



Overseeding



Owen Field at the University of Oklahoma has a carpet of SR4300 perennial ryegrass overseeded on bermudagrass. The university switched to natural turf two years ago. Photo courtesy: Don Hatcher, University of Oklahoma.

Two side-by-side soccer fields provide a graphic display of untreated vs. fungicide-treated seed on overseeded bermudagrass. Photo courtesy: Gustafson, Inc.

Making the Transition

By Robert E. Reaves

When fall arrives in the South, overseeding bermudagrass becomes the predominant topic of discussion among sports turf managers. Overseeding may seem to be only a seasonal matter, but it actually involves a great deal of planning throughout the year. Overseeding too early or late in the fall may mean a poor cool-season turf on the athletic field. Bad timing at overseeding may also result in a poor transition back to bermudagrass in the late spring and early summer.

Factors to be considered before initiating an overseeding program include seed selection, seeding date, preparation of the seed bed, control of annual bluegrass and disease.

Seed Selection: Depending on budget, most athletic fields in the South are overseeded with perennial ryegrass. Today's perennial ryegrass varieties are stellar performers. Eric Nelson, director of research and product development at Medalist America in Albany, OR, does not recommend unimproved "common" varieties of any grasses for athletic turf. Nelson says, "Seed is the least expensive component needed for a successful athletic field. Choosing the right varieties and mixtures can make the difference between success and failure. There is nothing more frustrating and expensive than having to do a job twice, especially when time is short."

Thomas Koske, extension horticulturist at Louisiana State University in Baton Rouge, says, "Transition early or late in the spring will be based on the cultivar or blend selection. Baseball fields may choose a later transition. An example may be the need for a very green turf for a June baseball tournament or a green football field for graduation ceremonies. To lengthen an overseeding, you may wish to blend tall fescue with a heat- and drought-tolerant perennial ryegrass. Perennial ryegrass is a tough grass; it lasts through May at LSU."

A short transition period in the spring is desirable on football fields, since play on the field is limited during that time. Don Hatcher, athletic maintenance supervisor at the University of Oklahoma desires a perennial ryegrass with a short transition period. Hatcher intentionally selected a variety that does not tolerate heat. Unfortunately, this year's late spring and early summer was wetter and cooler than normal. This enabled the perennial ryegrass to linger through July, making it difficult for the bermudagrass to compete.

Seeding Date: General guidelines for selecting seeding dates come from a USDA Plant Hardiness Zone Map, plus soil and air temperatures. Turfgrass in zone ten should be overseeded between November 15 and December 15, zone nine between October 15 and November 15,

zone eight between October 1 and October 15, and zone seven between September 15 and October 1.

Burke McCarty, associate professor in the Department of Environmental Horticulture at the University of Florida in Gainesville, offers some advice on using temperatures for overseeding dates. "A general indicator of optimum overseeding time is when fall night temperatures consistently are within the 50-degree range," he explains. "Other timing indicators include overseeding when soil temperatures at a four-inch depth are in the middle 70s. Overseeding should be timed at least 20 to 30 days before the first expected killing frost."

Use of a fungicide-treated seed may prove especially beneficial where earlier overseeding must take place. One product for seed treatment is Apron™, manufactured by Gustafson Inc., of Plano, TX.

Preparing the Seedbed

Preparation of the seedbed for fall overseeding actually begins during the summer. "Coring, light topdressing and light vertical mowing during the summer will promote upright growth [of the bermudagrass] and discourage excessive thatch development," says McCarty. Thatch accumulation over 1/2-inch build-up discourages good soil-to-seed contact, resulting in a spotty overseed stand.

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From the other standpoint, avoid overpreparation of the seedbed. Remember, you're not establishing a permanent turf, only a temporary one. Overpreparation can mean problems with spring transition to bermudagrass when warm weather arrives.

About six weeks prior to the overseeding date, the field can be cored to prevent compaction of the soil. After the cores have dried, drag with a chain-link fence or do a light verticutting. This will pulverize the cores and assist in making a good seedbed when overseeding time arrives. Coring should be done several weeks in advance of the overseeding date "to allow coring holes to heal over, preventing a speckled growth pattern of winter grass," says McCarty.

