

The Need to Overseed

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Figure 1: Overseeded sports field (Photo credit: Unknown)

Introduction

Bermudagrasses are widely used for sports field playing surfaces in transition zones and southern climates. To maintain high-quality and visually-appealing playing surfaces during the dormant season, sports fields are often overseeded with a cool-season turfgrass (Fig. 1). Therefore, a significant portion of play on sports fields may occur on overseeded bermudagrass stands. When considering overseeding your field, you must begin with a healthy stand of bermudagrass to prevent potential problems including grass stand loss during the subsequent winter or spring.

Depending on the location of your field within the state, both warm- and cool-season turfgrass species could potentially be grown. However, fluctuating temperatures and rainfall can limit the success of some turfgrass species. Proper selection based on location, water availability, and appropriate maintenance practices will ensure a functional field for your particular situation.

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The transition zone extends through the central part of the country and also includes parts of the other four climatic zones (Fig. 2). Therefore, the transition zone is the most challenging region in which to grow grass. The transition zone is cold enough in the winter to make it challenging to maintain warm-season species and hot enough in the summer to make it difficult to grow cool-season species. Therefore, no one species is well adapted to this region.

Overseeding Grass Selection

When overseeding your field, first decide which cool-season turfgrass species is best-suited for your situation. Two desirable characteristics for an overseed turfgrass are rapid establishment and wear tolerance. Ryegrasses (*Lolium* spp.)—perennial, annual, and intermediate types—are most commonly chosen for these reasons. Multiple varieties are available for each species of ryegrass. Some improved varieties have many desirable characteristics.

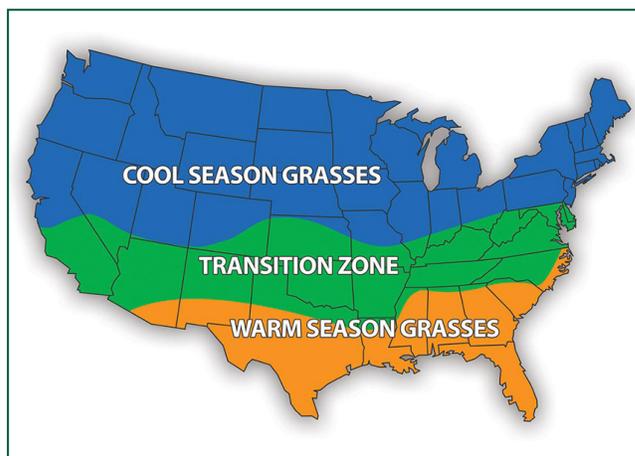


Figure 2: Turfgrass climate zones (Photo credit: Sod Solutions)

Perennial ryegrass (*Lolium perenne* L.) is commonly selected for its quick germination, finer leaf texture, darker green color, seedling vigor, thicker growth, and better disease and traffic tolerance than annual ryegrass (*Lolium multiflorum* L.). Perennial ryegrass seed typically costs more than annual ryegrass seed but can be a good investment when a higher quality playing surface is desired. Seeding rates for perennial ryegrass will depend on the specific use of the field. A disadvantage of overseeding with perennial ryegrass is that it usually has to be killed out in the spring to allow the bermudagrass to recover. This will be discussed further in the spring transition section.

Annual ryegrass is a viable, low cost option for overseeding athletic fields. Annual ryegrass will establish a few days sooner than perennial ryegrass and typically costs 30 to 50 percent less than perennial ryegrass. Annual ryegrass has a light green color as well as a coarser texture than perennial ryegrass. Again, seeding rates depend upon the specific situation. One advantage of annual ryegrass is that it does not usually require chemical removal during the spring transition period. However, annual ryegrass can be more susceptible to winter kill in more northern climates. This is only an issue if you are planning to use the field in the following spring. Annual ryegrass is a great choice when avoiding a difficult spring transition, for fields where turf managers do not have the budget for chemical transition, or for fields that do not receive heavy traffic.

Intermediate ryegrass (*Lolium hybridum*) is a hybrid of perennial and annual ryegrass. It has rapid establishment but lacks the heat tolerance, fine leaf texture, and dark green color of perennial ryegrass. The spring transition from intermediate ryegrass is easier than perennial ryegrass but is not as quick and easy as annual ryegrass.

Field Preparation and Proper Seeding Techniques

The first step to establish turfgrass is to conduct a soil test. For more information on soil testing, please visit <https://agrifecdn.tamu.edu/amarillo/files/2010/11/Testingyoursoil.pdf>.

Be careful not to apply excess nitrogen when overseeding. Doing so could continue to promote growth of the warm-season grass. Typically, 0.5 lb. N/1000 ft² should be sufficient for the initial overseeding event.

If you plan to overseed yearly, monitoring your pre-emergence herbicide program is crucial. Many pre-emergence herbicides will prevent germination and emergence of the overseeded ryegrass. However, there are pre-emergence products on the market that are safe to use for overseeding when following the guidelines. You should always read the label when applying any chemical.

One of the most important steps to overseeding is ensuring good seed-to-soil contact. There are multiple cultural practice techniques that will help ensure good contact. Scalping the existing turfgrass stand to its lowest recommended level is the most time- and cost-efficient method and one of the most common cultural practices. This method will provide an excellent seeding surface but could be detrimental to a warm-season stand late in the season. Other cultural methods that can be used to ensure seed-to-soil contact are aerating and verticutting. Heavy aeration several weeks before overseeding is recommended to aid in bermudagrass health. Vertical mowing can also be done 1 to 2 days before overseeding to remove thatch and open the canopy. These methods can be used in conjunction with scalping.

