

# Ultradwarfs in the Off-Season — A Winter Wonderland

Winter may be the off-season, but with proper care, ultradwarf bermudagrass putting greens do not miss a beat.

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**T**he ultradwarf bermudagrass varieties have evolved from being labeled the next new thing to being considered the replacement for Tifdwarf bermudagrass. Their performance has been so strong that many golf courses with bentgrass putting greens are either considering or have replaced their bentgrass with an ultradwarf bermudagrass. A key component to having successful ultradwarf putting greens is managing them to a high standard in the winter months. This article will review how to prepare an ultradwarf for cooler months and what issues will need to be addressed. For the purposes of this article, the term *ultradwarf* refers to the varieties Champion, Miniverde, and TifEagle.

Nowhere is the art of greenkeeping more prevalent than in ultradwarf winter management programs. Beginning with their introduction almost ten years ago, superintendents with ultradwarf varieties adopted new philosophies and maintenance techniques in response to their unique characteristics. Because scientific research has been scarce or is just beginning in many of these areas, many of the ideas presented here are taken from superintendents who have extensive experience with ultradwarf varieties. We would like to thank Tim Etheridge, Dothan Country Club; Rodney Lingle, Memphis Country Club; Danny Malone, Berkeley Hall; and Ron Wright, Country Club of Mobile, for their contributions.



A painted ultradwarf bermudagrass putting green provides winter color without the negative attributes of overseeding.



Winter injury is no laughing matter. Covers must be used.

This article focuses on transition zone golf courses with ultradwarfs, but courses with 12-month growing seasons may find useful tips, too.

## NO OVERSEEDING: A GOOD START

Winter management begins in the late summer, and the first item on the checklist is to not overseed the putting greens. In an era when most changes in the game of golf are making the game either more difficult, more expensive, or longer to play, there is a bright spot on the horizon. By not overseeding, superintendents with ultradwarf varieties are able to create more days of higher-quality putting surfaces. Bonuses with this approach include fewer inputs and lower costs.

The advantages of not overseeding can be summarized in the points below:

- **Elimination of Transition Periods** — Both the establishment of overseeding in the fall and its removal in the spring are influenced heavily by weather, are stressful to the bermudagrass base, and, most important, are highly disruptive to play. Not overseeding eliminates both transition periods.

- **Improved Putting Quality** — Golfers are not going to tolerate a no-overseeding program if putting quality is compromised. Regular observation of ultradwarf bermudagrass putting greens for the last ten years indicates that the best putting quality occurs approximately between April through early June and late September to late November. These are the periods when the bermudagrass is green and growing moderately, but temperatures are not in the optimum range for maximum growth. Winter putting quality is excellent, too. Maintaining excellent greens during these periods while avoiding competition

from overseeding sets the stage for stronger greens in the spring and a better base to start the summer.

- **Organic Matter Dilution** — One of the secrets to successful putting greens over a long period of time is the dilution of organic matter in the upper rootzone with sand topdressing and core aeration. Overseeding adds more organic matter to the upper rootzone and therefore increases the amount of sand necessary to maintain a sand matrix in the upper rootzone. Putting greens that do not receive enough sand in aeration holes and surface topdressings are much more likely to experience secondary problems such as algae, scalping, poor drainage, disease, and bad transitions. Golf courses that do not overseed can lower their annual sand requirement.

- **Ease of Maintenance** — There is something to be said for the fact that with a no-overseeding program, the entire maintenance program can be set up around the needs of the bermudagrass. With an overseeding program, maintenance practices must be performed that are not ideal for the bermudagrass base. Contrast this with the fact that a non-overseeded green is able to take advantage of every day when temperatures and sunlight are adequate for growth.

- **Wear Tolerance** — A fear among those who are considering overseeding is high traffic in winter causing thin turf or areas of exposed soil on the putting greens. We do not see these problems occurring. The density and long growing season of the ultradwarfs allow turf to remain on the surface throughout the winter months even under high levels of play.

## FALL MAINTENANCE

Fall is a time of year that brings a wide variation in temperatures. The management of an ultradwarf for the cooler fall and winter temperatures begins in early September. With these changes comes a shift in maintenance strategies.

## MOWING HEIGHT MANAGEMENT

Cooler fall temperatures slow ultradwarf bermudagrass growth, and green speeds begin to increase at a given mowing height. For courses that do not overseed, excessive green speed in the winter months when growth has ceased is a real concern, but it can be prevented. Waiting until green speeds have exceeded a reasonable level is not the time to think about raising the mowers because no growth is occurring. The



solution is to begin raising mowing heights incrementally beginning in September. Temperatures can vary widely from week to week in the fall, and there is no absolute formula for how and when to raise mowing heights. Instead, we share with you the programs of three golf courses in different parts of the Southeast.

