

# Yellow Tuft on Bentgrass and Bluegrass

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**Illinois Update.** Once again, yellow tuft has developed in both bluegrass and bentgrass turfs in Illinois. The disease was very prevalent last year and again this year. We have observed that the bentgrass variety Penncross is considerably more susceptible than most of the other bentgrasses found in Illinois. Fortunately, yellow tuft does not occur every year and generally does not kill the turf. It is important to be able to recognize yellow tuft. If you mistake it for another disease and apply a fungicide, you have wasted time, money and incorrectly used a pesticide. A review of yellow tuft will help you understand this disease.

**Symptoms of the Disease.** Yellow tuft is also called downy mildew. The name yellow tuft refers to the very dense and tufted appearance of diseased grass. The name downy mildew refers to a condition when the leaves are covered by a white powdery or downy growth. This stage is not often seen in turf because the grass is mowed short, but in roughs you may observe the downy stage. It may remind you of powdery mildew, but they are very different fungi.

*The name yellow tuft refers to a very dense and tufted appearance of diseased grass.*

In addition to the yellow leaves and the downy mildew, the diseased grass plants are very dense due to the formation of many tillers. This is caused by hormonal changes due to the infection. This will cause the diseased turf to appear as a clump of very dense leaves about 2-5 cm. in diameter. These clumps will be randomly scattered in the turf. If you dig the clump of yellow grass up using a pocket knife and inspect the crowns, you will observe that there are a tremendous number of shoots compared to healthy turf. These are the only obvious symptoms that you can use to determine if your turf has yellow tuft. Also, if you were to observe the crowns of the plants under a microscope, you might see very large fungal structures (oospores).

**The Pathogen.** The fungus (*Sclerophthera macrospora*) that causes yellow tuft has some similar characteristics to *Pythium* fungi, but it has some very important differences too. This fungus produces oospores, which are swimming spores. Much like *Pythium*, these spores are the reason that yellow tuft can be spread in a turf by the movement of water, wet machinery, shoes and so on. The fungus also produces oospores, which allow it to survive long periods (years) in the turf. The major differences between this fungus and *Pythium*: 1) it is an obligate parasite; 2) it is less sensitive to fungicides; 3) it generally appears in cooler weather. While a number of fungicide labels list yellow tuft, few have been observed to

(continued page 9)

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(Yellow Tuft continued)

adequately control this disease. The reason is probably due to the fact that the yellow tuft fungus and the *Pythium* fungus are genetically different, and the yellow tuft fungus spends most of its' life deep within the grass plant and inaccessible to fungicides.

**How Yellow Tuft Develops.** When wet conditions prevail for extended periods (weeks) and soil temperatures is above 12 C, this fungus is actively growing. It produces zoospores and these swim or float to a healthy plant and infect it. After infecting the plant, the fungus grows inside the plant toward the crown. There it lives and induces the plants to produce an unusually high number of tillers and turns the leaves yellow.

**Control Practices for Yellow Tuft.** Control is very difficult. Once you have the problem it will be difficult to eliminate. While there are no good data to support differences among varietal bentgrasses in terms of resistance to yellow tuft, some

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have been observed in Illinois (see above). Cultural practices including good surface and sub-surface drainage will reduce disease severity. Balance your fertilization program and avoid over-fertilization, because the fungus will thrive on lush turf.

If you have more questions or want yellow tuft verified in your turf, call one of us.

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9 units category 3B (Turf)  
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8:30-9:00 Registration, Introduction  
9:00-10:00 Herbicide Mode of Action (Turf, Ornamental and Right of Way - Jeff Letton, Agron.  
10:00-11:00 Right of Way/Total Vegetative Control - Dick Baade, Dow/Elanco  
11:00-12:00 Ornamental Bed Weed Control - Jim Barbour, Commer. Extension Horticulturist  
12:00-1:00 Lunch (on your own) Purdue University  
1:00-1:30 State Chemist Update - Carl Rew, Assistant Administrator ISC Office  
1:30-2:00 Pesticide Safety Equipment-Fred Whitford, PhD, Purdue Pesticide Programs  
2:00-3:00 Troubleshooting Pesticide Application Equipment-Fred Whitford  
3:00-5:00 Ornamental Disease Control - Bob Partyka, PhD, Plant Pathologist  
5:00-6:00 Pesticide Containment, Storage and Spill Procedure - Jeff Letton

DECEMBER 15, 1993

8:00-10:00 Ornamental Insect Control - Bob Partyka  
10:00-12:00 Small Animal Biology and Control(Moles, Voles, Muskrats, etc.)-Bobby Corrigan, Small  
12:00-1:00 Lunch (on your own) Animal Control Specialist, Purdue  
1:00-2:00 Turfgrass Insects and their Control-Jeff Letton  
2:00-3:00 Turfgrass Disease Control - Jeff Letton and Bob Partyka  
3:00-5:00 Pesticide Application Technique and Calibration Methods - Jeff Letton

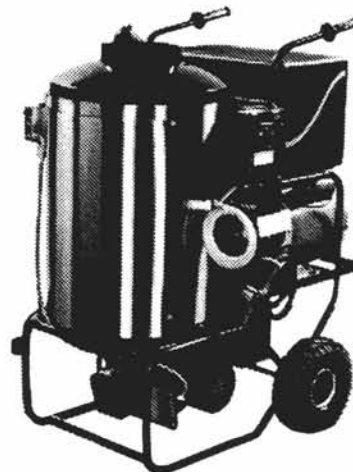
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