David Kopec, a turf specialist at the University of Arizona, Tucson, warns against heavy verticutting at overseeding. "If you verticut heavily prior to overseeding, the bermudagrass will use its food supply to immediately repair and regrow from the damage inflicted from verticutting," he says. "The result is poor food storage for hardening off for the winter from the diversion of late-season regrowth caused by heavy verticutting. This means a less hardy and competitive bermudagrass in the spring — a slow transition."

Annual Bluegrass

Annual bluegrass (*Poa annua*) is a common winter weed throughout the South. It has an unsightly bunch-type growth, pale-green color and a prolific seedhead. Because traditional herbicides can damage the germinating perennial ryegrass, annual bluegrass control



Auburn University's crew at Jordan-Hare Stadium brushes perennial ryegrass seed into their Tifway bermudagrass. Photo courtesy: Coleman Ward, Auburn University.

must begin as much as 120 days before overseeding.

An application of Kerb 50 WP (Pronamide) 45 to 60 days before overseeding will control annual bluegrass without damaging the perennial ryegrasses. If Kerb must be applied fewer than 45 days before overseeding, charcoal should be used in conjunction with the application. Use two to four pounds charcoal per 1,000 square feet. Kerb is labeled in all 50 states.

Another herbicide option is Rubigan 1AS (Fenarimol), with three applications giving the best control of annual bluegrass. The last application of Rubigan must be made two weeks before the scheduled overseeding date.

A third pre-emergent herbicide choice is Bensulide (trade names of Betasan or Pre-San). This herbicide must be applied 120 days before the anticipated overseeding date. The waiting period allows for good control of annual bluegrass germination without interfering with the germinating perennial ryegrass.

Balan (Benefin) can be used in overseeded perennial ryegrass for annual bluegrass control with a 45-day waiting period necessary. Application rates vary for Balan and all other herbicides. Always read the label and get local recommendations from your chemical distributor or turf extension specialist.

Getting Prepared

About four weeks prior to overseeding, completely stop all nitrogen

fertilization. This helps slow the growth of bermudagrass, meaning less competition for the germinating perennial ryegrass. In addition, if nitrogen fertilizer is applied too late in the season, the bermudagrass may be more susceptible to winter injury.

Have your soil tested one month before overseeding. Based upon test results, apply phosphorus (P205) and potassium (K20) a week or two before overseeding. Apply no additional fertilizer until after shoot emergence of the ryegrass. This will be approximately two to three weeks after germination.

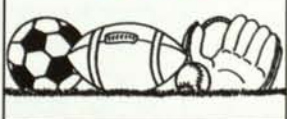
The bare minimum preparation for overseeding should entail light verticutting and topdressing. The suggested rate for topdressing is 0.25 to 0.50 cubic yards per 1,000 square feet before and after overseeding.

Hatcher at Oklahoma University suggests light verticutting prior to overseeding. "We actually do our overseeding in late September here at OU. We prepare the seedbed by dethatching, just scratching the surface of the soil." They dethatch in two different directions, and perennial ryegrass seed is then applied with a centrifugal spreader.

Immediately after seeding, drag the field to ensure good soil-to-seed contact. A stiff-wire power sweeper works well if used in several different directions.

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Post-Seeding Care

The field may require three or four light irrigations per day until all seeds have germinated, since fall tends to be dry in the South. Once you have a good stand, irrigation should be reduced. However, keep a check on the soil moisture. Each new plant should tiller in about two weeks. Until that time, there is very little room for deficiency in moisture.

Apply a fungicide about seven days after seedling germination to avoid *Pythium* contamination. "Conditions are right for *Pythium* whenever there are extended periods with day temperatures about 75 degrees and night temperatures about 70 degrees," says Rich Hanrahan, senior technological development manager for the Chipco™ Specialty Products Group at Rhône-Poulenc Ag. Co. of Research Triangle Park, NC. "Because *Pythium* disease organisms can survive in thatch for extended periods before emergence, effective fungicide treatments provide the surest protection against outbreaks of the disease," he says.

