



# Going for the Gold with the Ultradwarf Bermudagrasses

This is part three of an occasional series on bermudagrass putting greens and focuses on surface management and minimizing grain.

BY JOHN H. FOY

To compensate for a shallower depth, double verticutting and going over the same area in opposite directions is a common grain and surface management strategy with the ultradwarfs.

The first full set of ultradwarf (Champion) bermudagrass putting greens were planted in Florida in the summer of 1997. The following year, Floradwarf and TifEagle became available and were used on a few courses in Florida and the Southeast. Also in 1998, an On-Site Evaluation of Bermudagrass for Putting Greens project was initiated and sponsored by the National Turfgrass Evaluation Program, USGA, and Golf Course Superintendents Association of America. Subsequently, there has been a steady increase in the use of the ultradwarfs, and today Champion, Mini-Verde, and TifEagle have replaced Tifdwarf as the standard for warm-season turfgrass putting greens.

Although the ultradwarfs are bermudagrasses and there was some preliminary work done as far as their management requirements, as we all know, fine tuning of best management practices occurs in the field over a period of several years. With the ultradwarfs having been in use for ten years, a sound information base now exists for producing consistently top-quality putting green conditioning.

It should be reiterated that every golf course is unique and “there are a lot of ways to skin a cat.” Having visited numerous facilities throughout Florida and having discussed ultradwarf putting green management programs with superintendents from the Carolinas across the Southeast to Texas, there are a number of common denominators. The following is a review of the key surface management practices being used to produce top-quality ultradwarf putting greens.

## HEIGHT OF CUT IS NOT THE TOTAL ANSWER

Along with a finer leaf blade and increased shoot density, the ability to tolerate a height of cut of 0.125 inch was one of the primary criteria used in selection of the ultradwarf cultivars. As to be expected, however, heights of cut have been taken lower and lower in an effort to produce very fast putting green speeds. However, just because it can be done does not mean that maintaining the lowest height of cut possible is necessary or even best for providing top-quality

putting green conditioning. Time and again, university research and field experiences have shown that there is a point of diminishing return where no additional increase in speeds is achieved with further reductions in height of cut. It should also be reiterated that the continual practice of maintaining excessively low heights of cut negatively impacts general turf health and increases its susceptibility to disease and nematode pest problems.

Thus, today, an effective height of cut in the range of 0.105 to 0.125 inch is being routinely practiced at the vast majority of facilities where top-quality ultradwarf putting greens are being maintained. Along with being able to provide medium fast to fast putting speeds, the turf has improved disease and environmental stress tolerance. However, during extended periods of inclement weather and in the fall when preparing for the winter, slightly elevated heights of cut need to be maintained.

The higher shoot density of the ultradwarfs compared to Tifdwarf is a positive characteristic as far as smoothness of ball roll is concerned. Yet, this also is something of a negative when it comes to speed because of the additional resistance or friction created. To compensate and maintain fast to very fast putting speeds, light-weight rolling or double cutting are considered necessary and routine practices. These practices typically are employed three or four times per week, but at some facilities they are done on a more frequent basis. Generally, when sustained turf growth is occurring, this is not a problem, but additional care needs to be exercised to prevent excessive wear and damage to the perimeters and collars of greens.

Having sand particles integrated into the turf canopy also aids in reducing ball-to-leaf-blade contact, which in turn helps maintain faster speeds and a smoother, truer ball roll. Thus, frequent but very light sand topdressing is another necessary and routine ultradwarf surface management practice. Throughout the growing season, lightly topdressing on a 7- to 14-day interval is the standard regime. It should further be pointed out that regular sand topdressing plays a dual role and is needed for dilution of thatch and organic matter accumulation in the upper rootzone. While more frequent topdressing than ever before is being practiced, it is also very important to make sure that a sufficient quantity of sand is being applied annually to achieve true dilution. Several factors, such as length of the growing season and nitrogen fertilization rates, need to be considered, but applying between 30 to 50 cu. ft. of sand per 1,000 sq. ft. annually would be suggested as a target.

The turfgrass growth regulator Primo (trinexapac-ethyl) is a very beneficial putting surface management tool with Tifdwarf bermudagrass greens. It was initially questioned, however, if there would be any real benefit to treating ultradwarf greens, given the fact that a very dense turf canopy already existed. Yet, it was quickly found that with suppressing vertical shoot growth, more consistent putting speeds throughout the day and from one day to the next, along with slightly faster speeds, are achieved with adherence to a regular treatment program. This has become a standard, and it should be pointed out that at a lot of courses in Central and South Florida, weekly treatments on

The tools of the trade must be available to the golf course superintendent to maintain ultradwarf bermudagrasses. From left: a triplex unit with carbide-tipped blades for verticutting, rotary spreader for applying dried bagged sand, putting green mower with groomer attachment, and another triplex with brushes.





