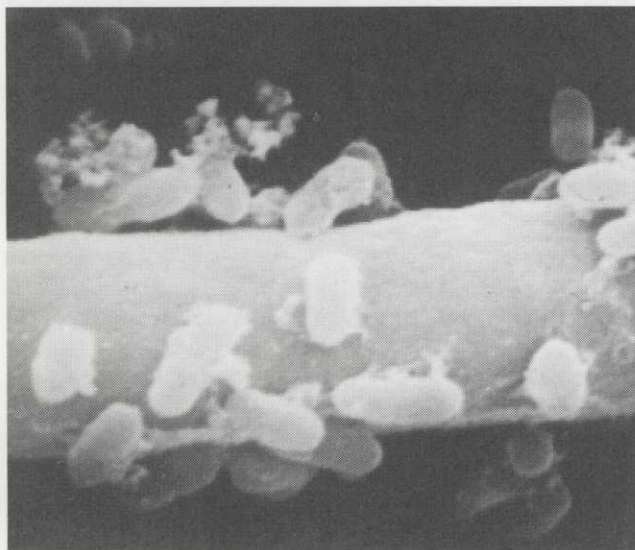


Photo provided by Dr. Eric B. Nelson, Cornell University

Bacteria adhere to the mycelium of a fungus. Note the size of the bacterial cells relative to the mycelium. See page 4.

**F**OR SOME TURFGRASS MANAGERS, soil is simply the "dirt" that holds plants in the earth and keeps them from falling over.

For the more advanced turfgrass manager, soil is held in higher esteem than dirt. Soil is considered by these turfgrass managers as the life-supporting matrix of the higher plant, since everyone knows that dirt is simply the stuff that accumulates under one's fingernails after a hard days work.

Turfgrass managers who know that plants are anchored in soil instead of in dirt might admit that, for the most part, their understanding of soil is poor at best. Everyone knows what soil looks like, but they are not quite sure where it actually comes from or how it can sometimes be black, brown, or red. Even though

most people would admit that soil has a pleasant, somewhat fragrant odor, most are really not sure why soil smells as it does. They know that soil is a nutrient-holding material important in the health of the plant, although the exact manner in which this can be is sometimes obscure. Certainly most know that living things, such as worms and insects can reside in soil, but they're not sure where in the soil they live or what they live on.

In fact, it might be safe to assume that most turfgrass managers consider soil to be a mysterious world below the turfgrass canopy. Rarely do turfgrass managers consider soil as something that should be managed as prudently as the turf itself. It is becoming clear, however, that the management of the soil, in particular its biological components, is as important as the management of the plant for the long-term productivity and health of a turfgrass stand.

### What is soil, anyway?

Before we begin our microbial journey through soil, it is important to ask the question: What is soil anyway? Soil is simply the outer

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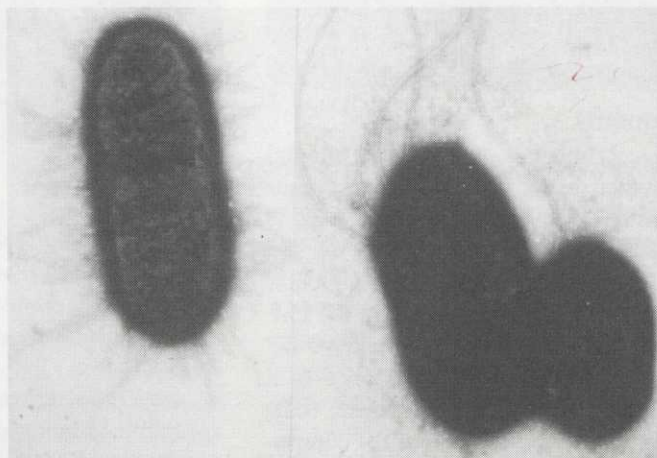


Photo provided by Dr. Eric B. Nelson, Cornell University

Bacteria have structures on their surface that facilitate reproduction and allow cells to swim in water films around soil particles. See page 4.

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