

Uncovering The Benefits Of Covers



Belle Meade Superintendent Doug Ward covers the back two-thirds of his tees during the winter. The front third is overseeded and left uncovered.

Last December, temperatures in the Southeast plunged below the 20s and stayed there for almost two weeks. Hundreds of bermudagrass greens from Georgia to Texas never recovered from the shock. This spring and summer, superintendents have been busy replanting their greens that suffered either partial or complete winterkill.

"This past winter was the most devastating for turf in 20 years," reveals Dr. Coleman Ward, professor of agronomy and soils at Auburn University in Auburn, AL. "We lost St. Augustine, centipede, zoysia, and a lot of bermuda cut below rough height. Superintendents and sports turf managers across the South are taking a much harder look at winter protection."

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Ward and fellow Auburn professor Dr. Ray Dickens believe turf covers prevented a considerable amount of winterkill in their state. Dickens has been studying different types of winter covers for more than six years. He has explored straw mulch, black plastic, and a number of geotextile covers in the process. All materials have been evaluated for their effect on cold protection and spring greenup.

"In areas where winterkill is likely, covering golf greens and tees has been a common practice for many years," reports Dickens. "Pine straw, cereal grain straw, or black plastic were the materials used until recently. However, the straws require considerable labor to apply and remove and may introduce unwanted weed seed. Black polyethylene generally lacks adequate strength to resist tearing, and does not allow free flow of air and water into the turf and soil. Neither of the materials is reusable over a period of years."

Dickens found that a few covers made of geotextile fabric were durable, permitted flow of air and water, could be installed or removed in a matter of minutes, and could be used for a number of years. Further research established that these covers prevented winterkill as well as mulches and improved spring greenup.

Since the new covers were easier to use, Dickens and Ward developed a procedure they call the "Put and Take System." Any time temperatures fall below 25 degrees F., the covers are installed on greens or tees and left on until the weather improves. Usually, this period is limited to short cold spells and corresponds with the amount of

play on area golf courses. "The longest subfreezing period I can recall was last December, when some greens were covered for 13 days," Dickens adds.

"Almost all covers work better than pine or wheat straw," he states. "You don't have to build temporary greens, as you would with straw. Spring greenup is significantly improved, and you don't have to worry about keeping straw in place." Dickens' tests did reveal that pine straw reduced the fluctuation in temperature better than covers.

According to Dickens, there appears to be little correlation between the amount of green bermudagrass in the spring and the temperatures observed under the various materials during cold periods. Ward and Dickens do see some differences in the way the fabrics hold water and debris. "You want the material to be dry and clean when you remove it," they remark. "Dry fabric is easier to handle and store."

Part of their responsibility during the year is to advise the golf course superintendents in Alabama's park system. Last year they recommended that Kenny Morgan, superintendent of Oak Mountain State Park Golf Course in Pelham, AL, try the Put

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and Take System with geotextile covers on half of his greens.

Oak Mountain has more than 70,000 rounds per year and does a sizable winter business. The course is overseeded each fall with perennial ryegrass. In previous years, nine greens had suffered varying degrees of winterkill. Four are on the front nine and five are on the back. These were the greens Morgan covered with Reemay's Typar when temperatures fell below eight degrees for four days.

In late March, the results were evident

as the Tifgreen started to green up. The nine uncovered greens, which had not experienced winterkill in previous winters, were severely damaged. The nine that had problems before, but had been covered that winter, were healthy. "We had to rebuild six of the nine uncovered greens," adds Morgan. "We removed the dead sod and the top three inches of soil, replaced it with sand, and rototilled the sand into the top ten inches of the greens. All nine damaged greens were resprigged with Tifgreen. It was tough finding 328 sprigs this spring."

When asked if he had considered bentgrass for his greens, Morgan responded that the heavy traffic, frequent 100-degree-plus summer weather, and high humidity would be too much for bent. "It's not unusual for temperatures to stay above 100 degrees for a week," he remarks. "That doesn't slow down the traffic. We stay busy from dawn to dusk, seven days a week. The turf on our greens and tees must be aggressive in July and August, because there is hardly any time to work on them."

In Nashville, TN, a few hundred miles northwest of Oak Mountain, Belle Meade Country Club Superintendent Doug Ward

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Severe winterkill of Tifgreen green at Oak Mountain State Park Golf Course that was not covered last winter.

Benefits of Covers

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has discovered that maintaining bentgrass greens in the summer is not as difficult as some would believe. "From the Fourth of July to the end of August we have to stay on top of the greens," says Ward. "Any bentgrass problems are minor compared to the winterkill of bermudagrass. Belle Meade has had Penncross greens for nearly 20 years."

This winter Belle Meade lost 90 percent of the common bermuda in the fairways and more than 30 percent of the hybrid bermuda on the tees. "We got hit hard," Ward admits. "It would have been much worse if we hadn't covered the tees. I also think raising the height on the tee mowers before we cover the bermuda in the fall helps."

Ward covers all but the front ten yards of each tee in the fall with Evergreen covers from HPI. Before the tees are covered, he lets the Tifway grow from 1/2 inch to nearly an inch in height. The covers are then put in place and secured with six-inch sod staples. Throughout the winter, and until the danger of frost has passed, the tees remain covered.