Close-center core aeration followed by removal of the debris and incorporating topdressing sand to backfill the holes is very unpopular with golfers and the maintenance staff. Yet this regime is absolutely necessary and must be conducted at least two to three times per year for controlling organic matter accumulation and compaction so that top-quality surface conditions can be provided the majority of the time.

virtually a year-round basis are being performed. The only time they are stopped is just prior to the arrival of a cold front and when nighttime temperatures of 50 degrees or colder are expected.

### GRAIN CONTROL AND SURFACE GROOMING

Due to its stoloniferous growth habit, controlling grain is a major management concern with bermudagrass greens. There is a strong argument today that with intensively managed, closely cut ultradwarf greens, the influence of grain on ball roll has been minimized to the point that this is not a concern for the vast majority of average to high-handicap golfers. Yet, very distinctive grain patterns do occur and are accentuated by more frequent rolling and mowing regimes. Since golf, and especially putting, is highly perceptual based, it is imperative to always try to keep grain to a minimum.

Along with promoting a dense, upright shoot growth character to minimize grain, aggressive



Topdressing with dry sand helps incorporate the material into the dense turf canopy of the ultradwarf bermudagrasses. Sand storage silos are becoming a more common sight at Florida golf courses with ultradwarf greens.

verticutting of Tifdwarf putting surfaces has been a standard practice. This also aids in controlling thatch and organic matter accumulation. Verticutting in this manner every two or three weeks is effective, yet it also results in significant mechanical stress and damage. It has been a standard recommendation to severely verticut Tifdwarf greens with walk-behind units in the early summer and in conjunction with core aeration replications. It was determined fairly quickly, however, that the ultradwarf cultivars do not tolerate severe verticutting and recover very slowly from this abusive cultural regime.

Regular verticutting of ultradwarf putting surfaces, at least every couple of weeks during the growing season, is being conducted at most facilities. However, along with using the new type of blade options that cut rather than rip through the turf canopy, they are adjusted to operate at no more than 0.0625 to 0.125 of an inch below the effective height of cut. The basic philosophy of routine verticutting of ultradwarf putting surfaces has changed from aggressively removing leaf surface area, thatch, and surface organic matter accumulation, to only thinning the turf canopy and grooming an upright shoot growth habit for grain control.

With a shallower depth of penetration with regular verticutting, it has been found that a pronounced difference in the effectiveness of the process occurs when working into the grain compared to going down grain. To compensate for this grain effect, *double* verticutting and going across the putting surface in one direction and then turning around and coming back down the same pass in the opposite direction is needed. As with routine mowing, the direction of attack with verticutting should be changed with each replication. Circle verticutting is another variation being employed at a few courses in South Florida because it also varies the direction of attack into the grain pattern. While adherence to a regular verticutting schedule throughout the growing season is needed, this also needs to be closely monitored and adjustments made to make sure that excessive thinning, mechanical damage, and stress are not exerted on the turf. Furthermore, if more aggressive verticutting is required to alleviate a severe grain problem, this should be restricted to the late spring to early summer when maximum sustained growth is occurring.

In addition to regular verticutting, putting green mower-mounted brushes or groomer



attachments are important management tools. Constantly promoting an upright shoot growth character helps keep grain in check, and with minimizing ball-to-leaf contact, a smoother, truer ball roll and faster putting speeds are achieved. Use of brush or groomer attachments in conjunction with routine mowing is typically performed three to six times per week and in between the routine verticutting replications.

## SUMMARY

Although not discussed in this review, very careful and judicious nitrogen fertilization and irrigation are common denominators at the courses where top-quality ultradwarf putting greens are being maintained. Thus, in many respects, ultradwarf and bentgrass putting greens are managed very similarly today. There is no argument that the ultradwarfs require more intensive and careful management compared to what works successfully with Tifdwarf bermudagrass greens. This has been raised as a concern by some because of the additional commitment of time and resources required. However, on the other hand, if top-quality putting green conditioning is desired or expected, this certainly can be achieved with the ultradwarfs, and the results justify the efforts.

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To date, the development of off-type bermudagrass areas in ultradwarf greens has not been a problem, but encroachment of fairway and rough bermudagrass does still occur and must be addressed at some point.