What We Know About Yellow Tuft

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Yellow tuft disease is caused by the downy mildew fungus *Sclerophthora macrospora*. *Sclerophthora macrospora* attacks virtually all turfgrasses as well as several major grass crops, including rice, sorghum, and corn. Kentucky bluegrass (*Poa pratensis*) sod can be rendered temporarily unsalable, and a severe infection mars the appearance and the playability of creeping bentgrass (*Agrostis stolonifera*) and/or annual bluegrass (*Poa annua* var. *annua*) putting greens. Infected plants generally are not killed by this obligate parasite, and the disease is primarily a problem on putting greens.

**Symptoms.** On bentgrass greens and tees, the disease appears as yellow spots of 0.25 to 0.5 in. (6.4–12.7 mm) in diameter. In Kentucky bluegrass, and other wider-bladed grasses, the yellow spots are 1 to 3 in. (25–75 mm) in diameter. Each spot consists of one or two plants that have 20 to 30 or more tillers, giving plants a tufted appearance. The tufting, or abnormal tiller production, is induced by *S. macrospora*, which causes a shift in the production of a hormone (possibly indoleacetic acid) that regulates tillering. Roots of infected plants are short and bunchy, and the tufts are easily detached from the turf. During cool and moist periods in late spring and autumn, plants develop a yellow color, at which time the infected plants are “yellow tufted.” The yellowing is the indirect result of heavy spore production by the fungus. These spores swim (zoospores), which accounts for the fact that the disease is more severe in low-lying areas that puddle. Zoospores are produced in lemon-shaped structures called sporangia. Sporangia develop on leaf surfaces from sub-stomatal cavities below the leaf epidermis. During early morning hours, when leaves are wet, the pearly white sporangia can be seen with a hand lens on the upper and to a lesser extent the lower leaf surfaces of infected plants. During most summer months spore production by the fungus. These spores swim (zoospores) by asexual sporangia is the primary route by which large numbers of plants become infected. Crabgrass (*Digitaria* spp) is very susceptible to *S. macrospora*, and this weed serves as a major harborage site for the production of zoospores and oospores.

Over time, new shoots escape systemic invasion by the fungus and eventually *S. macrospora*-free tillers replace the original plants. Escape of tillers explains the ephemeral nature of yellow tuft symptoms in older stands. Seedlings are most susceptible to infection by *S. macrospora*, which accounts for the fact that the disease is most commonly observed in the spring following autumn seeding. The disease can recur in older turfs during years marked by excessively wet weather.

**Culture.** Improving drainage may help to alleviate yellow tuft since the disease is most severe in low-lying areas where water collects. As noted previously, it is in wet environments that the swimming zoospores are able to move easily to uninfected plants.

Yellow tuft can be controlled chemically with either fosetyl aluminum (*Aliette Signature®*) or metalaxyl (*Subdue MAXX®*). For unknown reasons, these fungicides generally perform better when tank mixed with Daconil® (chlorothalonil). Generally, two or three fungicide applications are required to eradicate the fungus in infected plants. After the application(s) of a fungicide, however, plants can retain their tufted appearance for several weeks. It is only until new tillers replace the older infected shoots that plants resume their normal appearance and growth habit.

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