



Strategic areas vulnerable to erosion should be sodded as early as possible.

Golf Course Grow-In: What To Do After The Contractor Leaves

By Charles B. "Bud" White

Taking a new course to the point where the contractor is finished and grow-in begins is only the halfway mark.

Golf course construction is a multifaceted operation involving many people and much expertise. Transforming a piece of unused, undeveloped property into a golf course requires a tremendous amount of time, money and coordination. It's not easy, but with proper planning and execution it can be a greatly rewarding experience.

Taking a new course to the point where the contractor is finished and grow-in begins is only the halfway mark. During the second half of the project, it is up to the superintendent and his crew to turn the infant into a playable tract as quickly and economically as possible. It's a time filled with planning, anticipating and budgeting. And the more prepared you are to do those three things, the more successful the finished product will be.

Get Ready

In addition to the obvious concerns of watering, mowing, and fertilizing, growing in a golf course involves a multitude of other tasks that must be completed before the first golfer approaches the first tee.

The following list highlights what should be completed before the grow-in phase gets underway.

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- * Maintenance building completed and stocked.
- * Assistant superintendent, mechanic and crew hired.
- * Grow-in material and equipment ordered or on hand.
- * Realistic budgets established.
- * Soil tests completed and pre-plant amendments and fertilizers applied based on results.
- * Irrigation system pressurized and checked and procedures established for cleaning and flushing heads and supervising field clock operations.

From this list, the item that seems to pose the greatest challenge is the establishment of a realistic first-year budget. More often than not, there are omissions in the budget that become cash flow surprises during the grow-in phase.

Some of the most often overlooked first-year budget items are:

- * Additional erosion and sediment control.
- * Additional sod.
- * Additional drainage work.
- * Additional irrigation heads for unanticipated dry areas.
- * Additional fertilizer.
- * Clean-up of rough areas.

Careful budgeting the first year can eliminate financial surprises that may necessitate delaying the purchase of some other important item—such as equipment—until the following year.

Critical Water

Coordinating the amount of water and fertilizer applied to a developing golf course is very important—especially during the first eight to 10 weeks following seeding, sprigging and sodding. In the first two weeks, the course requires the heaviest and most frequent water applications. The objective is to keep the top half inch of the soil consistently wet to encourage seed germination or rooting of sprigs or sod. Unfortunately, the need for heavy irrigation during these critical weeks often causes erosion problems. Careful monitoring can eliminate runoff wherever possible, but erosion and sediment control measures are still likely to be necessary. Most easily done with silt fence, this type of control can also be accomplished with hay bales or mulch. In some instances, selectively sodding erosion areas is cost-effective and produces quality playing surfaces more rapidly.

Once the first two weeks are over, irrigation frequency can be reduced and the

young grass plants hardened for a maintenance-type irrigation schedule.

Fertility Programming

During the first two weeks following planting, it is also time to launch a well-planned and well-executed fertility program. One of the keys to a first fertilization is whether the course is dry enough to support equipment without sustaining significant tracking. This can be tough in light of the fact that this feeding generally corresponds with the time the young plants need the most water. Repairing tire ruts is not only no fun, but also labor intensive and therefore expensive.

One of the best ways of overcoming the potential problem of equipment on a too-wet course is the use of fertigation. Applying nutrients through the irrigation system allows for total control of fertility programs and permits feeding on an as-needed basis instead of having to wait for the course to dry. It is also a great labor-saver.

Most new golf course operations using fertigation can justify the cost during the grow-in phase alone because of the convenience and the control it offers. The grow-in phase can be handled almost exclusively with fertigation if adequate pre-plant applications were made.

It is not uncommon, especially when the young turf is sprigged bermudagrass, to fertilize every five to six days during the first few weeks. After four to six weeks the frequency is reduced. In extreme Southern conditions, one of pound nitrogen per week on sprigged areas is very common for the initial six to eight weeks to encourage the most rapid establishment.

Some feel this is excessive, overly expensive fertilization, but remember that it is laborious and expensive to fix erosion problems caused by slow turf development. The faster you establish the turf, the fewer the erosion problems. Increased fertilizer costs usually more than offset the reduction in

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Bunker sodded and ready for sand.

As turf establishment progresses, mowing frequency increases and fertilization and watering decrease.

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costs for filling, leveling and patching eroded areas.

Time to Mow

As the turf begins to mature, it is time to begin mowing. Once again, the course needs to be dry enough to accommodate equipment and, with mowing, there is no equipment-free solution like fertigation. As turf establishment progresses, mowing frequency increases and fertilization and watering decrease. These three areas must be coordinated to allow the plants to mature and harden and also to encourage deep rooting.

Mowing height should be low enough to encourage rapid and aggressive lateral growth, but not so low that the tender crown areas of the plants are damaged. The crown area is very susceptible to damage at this point. At this stage, the tendency is to mow too high. This can create spindly plants, inhibit lateral growth and affect overall turf density.

Let's Roll

Another area of concern during the first couple of weeks of grow-in is the sod on collars and the perimeters of bunkers and tees. To insure smooth transition in these areas, begin rolling within a week or two after sodding. The smoothing process is maximized if there is some, but not excessive, soil moisture (figure 3).

