



## 1970 Down South — Disaster Hits Bermuda Grass

*Spring deadspot is still a problem in bermuda but in most cases it lost its identity because of winterkill.*

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You have heard the adage that history repeats. During the winter and spring of 1969-70 we certainly had a repeat of loss of bermudagrass north of an imaginary line extending from Jackson, Miss., to Charleston, S.C. Eight years ago we lost grass in the same area; however, the 1970 winter was worse, and the loss extends from greens, into fairways, roughs, and tees.

There is no doubt that prolonged low temperature is the main culprit, and there are numerous variations in symptoms where grass was lost. However, other factors were involved.

According to the Georgia State Climatologist, January, 1970, had the longest prolonged period of freezing temperatures in the South since 1898. As a result, frost lines penetrated deeper than ever before. Ice skates

were brought out and lakes at country clubs made excellent skating rinks covered with from four to eight inches of ice.

In some areas, the average temperature for January was 8.8° below normal and moisture was four inches below normal. Similar departure from normal temperature and moisture conditions existed in Birmingham, Memphis, Nashville, Charlotte, and Greensboro, N.C., and from four to six inches of ice covered greens in some locations.

Recovery from low temperatures was less where there was a heavy buildup of thatch which could be due to a reduction in radiant soil heat circulation. The thatch could promote circulation of cold air around the elevated crown tissue. Air temperature can be freezing, while below the soil surface is not freezing;

however, the longer the atmosphere is freezing, the deeper the frost line goes.

There is indication that traffic throughout golf courses played a very important part in loss of bermudagrass. If members insist on playing during adverse weather conditions, especially as they existed during January, 1970, and during an unusually cool spring, they can expect the worst — loss of grass. The bermudagrass did not make fast recovery where there was repeated use of better pin settings, and in some instances, in August and as late as September 15, some of these areas still had not recovered completely. Those that were replanted naturally recovered faster; however, many were slow in doing so.

It would be advisable to close the course for play when adverse weather conditions exist during periods of excessively low temperatures. Golf should not be played unless there are alternate greens.

Recent research shows Tifgreen bermuda clippings were decreased as compaction pressures were increased. After several months of compaction treatment, die back was evident in turf within the high compaction range (60 to 80 psi).

Spring dead spot was camouflaged in the winter kill patterns and we did not see as many definite round patterns normally observed which are usually termed spring dead spot. Some could have existed, however, since grass had not recovered before overseeding on September 25.

Drainage played a very important part in loss of bermuda, especially on greens. It appears that the better drained greens suffered less than poorly drained ones. Greens with good drainage had a deeper root system and survival was superior when compared to poorly drained greens. Drainage has certainly been brought to the attention of those who have not felt it

important to construct greens or tees properly, and there is no doubt that the poorly drained greens and tees compact readily.

Shade should not extend over bermuda greens because these greens are usually the first ones to be in difficulty. Unless a tree is strategically located, or it is very important to the play of the hole, it would be advisable to trim or eliminate it if it shades the green. Although trees provide some protection from cold winds, the shade may cause loss of grass.

Height of mowing is a contributing factor to loss of grass, and a comparison of putting surface with the adjacent area is a classical example in height of mowing and loss of grass. The practices of mowing higher just prior to overseeding and topdressing heavily one week before overseeding both are practical.

Topdressing seems to protect the stolons and aids in grass recovery in the spring transition. Topdressing one week prior to overseeding and following with another very light topdressing after overseeding sandwiches the seed between the soil layers and insures a better stand of grass. At the same time, it protects the stolons and underground parts of the grass for assurance of regrowth in the spring.

If greens have been vertical mowed lightly at one to two week intervals, then there will be less grass to remove in preparation for overseeding. If they have not been vertical mowed regularly, then use of topdressing would be advisable. The use of brushes and combs will reduce the excess growth to allow seed to be in contact with the soil.

Fertilization may not be a major factor; however, composite chemical soil analysis indicated a low potash nutrient level where grass was lost. This has been very undesirable for survival of bermudagrass following harsh winter conditions. It is advisable to harden off grass in the early fall by proper application of P & K to

*Compaction is one of the main factors resulting in loss of grass.*





*Greens were replanted rapidly where large equipment was utilized.*

have a buildup of proper nutrients in the cells to assure energy for better transition in the spring.

