

# An integrated approach to controlling summer patch

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Summer patch is one of the most destructive diseases of cool-season turf in North America. Prior to 1984, it was an unidentified component of the disease Fusarium Blight. Summer patch has been reported on annual bluegrass, Kentucky bluegrass and fine fescue.

## SYMPTOMATOLOGY

In mixed stands of annual bluegrass and bentgrass maintained under putting green conditions, patches are circular and range from 1 to 12 inches in diameter. As annual bluegrass yellows and declines, bentgrass species frequently recolonize patch centers. On fairways, rings or patches may not develop. In such cases, symptoms may appear as diffuse patterns of yellowed or straw-colored turf that are easily confused with heat stress, insect damage or other diseases.

Infection commences in late spring when soil temperatures stabilize between 65° and 68°F. Symptoms develop during hot (86° to 95°F), rainy weather or when high temperatures follow periods of heavy rainfall. Patches may continue to expand through the summer and early autumn and are often still evident the following growing season.

## MANAGEMENT

### Chemical Control

Systemic fungicides, such as fenarimol (Rubigan), propiconazole (Banner), triadimenol (Bayleton) and the benzimidazoles (i.e., Tersan 1991, Fungo 50 and Cleary 3336), have proven to be most effective when applied at label rates. Applications should commence on a preventive basis in late spring or early summer when the maximum daily soil temperature exceeds 60°F for four to five consecutive days. Soil temperatures should be monitored at a two-inch depth during the warmest part of the day. Fungicides should be repeated two to three times at 21- to 28-day intervals for best results. Efficacy is enhanced when products are applied to 4 to 5 gallons of water per 1,000 square feet. Post-treatment irrigation has not been shown to increase disease control and may, at excessive levels (i.e., 1/2 to 1 inch of water), actually decrease fungicide effectiveness.

### Cultural Control

Because summer patch is a root disease, cultural practices that alleviate stress and promote good root development will reduce disease severity. Since low mowing enhances symptom expression, avoid mowing turf below recommended heights, particularly during periods of heat stress. In the Northeast, symptoms are less apparent when golf greens and fairways are cut at or above 5/32 and 3/8 inches, respectively.

Summer patch is most severe on poorly drained, compacted sites. Aerification over a period of several years should reduce compaction and decrease the incidence and severity of this disease. Spring and spring plus fall aerification schedules are more effective than fall aerification in reducing disease development. Summer patch is stimulated at high soil pH. Therefore, for best results, maintain soil pH between 5.5 and 6.0 with the application of ammonium sulfate or a slow-release nitrogen

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(Summer Patch continued)

source such as sulfur-coated urea. Irrigate deeply and as infrequently as possible without inducing drought stress. Conversion of golf areas from annual bluegrass to bentgrass will further reduce disease incidence.

#### Reducing Fungicide Rates

The use of fungicides to control summer patch can be reduced through the implementation of good cultural practices such as aerification, raising the height of cut and fertilizing with acidifying nitrogen sources. Although cultural management practices may take two to three years to reduce disease severity, they represent an environmentally sound means of improving turfgrass vigor and reducing fungicide rates 25 to 50%. The integration of acidifying fertilizers and systemic fungicides has also been used on golf greens to effectively control summer patch and increase the population of bentgrass 11 to 20% over a three year period.

*This research was supported by the Golf Course Superintendents Association of New Jersey, the Tri-State Turf Research Foundation, the New Jersey Turfgrass Association and the Rutgers Center for Interdisciplinary Studies for Turfgrass Research.*

**Credit: The Greener Side, April '94**

**Editor's comment:** Another note from Dan Dinelli with some information that many people may want to know more about.

Dear Fred,

There are a few things I want to mention. Last fall I was appointed as a delegate to the Illinois Conservation Congress. I am part of a group representing Region 2 (Northeast Illinois). IDOC's Conservation Congress is a fairly new concept; this is only its second year. Other states are looking to follow a similar format. Basically, Conservation Congress is an advisory body who drafts recommendations to IDOC. Several recommendations have already been implemented, such as the Habitat Stamp to raise funds for development of a Conservation Easement Program. The 'set aside program' has been cut due to lack of funds. Because of this many acres of land that was once subsidized will be put back into production. This loss of cover has a great impact on the environment and wildlife. The Habitat Stamp will put acres back into cover, creating wildlife corridors and soil stabilization. Another fund raising effort is the States first environmental license plate. These funds (\$25.00 from each purchase) will be deposited in the State Park Fund. If anyone is interested they should call 217/782-2402.

Another project that arose is the Illinois Natural Resources Month. To create awareness in natural resources, April is Natural Resources Stewardship Month. Again, for those interested in a self help manual, I can send them a copy.

If anyone has any comments or concerns for the Illinois Department of Conservation, I would be happy to work with them. They may feel free to call me at home, 708/480-0203 or at work 708/724-4963.

Also, for those interested in IPM Products, they should consider joining BIRC. The Bio-Integral Resource Center provides information on the least-toxic methods for managing pests. Members receive 10 issues of the IPM Practitioner, a newsletter with latest IPM information. Membership also includes an up to date directory of the least-toxic Pest Control Products. For more information people can call me or BIRC, 510/524-2567.

Dan Dinelli

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