

# Enigma of Spring Dead Spot

by  
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Loss of bermudagrass in the northern limits of its adaptation has been of great concern during the last 10 years. Reasons for the exact loss are not yet known but many factors appear to be involved. Spring Dead Spot has definite patterns or outlines whereas winter kill does not.

At the present time studies are being made by two pathologists: Dr. Homer G. Wells, Tifton, Ga. and George M. Kozelnicky, University of Georgia, in Athens. These scientists are trying to establish the cause of the bermuda loss, and at the same time, attempting to control it by various combinations of fungicides, fertilizer, and management practices.

The study of spring dead spot was started in 1957 in Oklahoma by Dr. Harry Young and Dallas Wardsworth. Later, Mallinckrodt Chemical Works released a fungicide (Spring-Bak) showing promise of control in the St. Louis area. However, the symptoms are difficult to pin down since they appear under many different growing conditions.

**LOW TEMPERATURES** have been associated with this bermudagrass disorder. Bermudagrass suffers the most in the Southeast during winters when the temperature is at zero degrees or just below. This may indicate that temperature is a contributing factor, but not necessarily the main culprit. Many greens go through severe cold periods without loss of bermuda. Therefore, temperature range is possibly the contributing factor involved.



*Close-up of typical Spring Dead Spot on bermudagrass*

**TRAFFIC** when bermuda greens are frozen, have frost, or are thawing out from severe freezes, contributes to the loss of bermuda. It would be advisable to close the course under adverse weather conditions, especially those mentioned above. Those in charge of the course should have full authority to make this decision. Furthermore, when hole settings are left too long in one place during adverse weather, bermuda loss is again likely to occur.

**THE DISEASE** angle has been studied for some time in the midwest, especially Oklahoma and Missouri. Symptoms in the midwest appear to be the same as in the South, yet they have not been proven to be the same. A two-year study shows the major diseases in the southeast to be *Rhizoctonia*, *Helminthosporium*, *Pythium*, *Fusarium*, and *Curvularia*. Perhaps one of these diseases may have been present at one time during the year and thereby weakened the plant and eventually caused its loss. So far, a properly handled nabam-base fungicide has given the best results in the Midwest against loss of the bermudagrass from disease. But this has not been true in the Southeast. Dieldrin has shown promise in this area but, in turn, has been erratic in Oklahoma.

**POOR DRAINAGE** has caused a terrific loss of bermudagrass by both winter kill and/or spring dead spot. It has been one of the major reasons for rebuilding greens over the last 20



*Tifgreen (328) treated with dieldrin in foreground — less spots.*

years. New courses are being built today that will have to be rebuilt within five years unless proper construction procedures are followed. Bermudagrass does not do well in poorly drained soils. Low spots and areas where puddles develop are usually the first to experience bermudagrass loss.

**SHADE** is not good for bermuda greens. They are usually among the first to be in difficulty. Unless a tree is strategically located or is important to the play of the hole, it would be advisable to trim or eliminate it and thus prevent shading of a green.

**FERTILIZATION MAY** not be the culprit, but we frequently find low pH values and high

nitrogen levels associated with bermudagrass loss. The cause may be due to excessive growth during a disease outbreak, or possibly to a build-up of fungi. This in turn may weaken the grass and regrowth may not occur during the transition period. A slow down in growth brought about by less total fertilization has shown promise.

**HEIGHT OF MOWING** can influence the loss of grass. In many instances, the "low cut" turf suffers most while "high cut" turf will have no loss. Some courses now mow higher just prior to fall seeding. They also top-dress heavily one week before it. This seems to protect the stolons and helps during spring transition.



*The best kept hybrid lawns are first to have Spring Dead Spot.*





*Drainage can be a factor on greens.*

**HEAVY VERTICLE MOWING** of bermuda greens is not a good practice. Very little vegetation should be taken off the greens, rather, they should be cut lightly at frequent intervals, such as weekly. Do not let them go longer than every two weeks. Heavy verti-cutting weakens the grass, and it takes several days for the putting surface to be acceptable for play. Late fall vertical mowing, such as on the day of overseeding, might very well hinder bermudagrass survival. If seeding is delayed and the greens are denuded, bermuda is further weakened by cool nights and shorter growing hours. Recovery in the spring is that much more difficult.

**DESICCATION** may cause a loss of bermudagrass. With frequent cold fronts moving through the South, a low humidity can exist, and moisture is removed from the upper turf zone readily. The soil becomes dry and the moisture content becomes so low that the grass is weakened. These may cause a poor transition in the spring.

**AERATION** is one of the best ways to counteract traffic or compaction. Cultivation has been the life saver of many greens. Usually, greens that are thoroughly aerified during the spring

and fall do well. Where there is excess traffic during the summer, it is advisable to aerify the bermuda greens once a month during the active growing period, and cease aerifying about four weeks before overseeding.

To summarize the factors influencing the loss of winter bermuda turf, we could list the following:

- 1) *Dieldrin has shown promise for control of spring dead spot, but is erratic.*
- 2) *Complete renovation of the troubled area has given the best results, but is not always practical on golf courses.*
- 3) *A nabam-base fungicide has given best results in the St. Louis area.*
- 4) *It is best to carry on maintenance practices that encourage strong bermudagrass growth at all times.*
- 5) *Be sure to go into the winter with very healthy bermudagrass, and minimize disease and other problems that could weaken bermudagrass during the winter.*

There is so much concern and interest in the problem that the second Spring Dead Spot Symposium will be held at the University of Georgia, Athens, Ga., on June 11, 1968.