Aliette® (Rhône-Poulenc), Banol® (AgrEvo USA Co.) and Subdue® (Ciba Turf and Ornamental) are the three systemic fungicides currently available for *Pythium* control. Systemic fungicides do not require the frequent reapplication associated with traditional contact fungicides. As with all fungicides, alternating products can help avoid disease resistance.

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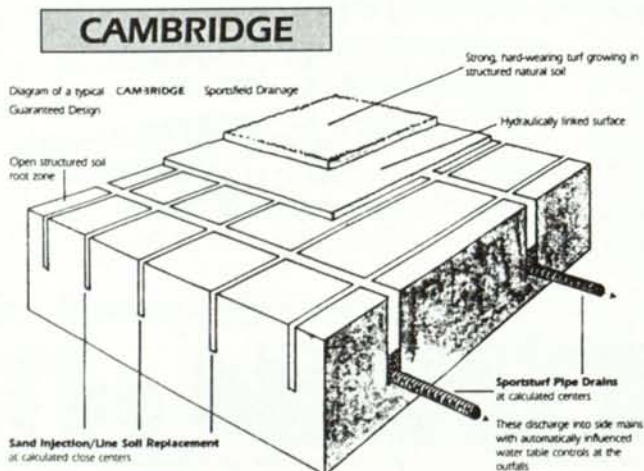
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In addition to fungicide sprays, fungicide-treated seed is a popular buy these days. Don Blasingame, a turf consultant in Starkville, MS, says, "Any overseeding program should include a fungicide seed treatment for protection from *Pythium*, which can produce seed and seedling rot. Strict, early disease management can make the difference in health and profitability of a turf stand." Glen Karaffa, product manager for Gustafson adds, "The differences seen between untreated and treated seed have been dramatic on side-by-side fields."

Experts often advocate watering athletic fields in the morning instead of evening to reduce turf moisture during the night. Good surface and subsurface drainage also play a key role. Avoid the common pitfall of overfertilizing because high rates of nitrogen cause lush, succulent growth that is very susceptible to *Pythium*.

Time for Bermuda

Just as in the fall, good cultural practices make for a smooth transition in the spring, according to Dr. Coleman Ward, extension turf specialist at Auburn University, Auburn, AL. Light verticutting when daytime temperatures reach 85 degrees will disrupt the crowns of the cool-season grass, allowing the bermudagrass to grow through. Heavy verticutting, however, can sever developing bermudagrass stolons.

With higher air and soil temperatures in the late spring, cool season grasses will respond vigorously to light periodic applications of ammonium nitrate or ammonium sulfate. The nitrate encourages the perennial ryegrass to grow very rapidly and "burn out."

Next, drop the mowing height but mow more frequently. Reducing mowing height and applying water-soluble nitrogen places a great deal of stress on the ryegrass. Mowing more frequently prevents the ryegrass from putting out new leaf growth, which depletes food reserves.

Reduction of irrigation will also place stress on the ryegrass. Be careful with this technique, however. Because the underlying bermudagrass has been getting moisture all winter long from the irrigation of the perennial ryegrass, it is not as drought-hardy as non-overseeded bermudagrass.

Another technique to speed the transition in favor of bermudagrass is chemical control. Dr. Ward says, "At Auburn we also use Kerb herbicide, applied 20 to 25 days before we want the ryegrass out. The application rate can range from one to three pounds active ingredient per acre. Bermudagrass has a very high tolerance for Kerb, while perennial ryegrass growth comes to a halt."

Although overseeding is a big job, one of the secrets to success is realizing it is a year-round process. Correct timing of your athletic turf management program can make all the difference in the ease of your transition periods. More efficient equipment, new varieties, innovations in fertilizer formulations and new pesticides can cut your work down to size. By viewing turf management as an interrelated process, you may be on the way to an easier transition. □

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