

Poa/Bent Nurseries — A Perfect Match

Aerification cores can be used to build a sod nursery to match mature Poa annua greens.

by PATRICK J. GROSS



A nursery established from aerification cores is a useful method to provide a perfect match with the existing turf. After the nursery site has been prepared, cores are collected during the spring or fall aerification for spreading on the nursery site.



Aerification cores should be collected and spread on the nursery as soon as possible to prevent desiccation of the cores.

PUTTING GREEN nurseries are an afterthought at most courses. The old topdressing pile is spread out near the shop, sprinklers are added, and leftover seed or sod is planted. It may be mowed once in a while and might be fertilized with whatever is left in the spreader. The nursery survives in relative obscurity until a hydraulic oil leak or vandalism damages one of the mature *Poa annua* greens and an emergency repair is needed. Only then is it discovered that the nursery turf is unsuitable and the only option is to purchase creeping bentgrass sod.

Creeping bentgrass has many positive attributes, but the texture and playing quality do not match a mature *Poa annua* green. A bentgrass sod patch is not only visually conspicuous, but often causes long-term problems with soil layering, inconsistent playing quality and the gradual patchy invasion of *Poa annua*. Since so many mature golf courses have *Poa annua* greens, it makes sense to have a nursery with the same grass to maintain consistent and uniform playing conditions whenever repairs are necessary.

Until recently, it was not possible to purchase *Poa annua* seed, and the only way to establish a nursery was to seed creeping bentgrass and encourage the rapid encroachment of *Poa annua*. This was a long, slow process as annual biotypes gradually gave way to perennial biotypes that were more representative of mature *Poa annua* greens. A successful way to speed the process and provide a perfect match with the existing turf is to build a nursery using aerification cores from the greens.

Planning

Timing and preparation of the site are more critical when using aerification cores to establish a nursery because the cores need to be spread as soon as possible to avoid desiccation. It is best to schedule your aerification date in the spring or fall and then plan backward the appropriate number of weeks to give yourself enough time for preparation of the nursery site and root zone.

Select a site for the nursery that provides good sunlight exposure and air movement throughout the year. A location next to the maintenance facility is ideal for convenience of maintenance and management. There must be access to a water supply and an irrigation field satellite. In general, the nursery should be the size of the two largest greens on the course, or

10,000 to 15,000 sq. ft. The nursery site should be slightly elevated to allow for good surface drainage.

To insure soil compatibility, the root zone should match whatever material is found in the top four inches of the greens. For most courses, it is recommended to use the current putting green topdressing material. The same advice applies to native soil greens — use the same soil or amended soil mix to avoid layering. It is always a good idea to have the sand or soil tested along with any other construction materials. Submit a core sample from a representative green along with a sample of the sand or soil to a physical soil testing laboratory for a sieve analysis. Incorporating peat moss or other amendments into the root zone mix should not be necessary since the aerification cores will provide adequate organic matter.

Next, consider from which greens to harvest cores. Choose the best planting material available and avoid transferring any pest problems. Generally, select greens with a high population of perennial biotypes of *Poa annua* that seem to perform well throughout the year. Avoid greens with a history of heavy weed invasion, chronic disease problems, bermudagrass encroachment, or nematode infestation.

Construction

Although there are many ways to save money when building a green or a nursery, it is best to follow sound



A mechanical topdresser is used to spread aerification cores evenly on the surface of the nursery.

construction procedures and avoid shortcuts. Keep in mind that cutting corners leads to inferior turf quality, and it does no good to replace dead grass on your greens with dead grass from the nursery. For long-term performance, construction of the nursery should proceed just like a green on the golf course. Plan the subgrade so that the finish grade of the nursery will be about 10 in. to 12 in. higher than the surrounding area. The subgrade should have a gradual slope of 2% to 3% and be thoroughly compacted to avoid soil settling. Trench and install a network of 4-in. diameter subsurface drain pipes at 10-ft. to 15-ft. intervals and backfill

with gravel or crushed stone to create a 4-in. gravel blanket. Next, place the intermediate sand layer, if necessary, according to laboratory recommendations, and then a 12-in. layer of root zone material. Install irrigation and connect the control wires to a nearby field satellite. Lastly, irrigate and compact the root zone to provide a firm surface.