Ron Wright, The Country Club of Mobile, Mobile, Ala.: "I let member comments and the Stimpmeter tell me when to raise heights. Depending on the weather, we typically begin to raise heights from .130" to .140" during early October and then to .155" in late October to early November. Then we will alternate mowing and rolling in order to keep speeds in the 10-foot range."

Tim Etheridge, Dothan Country Club, Dothan, Ala.: "We slowly start raising the mowing height for winter in mid-September and try to get the height up to .150" by the end of October."

Rodney Lingle, Memphis Country Club: "In late summer we are usually mowing at around .125" and we are double-cutting every day. Around September 15, we start gradually moving our mowing height up to protect against winter kill and to give more rooting depth. As the weather gets cooler, it is not necessary to double-cut, because the grass is hardly growing. Our move upward in cutting height varies a little each year, but generally follows these guidelines: August — .125", September 20 — .135", October 20 — .157", November 20 — .190", December 20 through February — .220". You must remember that the more dormant bermuda greens get, the faster they get. We probably cut higher than other courses south of us, but we need the winter protection. The green speeds are still high (11-13 feet) when the greens become fully dormant."

## SPRING DEAD SPOT PREVENTION

According to plant pathologists, all of the ultradwarf bermudagrasses are susceptible to spring dead spot. Treatment is made in late summer or early fall on golf courses with a history of spring dead spot or on those golf courses where a spring dead spot infection on putting greens will not be tolerated. Rubigan remains the most popular product to use for prevention of spring dead spot. With a no-overseeding program, timing of application is much easier because there is no need to worry about interference with seeding.

## FERTILITY

With no overseeding, fall fertility is based upon the needs of the ultradwarf bermudagrass. Early September is a time to give the greens one last boost of nitrogen to provide the necessary energy for carbohydrate storage as the plant begins to harden off in the fall. A little extra nitrogen can also stimulate the growth necessary to move into higher mowing heights. As temperatures moderate in September and October, additional potassium applications are common. Iron and manganese applications can be helpful throughout the fall to maintain color. As always, allow soil test reports and your specific conditions to guide your fertility program.



## PLANT GROWTH REGULATORS (PGRs)

The PGR Primo is a staple in many ultradwarf bermudagrass putting green programs to reduce clipping production, provide a tighter surface, and maintain desired green speeds longer throughout the day. Most golf courses stop applying Primo after September 1. This is particularly important for those courses making a Rubigan application, as Rubigan has growth-regulating properties, too.

## TOPDRESSING

Surface sand topdressing is a necessary and effective way to dilute the accumulation of organic matter. As the turfgrass growth slows during the fall, the quantity of sand that can be incorporated readily into the canopy diminishes.

Covering ultradwarf bermudagrass putting greens when conditions warrant is vital to protect against winter injury.

However, we wondered how superintendents actually manage topdressing throughout the fall. The approaches below are quite informative. Note how frequency and the date of the last application changes as the location moves north.

Ron Wright, The Country Club of Mobile: “I don’t topdress on Monday if I can still see sand from the previous application. But I continue to topdress the greens while they are dormant. It’s a perfect time since you aren’t mowing. It just takes one of those wonderful Mobile downpours to drive the sand into the rootzone.”

Tim Etheridge, Dothan Country Club: “We try to match the amount of topdressing sand we put down to the growth rate of the greens. We normally are not topdressing much after mid-October, depending on the weather.”

Rodney Lingle, Memphis Country Club: “We go from topdressing once a week during the summer, to every other week during September, and about once during the month of October. After October, we do not usually topdress again until the grass greens up in early March.”

## **WINTER COLOR: PUTTING ON A COAT OF PAINT**

The appearance of a golf course is part of the golf experience. While there is nothing wrong with having off-color or dormant ultradwarf putting greens, many golf courses use specialized turfgrass paints to provide green color at a reasonable cost. Painting techniques have become so good that, often, golfers visiting a course with painted greens will mistake the painted surface with actively growing grass.

Painting is an art, and many innovative methods to paint a putting green exist. In the field, we rarely see the same method used twice. Following the tips below is a good start, but feel free to modify these methods based upon your own circumstances.

## **TIMING**

There are two schools of thought regarding the time of year to begin a painting program. Some golf course superintendents prefer to begin painting once the greens begin to go off color in mid to late fall. There is still some active growth occurring, but not much. Others prefer to wait until the putting greens are completely dormant before painting.

