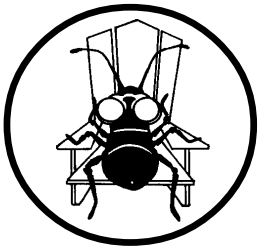
Recognizing and Managing Summer Patch

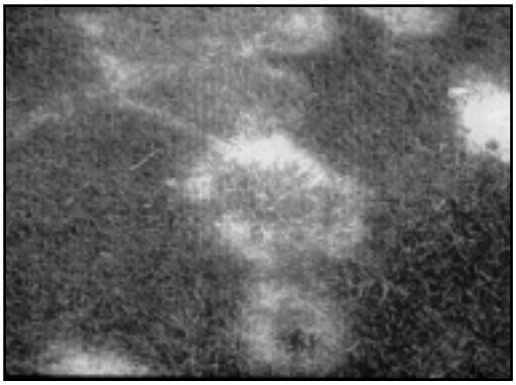


Pest Watch

A number of turfgrasses are resistant to summer patch. Therefore, resodding or overseeding affected areas with tolerant varieties of perennial ryegrass, tall fescue or Kentucky bluegrass is perhaps the best strategy for controlling summer patch.

Of all the patch diseases, summer patch is one of the most dreaded and destructive. Summer patch is caused by the root-infecting fungus *Magneporthe poae*. Symptoms often appear similar to other root and crown diseases; and other environmental and insect problems of turf. Even more confusing is that plant infection and symptom expression do not necessarily occur simultaneously, making control strategies more difficult to implement.

Symptoms first appear later in the season, well after periods of peak root infection. Aboveground damage appears in July and August during hot (85-95˚) weather immediately after a prolonged wet period. Generally, stresses induced by chemical, physical or environmental factors will enhance the symptoms. Drought stress, however, does not significantly influence the development of symptoms.



"Frog eye" patch is a classic summer patch symp-

Initial symptoms appear as small patches of thinning, dead or dying turf that look like symptoms of anthracnose or Pythium root rot. During initial stages of disease development, patches range in size from 1-3 inches. In more advanced stages, patches may be up to 12 inches in diameter. Patches at this stage may appear as a donut shape, with healthy turf in the center. Diseased turf within the patch has a yellow or reddish-brown to straw-colored tan appearance depending on the grass species, temperature and moisture conditions. Under severe conditions and high levels of disease incidence, patches may coalesce to form large areas devoid of turf.

A key element in managing summer patch is the alleviation of stress. Also, promoting a vigorous root system will reduce disease severity. For example, mowing turf at heights recommended for the particular variety are advised. Excessively low cutting heights, particularly during periods of heat stress, may greatly enhance symptoms of summer patch. Fertilization with slow-release forms of fertilizers are also recommended as are deep and infrequent irrigations. Other practices such as aerification, syringing to reduce heat stress, improving drainage, and reducing compaction and thatch will help alleviate symptoms of summer patch.

A number of turfgrasses are resistant to summer patch. Therefore, resodding or overseeding affected areas with tolerant varieties of perennial ryegrass, tall fescue or resistant

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and lawns in open (non-shady) areas. A risk assessment scheme was developed based on these factors, allowing turf managers to assess how likely an area is to have high grub populations before deciding to sample (see Table 1). Lawns 5-20 years old had the greatest number of grubs in risk categories 4-9. Lawns older than 20 years had the greatest number of grubs in risk categories 5-9.

This risk assessment system can be used to determine whether a site should be sampled or not. Low risk properties would not require sampling or treatment. Moderate and high risk lawns would be sampled and treatment decisions based on the outcome. Currently, we advocate sampling a minimum of 20 soil cores from these lawns. Samples should be representatively gathered throughout the lawn. Statistical analysis of our data suggest that an average of 0.25 grubs per 11 cm diameter turf plug could be used as a threshold value for decision making. When mean densities are close to this threshold level, an additional 20 samples should be taken. Use of this sampling scheme and decision rule should result in few treatment errors and could lead to considerable reductions in pesticide use.

Results suggest that grub sampling is an economical alternative to preventative grub treatments for both lawn care companies and homeowners. In 1994, we will be validating the risk assessment model, sampling plan and treatment threshold. These studies will be conducted on 100 lawns located in four sites in the Finger Lakes region. Results will be reported at the annual NYSTA conference and in a future edition of *CUTT*.

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Table 1. Risk Analysis

Risk Rating*	Shade	Kentucky Bluegrass
1	>60%	<30%
2	>60%	30-60%
3	30-60%	<30%
4	30-60%	30-60%
5	>60%	>60%
6	30-60%	>60%
7	<30%	<30%
8	<30%	30-60%
9	<30%	>60%

*Higher numbers = greater risk of high grub populations

Summer Patch

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varieties of Kentucky bluegrass is perhaps the best strategy for controlling summer patch. Mixtures of these grasses provide the most effective control.

Systemic fungicides are effective in controlling summer patch. They should generally be applied 2-3 times at monthly intervals, beginning in the spring. Late season applications should help turf recover once symptoms appear. Fungicides must be applied with sufficient water so that they are carried down to the root zone where they can be absorbed by the plant. Without this drenching, control is much less effective and more costly. Certain contact fungicides, particularly chlorothalonil, may enhance disease development and should be avoided in sites with a history of severe summer patch problems.

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a 58% reduction in Japanese beetle grubs. However, these same nematode species were ineffective in large scale studies. Results of this year's work and similar results from past years suggest that further research needs to be conducted on the interaction and effects of soil type and climate on the nematodes.

The Turfgrass IPM program is a national leader in the IPM effort. In 1993, the program continued its commitment to develop a strong research and extension base. Working with the industry, the program achieved another prosperous season.

The continuing success of the Cornell IPM program make it one of the best examples of partnerships that span growers; managers; research and technology-transfer centers; and legislative and other governmental bodies. For more information contact your local Cooperative Extension agent, or contact the IPM Program, New York State Agricultural Experiment Station, Geneva, NY 14456; telephone (315) 787-2353 for the *1993 Annual New York State IPM Report* and the *1993 Ornamentals Report Pertinent to the IPM Effort at Cornell University*.

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Our research indicates that most prophylactic applications of soil insecticides for European chafer control are wasted because most properties required no treatment.