No Till in No Time

The advantages of ultradwarf bermudagrass putting greens are unlocked with a minimally invasive and effective conversion method.

BY CHRIS HARTWIGER

Doing your homework is vital to success in any subject. A class on the no-till method of ultradwarf bermudagrass putting green conversion is now open for registration. Any takers? In this class, students will learn what this term means, what types of golf courses are attempting it, which courses are good candidates, and what it takes to be successful. Last, but not least, any class would be incomplete without homework assignments, and this article will provide anyone interested in the no-till method with plenty.

WHAT IS NO-TILL PLANTING?

Golf course maintenance is under constant pressure to evolve. What is considered to be the standard today may be outdated by next year and proclaimed to be obsolete in 20 years. Nowhere is the force of change more apparent than on putting greens. There is a trend going on in the Southeast right now: removal of creeping bentgrass or Tifdwarf bermudagrass and replacement with an ultradwarf bermudagrass.

A technique called no-till or no-till planting is the method used to replace these grasses. Currently, the most popular ultradwarf bermudagrasses (Champion, MiniVerde, TifEagle) offer no-till planting. Although each producer will have its own protocol and specifications for no-till planting, the term *no-till planting* can be described as the replacement of the turfgrass on a putting green with minimal disruption to the underlying rootzone. No-till planting is popular because it lowers costs and requires less downtime compared to complete reconstruction.

THE NO-TILL PROCESS

There is more than one way to no-till plant a putting green, and several variations have been used in the region. Outlined below are factors that can determine how the no-till conversion is carried out.



Sprig preparation will vary among producers.



Kill Existing Turfgrass — Most no-till conversions involve killing the existing turfgrass, although some courses have no-till planted directly into the existing stand. Roundup is the most widely used product to kill the existing turfgrass.

Aggressive Aeration — The period between killing the existing turf and planting an ultradwarf is an ideal time to aggressively aerate, dethatch, and topdress putting greens. The extent to which golf courses complete these processes varies.

Turfgrass Removal — Some golf courses with unusually high levels of organic matter in the upper rootzone use conversion as an opportunity to remove this layer and replace it with a suitable rootzone mix.

Fumigation — To fumigate or not fumigate is a dilemma. If nematodes are present, most courses will fumigate. Higher-end clubs with bermudagrass putting greens are more likely to fumigate to minimize chances of the older bermudagrass contaminating the new ultradwarf putting greens. Courses with fewer resources or clubs with bentgrass putting greens are less likely to fumigate.

WHO IS USING THE NO-TILL METHOD?

At the present time, no-till conversions are being embraced by all market segments from the entry level to the high end. However, each market segment is using the no-till process for different reasons, and success stories have been written at all levels.

Those in the mid- to low-level market are looking for an improvement over their current circumstances. They are not seeking perfection. They believe providing better putting greens will allow them to attract more members or charge higher green fees. They understand that no-till planting only replaces the grass and will not wipe away any other problems affecting the putting greens. These clubs have performed the cost-benefit analysis and have determined that, given the costs of change, the anticipated improvements are worth the cost. They also understand that switching turfgrass varieties does not guarantee that other existing problems will disappear. These golf courses desire something better.

Those in the upper-end market are using no-till for different reasons. These are golf courses that generally have well-built greens, few problems with site conditions, and plenty of funds for state-of-the-art maintenance progams. They have gotten the most out of their current turfgrass variety and have pushed it to the edge of failure, yet those who play the course continue to ask for more. The upper-end courses believe that an ultradwarf bermudagrass will offer an improved level of performance. A good example



Boxes of sprigs are loaded onto refrigerated trucks at this producer's field.

The surface is prepared with minimal disruption. Sprigs are ready to be planted.



The sprigs are planted by hand to ensure excellent coverage.

is the high-end private club in the Southeast. These clubs are using the no-till method to replace creeping bentgrass putting greens because those who play the course are seeking firmer, faster putting conditions throughout the summer.

IS YOUR COURSE A GOOD CANDIDATE FOR NO-TILL?

Setting expectation levels for putting greens is the first step in determining if a golf course is a good candidate for a no-till bermudagrass conversion. Obviously, this assumes the golf course in question is in a region where an ultradwarf bermudagrass can be grown and managed successfully. Below are a series of questions to consider.

Is is possible to grown healthy turfgrass on putting greens if this was the only goal for the putting green maintenance program? Many golf courses with Tifdwarf or creeping bentgrass putting greens suffer in terms of quality because too much is asked of the grass in terms of playability. This places the grass under stress, causing turf health to decline and playability to suffer. All the ultradwarfs appear to be well adapted to heavier soils or soils with mature levels of organic matter in the upper rootzone.

Are sunlight levels adequate at all putting green locations to sustain an ultradwarf? Bermudagrass has the worst shade tolerance of any turfgrass used on golf courses in the world, and it has not earned the title without backing it up. If shade is limiting, grow-in will be slowed, thin turf will be a constant battle, and ultimately putting quality will be affected. Are there issues with internal and/or surface drainage? Internal drainage relates not only to how fast the water moves into the soil, but how long the soil stays saturated. Chronically wet soils are not desirable. These are common in depressions with no surface drainage, areas with shallow mix, in rootzones with a clay layer that limits drainage, and on putting greens with no drainage pipe to carry water out of the rootzone.

