



## Take-All Patch on Wisconsin Golf Courses: How Serious Is It? Can We Control It?

By Dr. Gayle L. Worf

Take-all patch (or "Ophiobolus patch" as some still prefer to call it) of turf has been a disease historically reserved for England and the northwest. About a decade ago it became important on some golf courses in Massachusetts, Rhode Island and Maryland. Other northern states, including Wisconsin, now report it in sporadic, but locally serious outbreaks.

The pattern of its emergence is worth noting. In general, it is on bentgrass, usually on greens that have been recently established, and often following fumigation. In Wisconsin, we've identified it on three courses to date, to my knowledge, two of which were newer courses. Bentgrass fairways have been damaged more than greens, although some spotting has taken place on greens. The causal organism is *Gaeumannomyces graminis* var. *avenae*, and bentgrass, essentially, is the only susceptible turfgrass, although it will colonize other hosts. Symptoms are most evident during spring or fall, probably inspired by cool, moist conditions. It is a crown and root rotter, and occurs in rings and patches, somewhat reminiscent of necrotic ring spot on bluegrass and "Poa patch" on *Poa annua*.

Young turf is usually the most susceptible to damage, and the disease often—though not always—is much less visible and damaging after a few years. Exceptions do occur, so its possibility should not be ignored on turf of any age.

Tentative diagnosis in the field can be made by the pattern of symptoms expressed (eg, patches), the presence of extensively discolored and rotting roots and crown areas, together with active colonization of the affected area by the black, ectotrophic fungus. Because of the possibility of confusion with other ectotrophic fungi, as well as the need to add to our surveillance of the disease in Wisconsin, it may be well to confirm diagnosis through the laboratory.

Can Take-all patch be controlled? Research on the problem as a turf disease (rather than a cereal crop disease) has taken place principally in England and Washington, and more recently by Dr. Peter Dernoeden. Results have not always been consistent from place to place, as you would expect, but there are some definite trends that are worth noting.

1. Fungicides are usually unable to control the disease—but several of them reduce the damage.

2. Higher soil pH (above 6.5) favors the disease over lower pH.

3. Nitrogen sources appear to be important.

4. Chloride ions, as well as adequate P and K may be beneficial.

To accomplish these, I'm inclined to favor Dernoeden's findings as a logical starting point for combatting the disease in Wisconsin. Essentially, these consist of:

1. Ammonium chloride fertilizer. He suggests a total of 3 to 4 lbs N and K per 1000 ft<sup>2</sup> annually for at least two

years.

(In its absence, ammonium sulfate can be combined with muriate of potash, eg, KCl, and a phosphorus fertilizer, if P is needed.)

2. Avoid adding lime or a topdressing soil with a pH above 6.5.

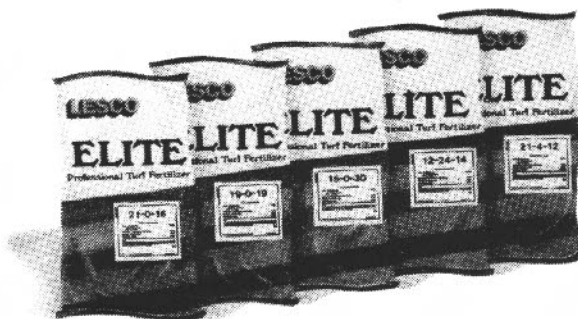
3. Control thatch through verticutting and aerating.

4. Use phenyl mercuric acetate, 1 oz., in October and November, and again the following spring where it is legal to use it for snow mold control (eg, on greens, tees and aprons).

Several fungicides have shown statistical—but not adequate take-all disease suppression in various trials, including Bayleton, Banner, Chipco 26019, and Fore. Sulfur applications, presumably to influence pH, and some other acid-forming fertilizers have looked better than other treatments, too, in various trials. However, none of these have given consistent or adequate responses.

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