"When I joined the club four years ago, the tees were mulched with straw in the winter," Ward says. "Straw is messy and takes a lot of labor to clean up in the spring. It's usually wet when you need to remove it. Covers take a fraction of the labor to install and remove, and you don't have to worry about disposing of straw. When we pull them in the spring, the bermuda is greener and cleaner than with straw."

For two years, Belle Meade covered its tees without losing any bermuda to winterkill. Last winter the cold was so severe that not even the covers could save all the tees. "We had greens with no damage,

and others with partial winterkill," reveals Ward. "But the covers definitely afforded some protection. This fall I plan to let the bermuda grow to 1-1/4 inch before we cover it."

The winter was kinder to the bentgrass greens. Ward was concerned that one green he renovated in October would not be ready for play this spring. "We started late," he admits. "By the time we seeded it was the end of October, so we put one of the covers on the green. We were able to cut the bent in three weeks and opened it for play the first of April. That's real good for a later fall seeding. The cover also prevented some heavy rains from eroding the green surface."

Speeding up germination of turf seed is one of the oldest uses for geotextile covers. For nearly ten years, superintendents and sports turf managers in the northern U.S. and Canada have utilized covers to trap and hold the heat of the sun.

"Temperatures underneath our covers are sometimes 20 degrees higher than uncovered areas," reveals Barry Britton, superintendent at Lionhead Golf Course near Toronto, Ontario. The 27-hole public course, set to open next spring, is months ahead of schedule. This is due in part to the covers.

"I've used Evergreen covers on greens, tees, and portions of the fairways," remarks Britton. "By seeding instead of sodding, we have saved thousands of dollars. We usually have germination within five days and solid cover within ten days. That's phenomenal under our conditions."

The course sits on a sandy plateau above Lake Ontario. Gusts of 25 m.p.h. can desiccate the Penncross greens and tees and the Pennway fairways during establishment unless precautions are taken. According to

Britton, the covers save three to four weeks during seeding and improve the percentage of germination. "We hydroseeded as low as 3/4 pound of bentgrass per 1,000 square feet and got a dense stand," he remarks. "We had roots nine inches deep on the greens in less than two months."

Britton dormant seeded some areas last November and left them covered all winter. He likes the way the covers disperse irrigation and rainfall without splashing. "Once we seed and roll, the surface remains smooth and solid," he adds. "Because the covers breathe, they dry quickly and can be installed or removed in 20 minutes."

Britton points out that the covers are also used by sports turf managers at schools and parks to speed up germination of Kentucky bluegrass and perennial ryegrass in the goal mouths of soccer fields and the center of football fields. "They are an alternative to sodding, especially where the growing season is short," he states. "You can get a two- or three-week jump in the spring by covering these areas in the winter. It's also a clear sign to people to stay off the turf. Skiers and snowmobilers don't seem to damage covered turf as much when it's under snow."

Covers may also have benefits in parts of the country where winterkill is not a threat. Near balmy San Diego, Larry Runyan, superintendent at Rancho Santa Fe Golf Club in exclusive Rancho Santa Fe, believes covers have a number of useful purposes.

"In the winter, nighttime temperatures drop below freezing pretty regularly," Runyan points out. "You never know if you'll get to work and the greens will be covered with frost. The ground is not frozen, just the foliage of the turf. You can't get on the greens to mow and open the course until the turf thaws out. Delays of two hours are possible when this happens. Tee times get pushed back for the rest of the day and the course can lose more than 60 rounds."

Runyan calculated that a busy resort course could lose more than \$150,000 in revenue because of morning frost in one year. This past spring he implemented a program of covering the greens with geotextile at night when frost was predicted. The covers warmed the greens up rapidly by trapping the early morning sun. By the time the greensmowers were fired up, the covers could be removed from the

first greens so they could be cut. "We didn't lose a single round this past spring," boasts Runyan.

The other headache of San Diego superintendents is *Poa annua*. The Mediterranean climate is apparently perfect for the light green prolific seed producer to invade golf courses. Runyan reasoned that part of the problem with annual bluegrass invasion was a lack of aggressiveness in the bentgrass caused by cold evening temperatures. "It made sense that if we kept the greens warmer at night, the bent would resist *Poa* invasion better," he states. "It looks to me the greens we covered this winter and spring have a lower population of *Poa*. Covers may be able to help some courses reduce the amount of preemergence herbicides they apply in the fall when *Poa* germinates."

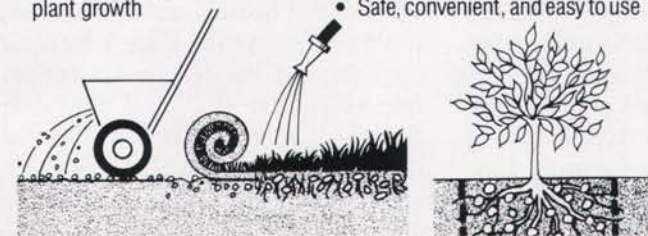
The winter of 1989/90 was unusual in many parts of the country. There is no way superintendents and sports turf managers can protect their facilities completely against nature's fury. However, there are tools that soften the blow and reduce the vulnerability of increasingly valuable turf to natural disasters. Covers are simply one of those tools. ☐

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