While the above construction method is ideal, there are other options for building the nursery if budget constraints are a limiting factor. One option is to simply build a smaller nursery. Another viable method is to grade the nursery site with a 2% to 3% fall and place 8 in. to 12 in. of a compatible root zone material on the site. Maintain a uniform depth of mix throughout the nursery, then compact and finish grade the top for good surface drainage.

Fumigation of the nursery should be considered if heavy weed encroachment was evident prior to site development or if there is a chance of bermudagrass or kikuyugrass contamination of the mix during construction.

Planting and Establishment

A preplant fertilizer should be incorporated into the top 4 to 6 inches of the root zone and the surface smoothed and firmed for planting. As a general guideline, incorporate a natural organic nitrogen source into the root zone prior to planting to provide approximately 2 lbs. nitrogen per 1,000 sq. ft. A starter fertilizer (such as 6-20-20) should be applied at seeding to supply approximately 0.5 lb. nitrogen and 2 lbs. phosphorus and potassium per 1,000 sq. ft.



A mechanical bunker rake or water-filled roller can be used to press the cores and seed into the surface of the nursery for good soil contact.

Next, harvest and spread the cores. Any size aerification cores will work, but $\frac{3}{8}$ in. to $\frac{1}{2}$ in. diameter cores seem to be the most successful. The cores should be collected and brought to the nursery area and spread with a top-dresser to provide an even distribution of cores on the surface. Spreading the cores in two directions (two cores deep) is recommended. In general, cores collected from 110,000 sq. ft. of total putting surface will provide enough material for a 9,000 to 10,000 sq. ft. nursery. If it is not possible to collect enough cores to plant the entire nursery, you may want to establish half the nursery in the spring and the remaining portion in the fall. Another option is to shred the cores prior to planting to stretch out the amount of available planting material.

To improve sod strength, creeping bentgrass seed should be spread over the cores at the rate of 1-2 lbs./1,000 sq. ft. The cores and seed should be rolled into the surface with a water-filled roller or the tires of a mechanical bunker rake for good contact with the root zone mix.

Frequent irrigation during the establishment period is critical. Four or more light water applications should be made throughout the day to keep the cores and seed moist. Germination and growth are normally evident within one week, at which time irrigation can be gradually reduced. The surface should be rolled with a water-filled roller, water injection aerifier, or putting green roller approximately one to two weeks after planting to smooth the surface in preparation for mowing. Mowing can begin at $\frac{1}{4}$ in. within three to four weeks, along with light and frequent applications of sand top-dressing to further smooth the surface. Once mowing begins, continue to fertilize the nursery weekly to sustain healthy growth until the turf is fully established. With favorable growing conditions, you can expect to have good nursery turf within 10 to 12 weeks.

Other Benefits of a Poa/Bent Nursery

While it is reassuring to have a compatible source of putting green sod

should something go wrong, there are other benefits of having a nursery. The nursery is the perfect site to test new products and evaluate new equipment to use on the greens. New employees can receive valuable training and practice using various equipment on the nursery so that mistakes are kept to a minimum on the course.

Damage to a putting green is inevitable, but it is not necessary to live with the damage or suffer the inconsistency of using a different sod for repairing a green. As long as golfers place a high priority on putting green consistency and uniformity, there will be a need for a suitable nursery to make prompt repairs. For mature *Poa annua* putting greens, a nursery established with aerification cores solves this problem and provides a perfect match with the existing turf.

PATRICK GROSS is the director of the Southwest Region of the Green Section, serving the states of California, Arizona, Nevada, Utah, and Colorado.



Like any new green, frequent irrigation during the day is critical for healthy establishment.