

# ANTHRACNOSE—

## Serious Disease Problem

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**A**nthracnose, a disease of cool-season grasses, was first found in South Carolina on a golf course in Spartanburg County in November, 1966. All 18 playing greens plus the practice green had been overseeded in mid-October with seaside bentgrass at three pounds per 1,000 square feet, following usual overseeding preparations.

### No fungicide program was followed.

By mid-November, all 19 greens were in such bad condition that they were overseeded with seaside bentgrass a second time, using the same seeding rate. This second overseeding was lost before mid-December. Then help of a plant pathologist was requested. Needless to say, it was too late to overseed again to produce a good winter playing surface, but a lot was learned during the following weeks.

This disease is caused by the fungus *Colletotrichum graminicola* (Ces.) Wils. and is a well known pathogen of cereal crops and pasture grasses. It has been a problem on cool-season species of turfgrasses in several areas, especially the Pacific Northwest for many years. Since it is known to be seed-borne and since it had not been known to occur in South Carolina before 1966 it was presumed to have been introduced by means of contaminated seed. A high percentage of the seed used for overseeding purposes in the South is harvested in the Pacific Northwest, so various seed lots from this area were checked for anthracnose contamination. Results of these tests confirmed the postulation of seed-borne *A. graminicola*. Grass species tested included annual ryegrass, perennial ryegrass, highland bentgrass, seaside bentgrass, and common creeping red fescue.

In the fall and early winter of 1967, anthracnose was found in overseedings in several additional areas of South Carolina. There were also unconfirmed reports from four other locations in North Carolina. After checking greens in both states during late fall and early winter of 1968, it is believed that anthracnose is now widely distributed and will continue to present a threat to overseedings each year.

### Symptoms

The symptoms of this disease deviate somewhat from those given in Couch's *Diseases of*

*Turfgrasses* in that the spots on individual leaves do not exhibit a pronounced reddish-brown color. Generally speaking, very large areas are affected, and the entire green will begin to look "thin."

The use of annual ryegrass in the overseeding mixture presents a difficult diagnosis problem. It has been observed that annual ryegrass is more resistant than the bentgrasses, fescues, and/or *Poa trivialis*. Since the ryegrass germinates more quickly and develops more rapidly, the disease situation on the other grasses usually remains undetected because of this "masking" effect of the ryegrass. By the time symptoms are observed on the ryegrass, chances are that the bentgrasses are completely gone and that the fescue or *Poa trivialis* stand is reduced by 60 to 80 per cent.