It is not advisable to use excessive amounts of nitrogen during the early fall when you are trying to harden off the bermuda. However, when overseeding has been completed, continuous use of nitrogen is required to establish and maintain a putting surface with the cool season grasses being used for winter play. We are actually working against the survival of the bermudagrass and we must keep the P & K nutrient level adequate.

Overseeding **versus** not overseeding has been discussed for many years. Mulching of greens in the Memphis area is still a common practice, but improved green construction and improved modern techniques of growing grass with plant protectants are showing bermudagrass is able to survive with overseeding in the area where mulching has been practiced. In most cases where bermudagrass greens are mulched, alternate greens are used for winter play and the mulch is removed after the last frost, or about April 1. This spring, however, some grass was lost under the mulch, but greens were replanted and were back in play early. Greens that were

dyed and played on in most cases had a severe loss of grass.

The modern method of planting stolons minimizes the period that greens were out of play. Large equipment was used and some greens were planted in 30 to 40 minutes with 10 or more bushels of sprigs per 1,000 square feet. In many instances they were back in play in four to seven weeks. Prior to planting, the putting surface was vertical mowed in three directions, debris removed, and the stolons pressed into the soil. Topdressing followed. Frequent syringing and weekly applications of plant protectants gave a high percentage of survival of new stolons.

There is no doubt that early aerification in March and early April and thinning of the cool season grasses encouraged better survival of bermudagrass. This hastened the transition and reduced competition so that bermudagrass could grow faster, but there was still much competition from the cool season grasses.

Frequent use of power disk spikers starting March 1 helps to counteract compaction created during the winter months and allows the bermuda to grow in the slits which can be seen in patterns on the putting surface. Do not

spike when the ground is frozen or when frost is on the greens. When there is excess traffic during the summer, it is advisable to aerify the bermuda greens once a month, ceasing to aerify about three to four weeks before overseeding.

There has been much discussion of the survival of particular strains of bermuda, but at this time there does not appear to be any significant difference in cold hardiness of Tifgreen over Tifdwarf. It appears that the major differences are conditions that exist on individual golf courses and turf cultural practices.

Research shows better survival and faster recovery where bermuda was treated with fungicides. These plant protectants were applied during the summer of 1969 and in February and March 1970 and watered into the root zone. At the present time, we do not have a superior winter hardy bermudagrass. More stress will have to be placed on the ability of the turf manager for better survival of bermudagrass he is maintaining under adverse winter low temperatures.

Where bermudagrass greens are overseeded eight to nine months of each year, some turf managers are converting to bent. Changing from bermuda to bent on greens has been done to avoid several undesirable features of bermuda. Overseeding each year is time-consuming, and loss of bermuda in the spring is very discouraging. At the present time, bent is being maintained about 100 miles south of Atlanta, and it

has been in play for two years. This is no doubt the furthest south bent is being grown year round in the southeast.

The greens must have good surface drainage, good internal drainage, and good sub-drainage for best results, and you cannot make a mistake during the hot summer or the bent may be lost.

Changing grass alone will not solve the problem, but where greens have been built properly, they can be converted to bent without taking them out of play. In 1970, Charlie Danner, superintendent of the Capital City Country Club, Atlanta, has converted 12 bermudagrass greens to bent by applying Siduron at 13 ounces per 1,000 square feet just prior to overseeding the bermuda (Tifgreen 328). Danner applied two pounds of Penncross per 1,000 square feet in September, 1969. Application of Siduron was repeated in March, 1970.

So far, Tifgreen survival has been less than 1 per cent. Siduron will be applied again the latter part of September, 1970, and in March, 1971. Siduron (Tupersan) is not recommended for use on bermuda unless you want to retard or kill the grass. This chemical also shows much promise in keeping bermuda from invading edges of bent greens.

Unless we can reduce the loss of bermuda each spring, more clubs will be converting to bent; however, if you make a mistake during June, July, and August, you can lose bent.

## SUPER SAM by Paprocki

*"Wish these greens could go south for the winter."*

