

The Consequences of Overseeding

by Tony Koski

Next to mowing, fertilizing and irrigating, overseeding is one of the most routine of sports turf management practices. As with any routine practice, however, it is sometimes performed with little thought or consideration of how it may impact turf quality in the future. The purpose of this article is to encourage the sports turf manager to more carefully consider how today's overseeding exercise might affect turf quality for a number of years into the future.

Why do we overseed?

The reasons for overseeding sports turf are well known:

- * To fill in turf damaged by traffic or pests
- * To introduce a different species into an existing turf, with the hope of changing the turf species over time
- * To introduce newer, improved varieties of the same species into an older turf area
- * To place seed in the turf, in anticipation of turf damage
- * To provide temporary cover or color (winter overseeding of bermudagrass, for example)

Just as the reasons for overseeding are varied, choosing the appropriate species and cultivar is important for getting the best results when overseeding. Timing and method of seeding should also be well thought out. If careful consideration is not given to all aspects of the overseeding process, the results may be unsuccessful or even undesirable.

In most overseeding situations, the ideal practice would be to overseed with the same species that the field was originally planted. By using the same species for overseeding the playing surface, uniformity is maintained. This is true not only in terms of visual aesthetics, but also for maintenance and quite possibly playability. However, the sports turf manager rarely practices his or her trade in an ideal world. Quite often the grass species used for overseeding is not the same as what was initially planted in the field, for some very good reasons.



Bermudagrass soccer field showing patches of overseeded ryegrass. Courtesy: Tony Koski

Overseeding with ryegrass

The short windows of opportunity available for overseeding Kentucky bluegrass fields, for example, often require one to use perennial ryegrass. When there are only a few weeks between seasons, important games or other field events, the rapid germination rate and seedling vigor of this species provides much greater potential for success than if bluegrass were used. It is very difficult to get bluegrass to "catch" and flourish when you have only a few weeks to a month as an overseeding window. Ryegrass, on the other hand, can germinate, become competitive with the existing turf and mature to the point that it can take traffic in a relatively short period of time. Tall fescue fields are sometimes overseeded with ryegrass as well, since tall fescue seedlings take some time to mature to the point that they can tolerate sports turf traffic. The establishment rate of overseeded ryegrass can be further hastened by using pregerminated seed.

Unfortunately, the aggressive or frequent use of perennial ryegrass as an overseeding grass may, over time, cause fields to shift from totally Kentucky bluegrass to mainly perennial ryegrass. Aesthetically, this is not a problem because ryegrass provides a very attractive playing surface. But ryegrass does not provide the level of traction that bluegrass does. This is because it doesn't form

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Good seed-soil contact is essential for successful overseeding.
Courtesy: Tony Koski

rhizomes and its shiny, succulent leaves can create a slippery surface. Further more, its bunch growth habit does not allow it to spread and repair worn or divoted areas like bluegrass.

Problems with ryegrass overseeding are not limited to its use on bluegrass fields. Overseeded bermudagrass often has problems emerging from dormancy in the spring, especially when high rates of ryegrass have been used or when spring and summer weather is cooler than normal. The competition and shading caused by a dense ryegrass canopy can actually kill bermudagrass before it has a chance to emerge from dormancy. Transitioning from overseeded ryegrass to bermudagrass can be hastened by lowering mowing heights in the spring to remove as much of the ryegrass canopy as possible. This allows sunlight to stimulate bermudagrass growth, and at the same time stresses the ryegrass to encourage its disappearance. Herbicides that selectively kill ryegrass can also be used, but the dying ryegrass should be removed to allow light to penetrate into the bermudagrass stolons below.

Of course, those with perennial ryegrass fields appreciate its rapid germination and aggressive seedling growth. This is essential on a ryegrass field, where recovery from injury is essentially supplied by the field manager via constant overseeding.

Overseeding with bluegrass

Overseeding with Kentucky bluegrass can be successful if the seedlings are given sufficient protection and time to allow them to mature. Single-sport bluegrass fields can be overseeded annually with great success. Multi-use fields are

generally overseeded with a combination of ryegrass and bluegrass, but few of the bluegrass seedlings will survive in the high use areas of the field. As a multi-use or otherwise heavily used field grows in age, the increasing percentage of perennial ryegrass (and often annual bluegrass) makes it even more difficult to establish new bluegrass.

Opinions vary regarding the success level to expect when overseeding bluegrass into a turf containing a high percentage of ryegrass or annual bluegrass. Research projects have just begun at Kansas State and Colorado State universities to evaluate techniques for improving survival of overseeded bluegrass into ryegrass turf. Though they don't guarantee success,

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Notice the stripes of overseeded perennial ryegrass, seeded with a walk behind slit seeder.

Courtesy: Tony Koski

some strategies that the sports turf manager might employ are:

- Use one or more of the aggressive, low-growing bluegrass cultivars for overseeding
- Ensure good seed-soil contact by drill seeding, slit seeding, or by seeding following shallow core cultivation
- Maintain as low of a mowing height as possible to reduce the competitiveness and shading effect of the perennial ryegrass
- Use a plant growth regulator such as Primo (trinexapac ethyl) to reduce ryegrass competition in conjunction with seeding efforts

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- Use bluegrass seeding rates of 3-6 pounds of bluegrass per 1000 square feet
- Try pregerminating the bluegrass seed
- Seed when conditions (warm soils and cool air temperatures) favor germination and seedling growth (late summer or fall)
- Use turf blankets to encourage germination and growth during the spring (although this will favor ryegrass vigor, as well)
- Use as little ryegrass as possible in the overseeding program

It appears that there is little chance for bluegrass to germinate and become established in a dense, healthy, high-cut perennial ryegrass turf. The ryegrass must be weakened so as to allow bluegrass establishment, but not so much that turf quality is severely diminished - unless some temporary turf loss can be tolerated.

Overseeding with bermudagrass

With the recent development of good quality seeded bermudagrasses, the turf manager may find occasion to use bermudagrass for overseeding. This need may arise when bermudagrass has suffered winter kill or when bermuda loss occurs during spring/summer transitioning. It is important to do your homework and select the best seeded bermudagrass cultivar, since they vary in texture and winter hardiness. These new bermudagrasses should be seeded in late spring or early summer when warming soil and air temperatures encourage germination and seedling establishment.

An interesting variation on the use of bermudagrass has recently been proposed by Drs. Gaussoin, Minner and Keeley at the University of Nebraska, Iowa State University and Kansas State University, respectively.

It involves the overseeding of cool-season sports turf with bermudagrass. They found that, when the only overseeding window available to the sports turf manager is the summer, the seeded bermudagrasses can perform quite well on midwestern athletic fields. The majority of the bermudagrass does not survive the winter in the northern fields, so it must be reseeded annually. This innovative overseeding technique allows northern fields to have a healthy stand of grass during a time of the year when heat and humidity preclude the successful overseeding of cool-season grasses.

Experiment!

There are not a large number of species used for sports turf overseeding, but there are many different varieties of each species. And there are numerous variations of how overseeding is performed. Seeding rates, frequency and time of year are all variables that can be experimented with. Methods of introducing seed and the use of plant growth regulators or turf blankets can also be tested. Maintenance programs can be fine-tuned to provide optimal conditions for seed germination and seedling growth. As with all aspects of sports turf management, there is no single correct way to overseed successfully. I would encourage every sports turf manager to experiment with different overseeding techniques and to share success stories with their colleagues.

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