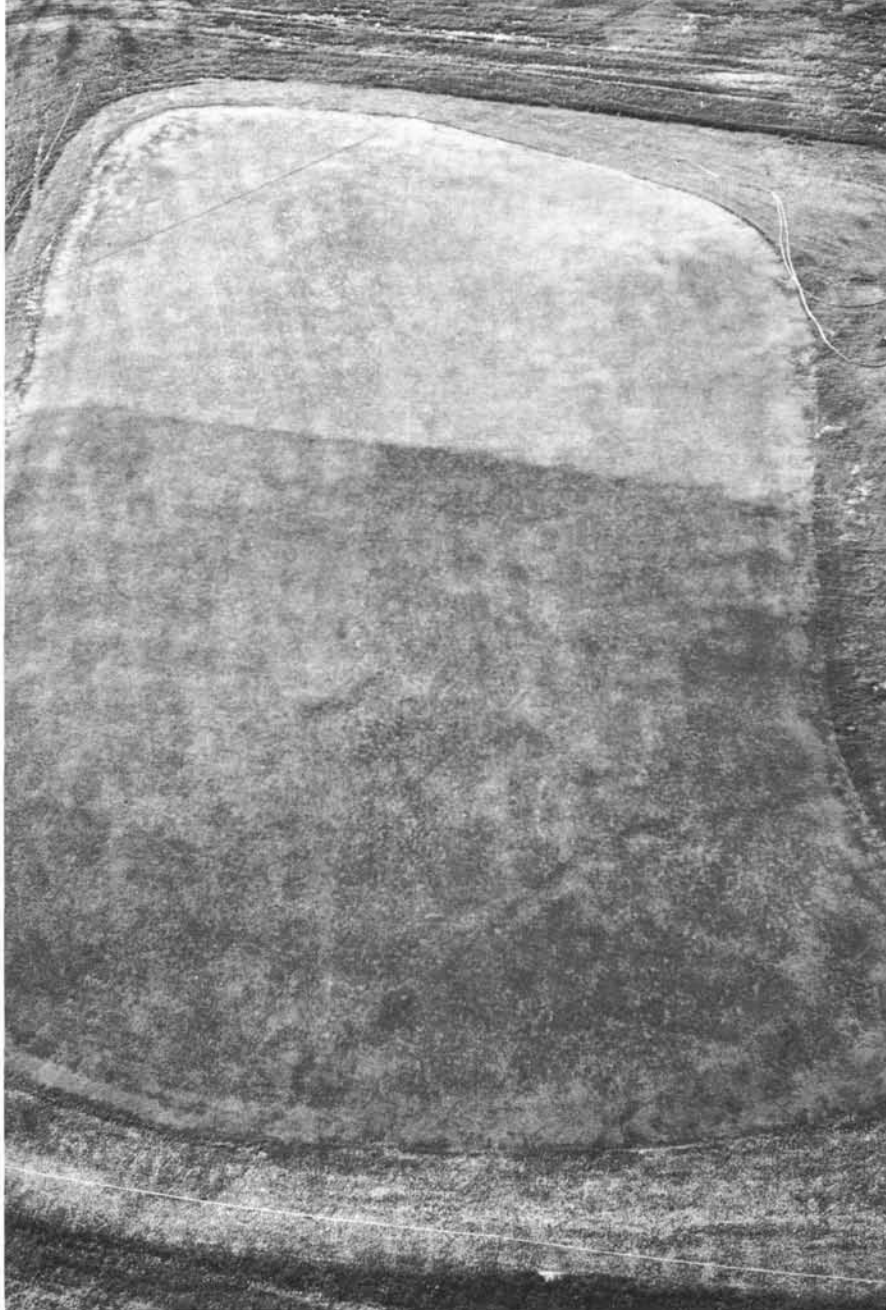
Typical leaf symptoms of all grass species include:

- 1—General blotchiness, which is light tan to yellow;
- 2—As the disease progresses, individual leaves turn straw to dirty white;
- 3—During this color change, the affected leaf begins to shrivel drastically from the tip toward the base—this closely resembles damage caused by a dull greens-mower;
- 4—The final stage involves formation of tiny, black fruiting bodies (*acervuli*) of the fungus on the older diseased leaves.

### Control Measures

The use of a sound fungicide program on golf greens throughout the year cannot be overstressed. However, during overseeding time, more care than usual must be exercised since seedlings are much more susceptible to chemical injury. It was learned that some of the more common turf fungicides when used at "normal" rates could severely injure the emerging seedlings. Control of anthracnose could not be achieved when rates were reduced to non-phytotoxic levels.

Because of these factors, some of the older, less phytotoxic agricultural fungicides were com-



*Aerial view of green used for fungicide trials in the control of anthracnose. Diseased portion untreated and healthy portion treated at 10-day intervals with 6 ounces of Zineb (2-78) per 1,000 square feet giving good control.*

pared with standard turf fungicides in 1967 and again in 1968. Results of these tests indicated that maneb, zineb, or ziram when used at 6 ounces per 1,000 square feet every two to four days would provide "curative" control of anthracnose. When any of these three chemicals were used immediately prior to or following overseeding, a high degree of "preventive"

control was provided for from six to 10 days.

It is recommended that preventive fungicide treatment should start with the overseeding operation and then be continued at seven- to 10-day intervals throughout the winter season. Waiting for the disease to appear is inviting disaster and will usually result in re-overseeding or extremely poor winter greens.