



Summer Patch

J.E. Kaminski, Department of Plant Science

INTRODUCTION

Summer patch is perhaps the most important disease of Kentucky bluegrass in Connecticut and throughout the Northeastern United States. On golf courses in New England, summer patch is a major disease of annual bluegrass. In addition to bluegrasses, summer patch can cause significant damage to creeping red fescue and hard fescue. Tall fescue, creeping bentgrass and perennial ryegrass growing in New England, however, are not affected by the disease.

SYMPTOMS

As its name indicates, summer patch is a disease of hot weather and symptoms usually are present between July and September. Initial symptoms of summer patch first appear as dark green patches of wilting turf (Fig. 1). Although initial patches are only a few inches in diameter, patches will increase in size during the summer months. Advanced symptoms generally include circular, straw-colored patches up to a foot in diameter (Fig. 2).

On mixed stands of turf growing on golf course putting greens or fairways, the disease will selectively target the annual bluegrass and creeping bentgrass often will fill voided areas.

CAUSAL AGENT

Summer patch is caused by the root-inhabited pathogen *Magnaporthe poae*. Similar to other root-inhabiting turfgrass pathogens, *M. poae* produces dark-brown to black ectotrophic runner hyphae on roots and rhizomes of infected plants. Growth cessation structures also are commonly found on roots of plants infected by *M. poae* (Fig 3). Sexual



Figure 1

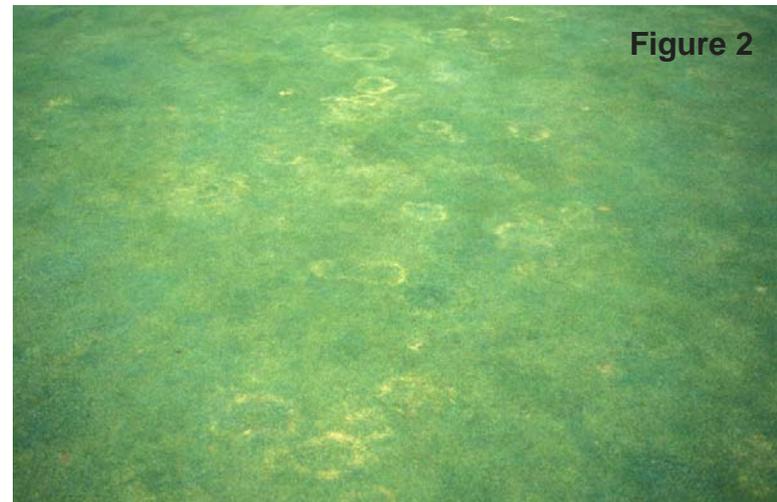


Figure 2

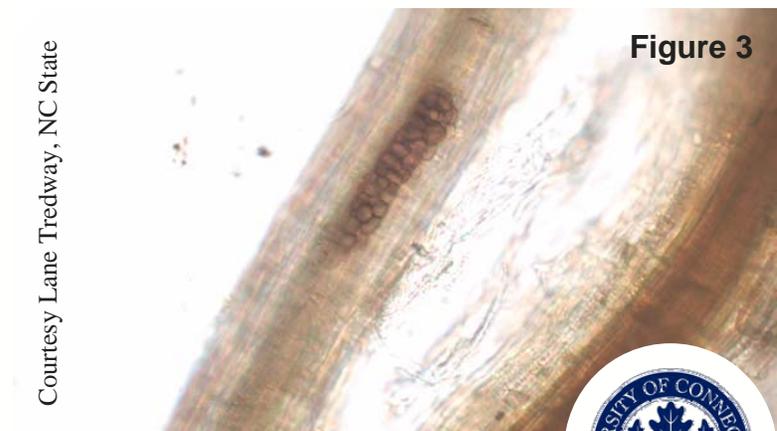


Figure 3

Courtesy Lane Tredway, NC State

fruiting bodies are not found in nature and their importance in the disease cycle is unknown.

Summer patch is most severe in areas that are poorly drained and subjected to heat and drought stress (Fig 4). Root zone temperatures in excess of 78F and moist soils are critical factors in disease development. The pathogen is believed to survive adverse conditions as mycelium in plant debris or living host tissues.

MANAGEMENT

Cultural and chemical management strategies are both often necessary to suppress the disease. In severe situations or where the disease represents a chronic problem, the affected site may need to be renovated and planted to a disease-resistant cultivar of Kentucky bluegrass or a non-susceptible turfgrass species.

Cultural practices that may help to reduce summer patch severity include increasing mowing height, deep and infrequent irrigation, removal of excessive thatch or organic matter and proper fertility practices. Selecting the proper nitrogen source may help to reduce disease severity. Nitrogen sources resulting in a decrease in soil pH such as ammonium sulfate or sulfur coated urea are believed to reduce summer patch severity. In contrast, fertilizers primarily composed of nitrate based nitrogen sources (e.g., calcium nitrate, potassium nitrate, sodium nitrate) can result in an increase in soil and rhizosphere pH and therefore increase disease severity. In addition to selecting an appropriate nitrogen source, applications of excessive water soluble nitrogen prior to summer should be avoided.

Chemical control of summer patch is often erratic and preventive fungicide applications generally result in greater success. Banner MAXX®, Bayleton®, Compass®, Eagle®, Heritage®, and Rubigan® have all been shown to provide the greatest level of preventive control. For curative treatments, Banner

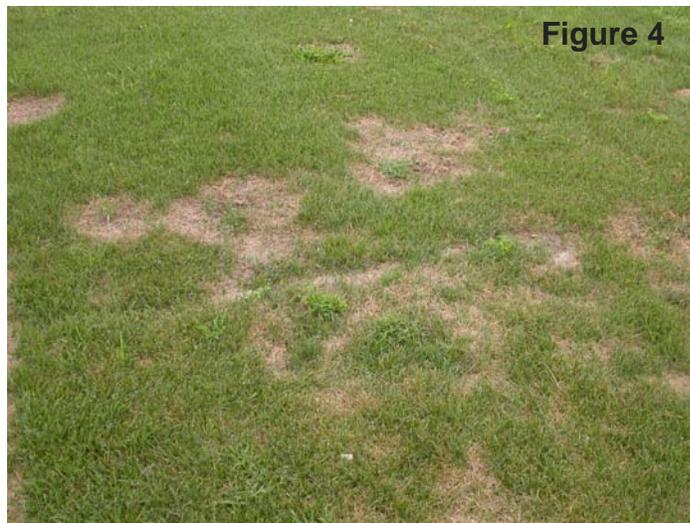


Figure 4

MAXX, Cleary's 3336, and Heritage are believed to provide optimum control. Curative control, however, is often time erratic and met with variable success. In many cases, curative applications will provide little or no control of the summer patch during the peak of disease activity.

Fungicides should be applied in at least 100 gallons of water per acre (>200 GPA preferred). If fungicides are applied in lower water volumes, post-application irrigation prior to drying may assist in washing the fungicides into the root zone.