With collars, the rolling operation should extend onto the edge of the putting surface to create a smooth transition from seeded or sprigged putting surface to the sodded collar or green perimeter. The sod must be "keyed in" to make the transition between these two areas absolutely smooth. Rolling greatly enhances this process.

There's More

Once a comfortable routine of watering, fertilizing and mowing has been established, there are other important preparations on the path to opening day. The

following is a list of what needs to be done.

- * Maintain erosion and sediment control and keep catch basins clean.
- * Continue to monitor and reduce irrigation frequency to achieve a maintenance-type schedule.
- * Continue to monitor fertilization to keep the turf growing laterally, but maintain a balanced fertility program throughout the late grow-in stage.
- * Begin fixing and leveling problem wash areas as surrounding turf grows in.
- * Continue to roll greens, tees, collars, and tee shoulders as needed for firming and smoothness.
- * Begin topdressing tees, greens, and collars.

A common mistake often made during the grow-in phase is waiting too long to begin topdressing. Topdressing during grow-in encourages lateral growth and creates smoother playing surfaces. The most successful courses generally topdress six to eight times during the first year.

Dense Turf ... Now What?

Once a course has a strong, healthy, dense stand of turfgrass, it is time to shift gears and establish a more maintenance-oriented operation. By now, irrigation should be strictly on an as-needed basis. Deep, infrequent waterings are the key to deep rooting and maximizing the ability of the plant to harden off.

Plants must also be hardened off through proper fertilization. During the late stages of grow-in, it is a good idea to test phosphorus and potassium levels and establish an application plan for these nutrients to carry the turf through its first stress period. Also at this time you may want to make lime or sulphur applications to further adjust the soil pH.

Now that the course is almost ready to welcome its first golfers, you should set cutting heights to establish contour mowing patterns and quality playing conditions. If grow-in type of equipment is being used, now is the time to switch to normal maintenance mowers to promote a finer fairway cut.

However, prior to using a finer quality mower, it's a good idea to brush fairways with a three-point-hitch street sweeper brush to help pick up and windrow sticks or rocks remaining on the surface. This debris may not be damaging grow-in equipment, but it can definitely do harm to the more delicate, higher quality cutting units.



Superintendents must guard against erosion from adjacent property.

Once the turf is mature, all erosion and sediment control devices should be removed. This includes retrofits on catch basins. If necessary, now is the time to put additional sod in erosion areas and stake it in place. Once the turf around a site prone to erosion is established, it becomes much easier to grow grass in the erosion area itself.

Flush-outs and drainage systems for greens and bunkers should now be checked and buried below ground. And because the flushes will periodically need to be dug up and cleaned, they should be marked with some type of metal for simple detection with a metal detector. The easiest way to mark flushes is to run a self-tapping screw through the cap of the perforated tile and mount one or two heavy, flat washers to the cap with the screw. Flush-outs should also be marked on the irrigation as-built for positive location.

Set for Success

The construction and grow-in phase of golf course development is a multi-faceted and complex process requiring careful management and planning. The operations achieving the greatest degree of success in

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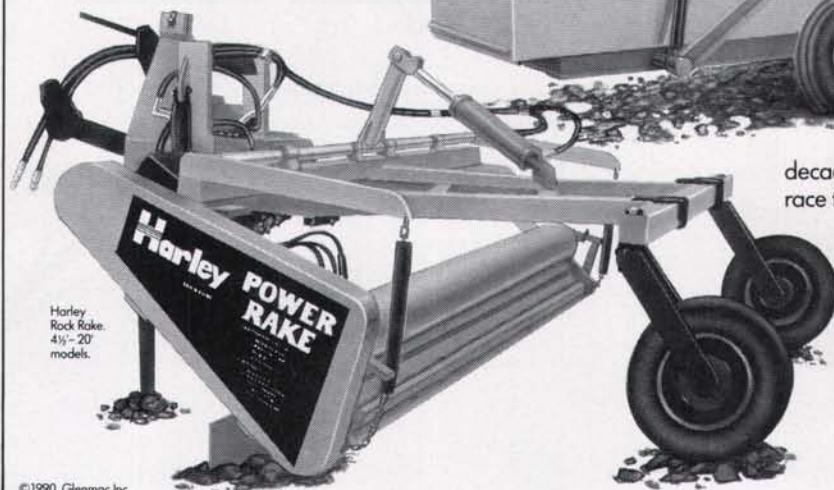
these phases are those with a qualified and organized turfgrass manager.

Golf course developers and turf professionals involved in their first grow-in are often surprised to learn that the golf course is only half built when the contractor leaves. Successful first-year grow-in operations set the tone for success. Learning what to expect after the contractor leaves is truly an education for all involved in golf course development.

Editor's Note: Charles B. "Bud" White is an independent turfgrass consultant headquartered in Watkinsville, GA. His company, Total Turf Service, Inc., specializes in providing technical and managerial assistance to golf courses and other sports turf facilities.

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