The primary difference between the two approaches is the number of times the greens will require painting. If the greens are actively growing, painted leaves will be mowed off over time and repainting will be needed. The rate at which this occurs depends on the growth rate of the grass. If the greens are not painted until they are completely dormant, the paint should last 8-12 weeks or until the grass breaks dormancy. Most golf courses following this approach can expect to paint one or two times per year at the most.

## **EQUIPMENT NEEDED**

The most important component in the painting program is the sprayer. Turfgrass paint and water is far more viscous than herbicide, fungicide, or nutrient solutions. Some pumps are better able to handle paints than others. From the experience of superintendents, it seems piston or roller-type pumps seem to work best. Even with these types of pumps, the amount of wear on working parts of the pump will increase. The manufacturer of the sprayer pump is a good resource to discuss the suitability of the pump for painting.

Once a suitable sprayer has been obtained, a decision must be made whether to use a boom or a gun to apply the paint. The advantage of the boom is the speed and ease with which the paint is applied. No matter how well calibrated the nozzles are, though, there is going to be some streaking. Small “triangles” will be created on the collars or surrounds as the sprayer moves on and off the green.

Hand guns have the potential to apply the paint in a more uniform pattern with no “triangles” on the collars or surrounds. A hand gun allows the applicator to touch up light spots on the green immediately after painting. The quality of the painting is only as good as the talent or artistry of the applicator. Superintendents using hand guns advise that most applicators do a great job after an opportunity to practice on a portion of the nursery or practice putting green.

## **PROTECTING AGAINST WINTER INJURY**

There are no ifs, ands, or buts about it. Cold temperatures can damage bermudagrass. History has shown that unprotected bermudagrass putting greens often are the first part of an all-bermudagrass golf course to succumb in cold



weather. Fortunately, a wide variety of turf covers that can dramatically decrease the chance for winter injury are available. Although there are many factors associated with winter injury, golf courses with ultradwarf putting greens in the transition zone need to have covers and must deploy them when conditions warrant.

The climate and temperature variation in the range of adaptation of ultradwarf bermudagrasses in the Southeast ranges from northwest Tennessee to the Florida Keys. If a location is one in which temperatures commonly fall below 25 degrees during the winter months, covers are not only recommended, they are considered mandatory. We have found that, in most years, the cover/no cover line extends from Jackson, Miss., to Montgomery, Ala., to Macon, Ga., and through southern South Carolina.

For courses that have covers, another question arises: "When should we cover our greens?" Dr. Mike Goatley conducted multiple research projects at Mississippi State University over the years regarding covers, and his general recommendation is to cover the greens any time the temperatures are predicted to fall below 25 degrees F. This is great advice to follow, and we have not seen any adverse effects when following it. Because some types of covers can be cumbersome to work with, these recommendations are stretched at times. For example, assume today's high is 57, tonight's predicted low is 24, and tomorrow's high is forecast for 62. Covers probably are not needed. Likewise, let's say tonight's low is scheduled for 26, tomorrow's high is going to be 39, and then the next night is forecast for 22 with a cooling trend to follow. It's probably a good idea to cover right away. The use of covers should be viewed as insurance, not a nuisance. If there is ever any doubt about whether to cover or not, go ahead and cover the greens.

A second use of covers is to protect an ultradwarf from premature dormancy by an early fall frost or protect a recently greened-up ultradwarf from a late spring frost. Both of these strategies can be used by superintendents to manipulate the growing environment and flatten out wide fluctuations in growth on the shoulders of the growing season.

An interesting fact from Dr. Mike Goatley's research on covers is that the type of cover material is not critical for winter injury protection. In other words, covers of all types of material per-



formed equally as well at protecting bermudagrass putting greens from winter injury. Therefore, courses purchasing covers are advised to look at the weight and durability of the covers. Covers that are lighter weight and easier to install/uninstall are going to save labor hours and decrease the amount of time needed to cover/uncover greens.

## WINTER MAINTENANCE ISSUES

Warm-season turfgrasses are not growing during the winter months in many locations, but golfers still enjoy playing golf, weather permitting. It is important to groom putting surfaces and provide

Instant overseeding — turfgrass paint is mixed with water in a sprayer to produce excellent color.





Hiding blemishes created by old hole locations is a challenge in late winter. Target hole liners are used in the winter to protect the edges of the hole so that the time between changing holes can be increased.

favorable playing conditions throughout the winter. Winter maintenance issues are reviewed below.

