

Preparing Turf for Overseeding

by Bob Tracinski

Every sports turf manager must provide safe and playable turf. One technique that can enhance these qualities in an athletic field is overseeding.

Overseeding promotes uniform turf coverage that supports play with stability, traction, and cushioning. However, overseeding can also put excessive strain on turf. Just as an athlete needs to train before a big competition, turf needs to undergo careful preparation to be able to handle the unique demands of overseeding.

Filling multiple needs

In areas where cool-season turfgrasses are grown year-round, overseeding thickens established turf by adding more plants of the same species or of similar, compatible species. Overseeding in regions where warm-season grasses thrive generally introduces cool-season turfgrasses that provide active growth during the dormant period. These cool-season species are selected for their ability to transition in when temperatures cool, to thrive during cool-weather play, and to transition out when warmer temperatures bring active growth to the warm-season turfgrasses.

Preparation

Preparation for overseeding is a year-round process. Cultural practices that produce vigorous turfgrass also produce the best circumstances for overseeding. To prepare existing turfgrass areas to support new grass plants without experiencing detrimental effects on the established turf cover, it's necessary to juggle a combination of procedures.

Prior to overseeding, correct high and low spots. Use the same material as the root zone mix to fill in low spots. This will help avoid layering within the soil profile and uneven moisture during seed germination.

Compaction problems also need to be addressed prior to overseeding. You need to improve water, air, and gas exchange to encourage optimum growth of existing turf and to provide better conditions for seed

face) will require deep water injection or deep tine aeration. With both of these procedures, surface disruption is minimal.

If compaction is confined to the upper levels of soil and there is little or no break in field-use schedules, slicing is the best aeration method. Spiking is also a good option. It provides greater compaction relief than slicing with minimal surface disruption.

Core aeration offers the greatest amount of upper-level compaction relief. Cores pulled to the surface may be removed or allowed to dry and then pulverized. The method for pulverizing cores varies depending on the equipment available. The rake attachment of a field rake, a drag mat, a section of chain link fence, or an old mower can all accomplish this task. Grassy debris can be removed with a rake, blower, or broom / sweeper attachments. It's best to schedule coring several weeks in advance of overseeding so the existing turf has time to recover.

After handling compaction problems, strike a balance in thatch levels. Healthy amounts of thatch provide an in-season buffer zone to protect plant crowns from the wear of heavy use. Thatch can add more give or spring to the surface for players, and can help turf resist soil compaction and sudden temperature fluctuations. But be careful, too much thatch restricts water, nutrient, and air penetration, and blocks seeds from soil contact.

Dethatcher attachments on mowers can handle minor thatch reduction projects. Some sports turf managers use this procedure regularly throughout the



Preparation for overseeding is a year-round project. Maintenance practices that keep turf in top shape also produce the best conditions for successful overseeding. Courtesy: John Deere

germination. Solving compaction problems will also help eliminate weed problems.

Selection of aeration methods should be based on the degree and depth of compaction, the condition of the turf, and the field use schedule. More invasive aeration methods will produce extended periods of turf recovery.

Deep levels of compaction (those below three to four inches of the soil sur-

growing season, and merely adjust the timing of the final dethatching to fit overseeding schedules. For greater thatch reduction, verticutting (vertical mowing) with vertical rotating tines or blades can be used to thin thatch and bring the loosened, excess material to the soil surface.

Prior to overseeding, cutting blades should be adjusted to levels that reach through the thatch layer and slice into the soil surface. A consistent program of slicing provides effective thatch removal, some compaction relief, and good conditions for overseeding.

Immediately before overseeding, begin close mowing. Cool-season turfgrasses should generally be mowed to the lowest acceptable level for the season, field conditions, and field-use schedule. This may entail dropping the height of cut gradually for two or three weeks, or merely mowing at the previously established height of cut the day of overseeding.

Bermudagrass fields require severe close mowing methods. They involve setting the height of cut just above the soil line and scalping the turf with a reel mower.

Timing

Bermudagrass turf stops growing and starts to brown after the first hard frost of fall. It remains dormant until the spring warm-up. When soil temperatures begin their permanent seasonal decline, it's the ideal time to overseed with cool-season grasses.