Always purchase fresh, high-quality seed. Seeding rates should be split and put down in two directions to ensure proper coverage without skips. A rotary spreader, drop spreader, or slit seeder can be used. Select the best application method for your situation. After the seed has been applied, seed should be dragged with a mat drag to promote soil contact. A light topdressing with sand can also be beneficial for ensuring seed to soil contact.

Seed Timing

The ideal time to overseed is in the fall when the average daily soil temperatures are consistently dropping below 72°F. Warm

days and cool nights are ideal for promoting successful germination. If you are unsure of your soil temperatures, begin to overseed once the bermudagrass has nearly ceased growing—approximately 4 to 6 weeks before the first frost. If perennial ryegrass is planted too late, cold temperatures could potentially hinder the germination and growth of seedlings. If planted too early, competition with bermudagrass may reduce establishment success.

Post-Seeding Management

Irrigation

To optimize germination, light, frequent irrigation events should be implemented to keep seed damp but not saturated. Light, frequent (one to four) daily irrigation events are commonly provided until seedlings have emerged. Maintain this schedule of irrigation until germination begins. Gradually reduce the frequency after germination with the goal of deeper, less frequent irrigation.

Mowing

After overseeding an athletic field, the field manager may not have much control over scheduling mowing. Mowing events should be delayed as long as possible after seeding. The delay will help to ensure that the seed is not damaged or blown away by the mower. In ideal conditions, germination of ryegrasses is rapid—occurring within 3 to 4 days of seeding. Begin mowing only after the majority of the seed has properly germinated if possible.

Fertilization

Fertilization is extremely important for new seedlings as well as for management, even in the short term. There are numerous slow- and quick-release products available to turf managers. Commonly, nitrogen fertilizer applied at 0.5 lb. N/1000 ft² on a biweekly basis (or 1 lb. N/1000 ft² applied every 4 to 6 weeks) through the fall and winter will effectively maintain acceptable overseeded turf quality and density.

Advantages to Overseeding

A major advantage to overseeding is the improved color and aesthetics. A more functional advantage is the wear and recuperative ability during the winter months due to the actively growing ryegrass when bermudagrass is dormant. Use of high seeding rates (10-20 lbs./ 1000 ft²) will create a denser turf canopy and help build wear tolerance during the dormant season.

Disadvantages to Overseeding

The major concern of overseeding is the competition produced between the overseeded ryegrass and bermudagrass in the spring. Ryegrass (especially perennial) becomes very hardy and may be difficult to naturally transition out. The main objective in the spring is a steady and smooth transition from overseeded grasses back to bermudagrass. Dormant bermudagrass will begin to emerge and grow as nightly soil temperatures consistently exceed 50°F. As spring temperatures rise, overseeded perennial ryegrass can become more sensitive to management practices designed to encourage bermudagrass recovery. With annual ryegrass, no chemical or cultural management is usually required to remove the overseeded grass. This species lacks heat tolerance and will naturally transition on its own. When bermudagrass green-up begins, a nitrogen application of 1 to 1.5 lbs. N/1000 ft² will often encourage bermudagrass growth at the expense of the annual ryegrass.

Three primary means of encouraging spring transition (i.e., providing the bermudagrass with a competitive advantage over the ryegrass) are lowering mowing height, reducing irrigation, and increasing nitrogen fertility. These management practices can often be successfully used without a chemical control to aid in the transition back to bermudagrass. However, sometimes it is not feasible to “naturally” transition back to bermudagrass. There are several options for chemical removal of overseeded grasses from bermudagrass. These options include but are not limited to Katana (flazasulfuron), Manor (metsulfuron), Monument (trifloxysulfuron), Revolver (foramsulfuron), and Tranxit

(rimsulfuron). These are the leading products currently used on sports fields to selectively remove ryegrass and aid in the bermudagrass spring transition. There are also non-selective herbicides that can be used on dormant bermudagrass to kill the overseeded grass. As with all chemical applications, risk is involved. Always read the label and follow directions closely. Chemical transition timing is often dictated by the current sporting season to ensure optimal and consistent playing surfaces. For example, football fields may be transitioned out in early spring—early in the bermudagrass green-up period—whereas baseball and soccer fields would need to be transitioned out later in the spring once the playing season has ended.

Turfgrass Colorants

If overseeding is not an option, there are alternatives for providing winter color in dormant bermudagrass. Turf colorants can provide aesthetic value on playing fields but are better suited for situations with minimal play and traffic

during dormancy. Application of these products must be done correctly for uniform application. Proper dilution rates and mixing practices must be observed. Even an experienced applicator should practice on an off-site utility area before applications are made to the playing field. There are a wide variety of colorants currently available on the market that offer beautiful green color during the dormant season. Since the duration of colorants can be impacted by environmental conditions and traffic, they may need to be applied up to three times during dormancy.

Conclusion

Winter overseeding can provide numerous aesthetic and functional benefits but may also present a management challenge during the spring transition period depending on the species. While not always economically feasible, the decision to overseed must be made in light of budget, available management resources, and the amount of traffic received during the dormancy period.

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