### GREEN SPEED: WHEN FAST IS A PROBLEM

A familiar refrain heard from golfers throughout the region is, “We want faster green speeds.” In the case of ultradwarf bermudagrass putting greens in the winter, be careful what you ask for. Preventing excessively fast speeds during the wintertime is an issue superintendents with non-overseeded ultradwarfs must manage for proactively. Developing such a program is not difficult, but it must be implemented before cold weather arrives. Nonetheless, sometimes superintendents are confronted with a situation during the winter when the green speeds are either above or below the desired range. Below are a few tips from superintendents on this issue.

Ron Wright, Country Club of Mobile: “Keep an eye on the long-range forecast. Let them slow

down a bit if you are expecting cold, windy conditions in the near future. Let member comments and the Stimpmeter dictate your program. We measure green speed every day here. If the speed drops below 9.5 feet, we will roll the greens the following day if they are dormant. This will usually bring the speed up to 10.5 for a few days, depending on weather. Mow only when you have to.”

Tim Etheridge, Dothan Country Club: “We mow the greens with walk mowers every day the weather permits. This mainly just rolls them since they are not growing, and it smoothes out scuff marks and picks up any small trash and debris that might be on them.”

Rodney Lingle, Memphis Country Club: “The only time we seem to have a problem with slow greens is in the fall when we raise our mowing height, especially if the weather is abnormally warm for a week or so. If the greens slow down, we try to double-cut and roll to offset some of the slowness. I try to explain to

the members that the greens will speed up when the weather cools off again.”

Danny Malone, Berkeley Hall: “We will roll if we need to increase speed. When speeds get too fast, we have brushed with push brooms to try to slow them down.”

It is clear from the tips above that these superintendents pay attention to weather conditions and make adjustments as necessary. Therefore, it is not surprising that each of them has different frequencies of rolling and mowing during the winter months based upon weather conditions, which vary significantly by location.

## CHANGING HOLE LOCATIONS AND BALL MARKS

When the growth of the grass slows or stops and mowing/rolling frequency decreases, blemishes to the surface such as ball marks and old hole plugs decrease smoothness and become more prominent. Expect the lowest level of turfgrass quality on an ultradwarf putting green to occur during the last few weeks prior to spring greenup.

Change holes as infrequently as possible based upon levels of play, the amount of cupping area, and deterioration of the hole. This typically equates to two to four times per week for most golf courses with ultradwarf putting greens in late winter. Some golf courses have used white hole target liners to preserve the edges of the hole and extend the time between changing holes.

Ball marks are an indication that people are playing the golf course, and this is good for business at every club. If ball marks become a distraction or an impediment to smoothness, topdressing and rolling are recommended. Many clubs have achieved positive results by topdressing individual ball marks with green sand. Although this practice is labor intensive, it will improve smoothness and appearance. Using a roller or running mowers over the putting green with the reels turned off are other excellent ways to improve smoothness.

## WINTER WEEDS

Another program that becomes much simpler is winter weed control on non-overseeded ultradwarf putting greens. There are several new products, particularly in the sulfonyl urea class of herbicides, that provide excellent control of winter grassy weeds such as *Poa annua* or any

winter broadleaf weeds. Use of non-selective herbicides is not recommended. Always apply herbicides according to the label.

## WINTER IRRIGATION

An overlooked part of a winter management program is soil moisture. It is critical to maintain adequate soil moisture in ultradwarf bermudagrass putting greens, particularly those grown on high-sand-content rootzones. Although the plant may not be actively growing, desiccation or extreme drying is possible if rainfall is lacking and the putting greens are not watered.

One characteristic of most ultradwarf putting greens is that a majority of the growing or recovery points are near the surface. Should the top inch or so become dried out, two things can happen and both are difficult to see. First, the plant is under drought stress and there will be few visual symptoms present on a dormant or off-color ultradwarf bermudagrass putting green. Second, the temperature in the top inch will drop much faster toward the ambient temperature in a dried-out mat layer. This could prove lethal on cold nights.

There are no hard and fast rules regarding watering frequency and quantity. Check moisture first on slopes or mounds that are prone to drying out in the warmer months. Superintendents are advised to monitor soil moisture and add water as needed.

## CONCLUSION

The real winners with ultradwarf putting greens are golfers. Golf is a 12-month game in the transition zone, weather permitting. Superintendents have taken the unique physical characteristics of these grasses and have developed a style of management that provides “in season” golf conditions in the cooler months of the year. Great grasses plus appropriate management makes a winning combination.

## REFERENCES

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