Sometimes poor internal drainage can be aided by excellent surface drainage. If slopes carry water off a green rapidly, poor internal drainage may not be so problematic. If water flows from surrounds onto putting greens, even average to above-average internal drainage may not be enough to avoid soggy surface conditions.

Will there be adequate time, staff, and equipment to meet expectations upon completion of the no-till conversion? The time/staff/equipment matrix often limits what can be done to the putting surface. When clubs expect significant improvements, make sure these pieces are in place. Remember that a beat-up 20-year-old mower is still a 20year-old mower regardless of the grass it mows. If it did not cut well on the old greens, it will not be any better on an ultradwarf.

Will increases in green speed exceed the architectural speed limit? This refers to slope in the putting greens. If an ultradwarf is desired because of the ability to increase green speed without unduly risking turf health, make sure all the greens are playable and have enough hole locations to handle the rounds of golf played.

Are there significant pest issues that impact turfgrass quality? Of all the pests that affect a putting

green, few are as frustrating or as hard to control as nematodes. None of the ultradwarf varieties has documented improved tolerance to nematodes, so this pest will still be present after notill unless the rootzone is fumigated.

Does the club desire architectural changes to the putting greens? Many putting green renovation projects seek to not only improve the infrastructure, but also address strategic elements of the golf course by changing the design of the greens. Courses seeking different architecture are not good candidates for no-till planting, as this procedure is intended to produce minimal disturbance to the surface. Removing features such as steep slopes, ridges, etc., is not recommended with the no-till procedure because it

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can result in variable mix depth and the need to expand the renovation out into the surrounds and approaches to create the desired tie-in. The one exception is on golf courses seeking to recapture parts of putting greens lost due to encroachment.

Is cost savings in maintenance the main goal for the conversion? Cost savings should not be the primary goal for a no-till conversion. On courses with bentgrass considering a no-till conversion, it is likely that there will be less money spent on items such as hand watering, electricity for fans, and fungicide applications, but there may be other areas with higher costs. Examples include the need to hand water steep slopes because of ultradwarf density, more scheduled double

Adequate irrigation is a must during grow-in of a no-till conversion. mowings, more scheduled rollings, and more time spent on mower sharpening. Great things are possible with a no-till conversion, but just don't bet the ranch on cost savings.

WHAT IT TAKES TO BE SUCCESSFUL

A successful no-till putting green renovation begins with planting an ultradwarf bermudagrass and establishing it over a period of six to ten weeks. It is complete when a product that



Thriving nine years after no-till conversion, this putting green continues to meet or exceed expectations each year. meets expectations is produced. Before attempting a no-till renovation, review the factors below and make sure that once the grass is replaced, these components are in place to meet or exceed expectations.

Expertise and Desire of Staff — The motivation to succeed is of paramount importance. Superintendent knowhow is more important than budget. Superintendents who enjoy challenges and are excited about learning a new maintenance protocol will achieve better results.

Time/Budget/ Equipment Matrix — There is a common belief that ultradwarf

varieties are maintenance-intensive grasses. There is an element of truth to this saying, but it needs clarification. Keeping an ultradwarf alive is not maintenance intensive, but maintenance intensity does increase as expectations for playability increase. Much, if not all, of this higher maintenance intensity is scheduled maintenance in the form of keeping sharp mowers, more frequent mowing, reel and bedknife maintenance after topdressing, the time to schedule light vertical mowing/grooming, etc. This type of maintenance intensity, which is focused on plant health and summer survival.

HOMEWORK

Selecting the turfgrass variety requires homework. There are differences among the major ultradwarf producers in no-till planting experience, techniques, and grow-in. Every golf course is advised to perform appropriate due diligence before selecting a variety. This homework includes the following:

INTERVIEW AND/OR VISIT THE PRODUCER

Ask the producer the following questions: How many no-till jobs have you completed? What is the average grow-in time? Where are the sprigs grown? Is a nematode test available for the fields where the sprigs will be harvested? How are they harvested? How are they transported? What is done to prevent excessive sprig heating? How are the sprigs planted? How long will the grow-in take?

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VISIT OTHER COURSES

Visit a minimum of three courses for each notill variety your golf course is considering. Try to schedule one of the visits during grow-in. Make sure the managers of the courses visited have expectations and budgets similar to yours. Ask about the conversion process. What went well? How could the process have been better? Ask the superintendent and others if they are satisfied with the no-till conversion.

CONCLUSION

No-till conversions from creeping bentgrass or Tifdwarf to an ultradwarf bermudagrass variety have been and will continue to be successful. Although no-till may be a quick way to improve putting greens, making a quick decision may not result in the best decision. Replacing the grass on putting greens is a decision that will affect golfing conditions for years, and therefore it requires some work before an informed decision can be made. For those seeking to earn an "A" in no-till, pay attention in class, do your homework, and ace the test at your golf course.

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