

MAY OVERLOOK IMPORTANCE OF ANTHRACNOSE OF 'POA'

A new disease problem attaching "Poa" (*Poa annua*-annual bluegrass) has been identified on many golf courses over the past three years. That is not to say anthracnose (*Collectotrichum graminicola*) is a previously unidentified problem for it is reported in the literature. But while the disease has been reported before, its importance has been overlooked, or more correctly stated, the damage done to "Poa" by anthracnose has been blamed on other factors: **Pythium**, **Helminthosporium**, and high temperature.

It was not uncommon to go onto a golf course in the summer and hear a superintendent say, "Pythium was wiped out my fairways", or "Helminthosporium has wiped out my fairways" and "I treated it with this or that and it didn't help." Nor was it uncommon to walk on a golf course and hear someone say "Look, I can't apply more water, the fairways are saturated and they're still wilting" or "I have even syringed in the middle of the day and they are still wilting."

Attacks Grass Under Stress

The reason the **Pythium** and **Helminthosporium** fungicides didn't work was because neither was the problem. Excess water and syringing didn't work because the grass was not wilting. If anything, the excess water contributed to the anthracnose problem.

The one characteristic symptom of "Poa" infected with anthracnose is its yellow appearance. When Poa or any grass wilts, it turns dark blue to purple, and yet superintendents were talking about their "Poa" turning yellow and wilting.

What is anthracnose? It is a weak pathogen that can attack "Poa", Kentucky bluegrass, and red fescue under stress. It appears to attack during cool as well as warm weather. The yellowing is present under cool or warm weather but death of the grass plant occurs in hot, humid weather conditions. Most of the stress on "Poa" came from the high temperatures last summer. The disease in "Poa" was worse in heavy soil, compacted areas, and heavy traffic areas on hillsides. In one case excess nitrogen fertility was also attributed to symptom development. In Kentucky bluegrass, shade and short root systems contributed to the severity of the disease.

Effective Control

The benzimidazole systemic fungicides (Tersan 1991, Fungo 50, Cleary's 3336, Scotts DSB & Fertilizer) at the 2 oz. rate give the best control when applied as eradicants. Rates of 1 oz./1000 sq. ft., while effective, did not give us as good control as the 2 oz. rate. Four and 8 oz./1000 sq. ft. rates also gave excellent control but the cost is prohibitive. The quickest recovery occurred where the systemic fungicides were drenched in after application. Weekly applications of the contact fungicides Tersan 75, Tersan LSR, Fore and Daconil 2787 were effective.

Many fairways which lost 50 to 75 percent of their turf prior to treatment recovered ten days to two weeks after treatment indicating that the crowns of the plants had not been killed by the anthracnose fungus. Often the roots of the treated annual bluegrass plants are up to 2 inches in length following treatment in spite of the fact the daytime temperatures were in the high 80's and low 90's. In the untreated controls the annual bluegrass roots remained shallow to the point where the turf could be easily torn out. The evidence indicates that much of what has been previously called high temperature killing of "Poa", **Helminthosporium** and **Pythium**, is in fact due to anthracnose.

Preventive Applications

If this summer is hot and humid, or if you are in an area that always has hot humid summers, you may wish to apply 1 oz./1000 sq. ft. of a systemic fungicide when the daytime temperatures start to go above 80°F. and the nighttime temperatures stay above 70°F. This should last for 4 weeks. Then you could apply Tersan 75, Tersan LSR, Fore or Daconil 2787 followed a week later by an additional ounce of a systemic fungicide. Applied as a preventative, one ounce has been effective. Why the contact fungicide if the systemics are so effective? Because resistance to the systemic fungicides has developed for every major pathogen on which it is used. This includes **Collectotrichum** spp. on other crops. There is no reason to believe it won't happen here and if it does happen on your course, you will have to spray every 3 to 7 days with an anthracnose. Using a contact between systemic fungicides application and during the rest of the year will hopefully delay the development of this resistance.

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GUIDELINES FOR PROTECTING AGAINST WINTER INJURY

1. Provide good surface and subsurface drainage. The latter involving primarily drain tile, where needed.
2. Ensure that the turf and underlying soil root zone contains adequate but not excessive amounts of water when entering late fall and winter dormancy.
3. If a soil compaction problem has developed during the summer, correct by soil cultivation--coring, slicing, etc.--in early fall. This will also aid in drainage.
4. Raise the cutting height and/or stop mowing prior to shoot growth stoppage in order to allow an additional accumulation of leaf growth that will function as a protective insulation and enhance both rooting and carbohydrate accumulation that aid in winter survival. However, do not allow too much leaf growth to accumulate to the extent that it increases the potential for snow mold disease problems.
5. Be sure that any excessive thatch is controlled prior to entering the winter period. This is particularly important in the case of disease and winter desiccation problems.
6. Be sure that the turf enters the fall hardening period with an adequate nutritional level; but avoid nitrogen fertilization during the cold hardening period when deep rooting, carbohydrate accumulation and decreased water content need to be encouraged.
7. Ensure that adequate potassium levels are provided. A minimum ratio of nitrogen-potassium of 2 to 1 is suggested.
8. Provide adequate preventive protection against winter diseases by applying the appropriate fungicide.
9. Provide an appropriate winter protection cover where desiccation and/or low temperature kill are particularly severe problems and winter play does not occur. In some locations this may involve enhancing snow accumulation.
10. Do not allow traffic (foot, ski, or vehicular) on turfs during periods of warming when the snow cover is in a wet-slushy condition and a subsequent severe freeze is possible.