Overseeding too late in the season may reduce soil temperatures below the effective germination level for cool-season grasses. Overseeding while soil temperatures are still fluctuating may trigger a late-season growth spurt in the bermudagrasses. This will intensify competition between the grasses. Pythium, a disease that is particularly threatening to new seedlings, is also more likely to occur in warmer temperatures.

Scheduling overseeding one to three weeks prior to the anticipated frost date will generally produce good results on warm-season turf. If field use schedules force earlier overseeding, it may be cost effective to make a preventive fungicide application to reduce the risk of pythium. For later overseeding, tarping may be used to bring soil temperatures to a more effective range for seed germination.

Overseeding cool-season turf can be a long-term project on athletic fields. Many sports turf managers periodically augment their early-fall overseeding

with lighter seed applications over the entire field, and spot overseeding in heavy-use areas. Timing of the initial overseeding varies by region. Nature provides its own seeding signals with cooling soil temperatures and the beginning of the warm day, cool night, heavy dew combination.

Overseeding in spot applications for heavy-wear areas and divot repair may be made prior to practices and games to allow players to cleat-in the seed. Spot

applications can also immediately follow a game as part of the general field repair process.

Some sports turf managers want seed in place and ready for growth from the start of the fall overseeding cycle through the last game of the season. Managers often combine primed or pre-germinated seed with the standard divot repair mix for these spot applications to reduce the germination interval.

Q: What do all of these teams have in common?

Oakland A's
Arizona Diamondbacks
University of Texas Longhorns
San Diego Chargers
University of Southern California Trojans
California Angels
Arizona State University Sun Devils
San Francisco 49'ers
San Diego State University Aztecs
San Francisco Giants
San Diego Padres
Los Angeles Dodgers
Oakland Raiders
Arizona Cardinals

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Process

Turfgrass variety selection will vary with field needs. Several factors must be considered: compatibility with existing turfgrasses; speed of germination and establishment; color; texture; cold hardiness; fertilization and irrigation needs; recuperative ability; and for warm-season turf, lack of spring persistence.

Seed may be applied with a drop or broadcast spreader, or with a slit seeder that combines soil preparation with the

seeding process. Adjust the seeding rate for such field specifics as density of existing turf; sun, shade, and wind conditions; anticipated wear; anticipated performance of the overseeding cultivars; planned additional in-play overseeding; and for warm-season turf, the anticipated transition-in and transition-out problems.

Spreading seed too heavily may cause the seed to compete with itself, or to produce a turf stand that is stronger than

desired during the transition-out period. A rate that is too light may not provide the desired density for playability and aesthetics. Spreading the seed at half-rate in two different directions (north-south, east-west) ensures more uniform application.

When the seed application is complete, it's necessary to promote seed to soil contact. A number of different methods can be used.

Overall topdressing with the standard topdressing mix for a particular field is the preferred method. Material must be applied in a layer that's heavy enough to increase seed to soil contact and provide cover, but light enough so that it won't inhibit growth of existing turfgrasses. If budget constraints prevent you from treating the entire field, topdress only high-traffic areas. If topdressing isn't an option at all, at least drag the seed into the soil with a metal or mat drag.

Fertilizer and pH adjustment should be based on soil test results. Also, test irrigation water to identify both pH and other elements, especially if reclaimed water is being used.

When overseeding cool-season turfgrasses, plan fertilization to stimulate both new seed and existing turf. This balance is more critical in warm-season overseeding, as it discourages bermudagrass competition while keeping sufficient phosphorous and potassium supplies available for both existing turf and new seedlings. Nitrogen applications should begin shortly after the emergence of the new seed shoots, and should continue throughout the active growing period.

Once the seed is in place, use light and frequent irrigation during the germination and establishment phases. As the new seed takes hold, intervals between irrigation cycles should be extended gradually, and water depth penetration should be increased to promote deeper rooting. Because fields remain in play, this must be done without neglecting the irrigation needs of the existing turf.

Ideally, initial mowing of the new seed should wait until seedlings are 1/3 higher than the recommended mowing height for that species. But again, this must be balanced by the mowing needs of the existing turfgrasses to retain optimum vigor and suitable playing conditions. □

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