



Tips for Athletic Field Seeding and Irrigation

Due to the high demand for athletic fields, renovation intervals of fields have become shorter over the last decade. Facilities are being pushed for quick turn-around to make game fields ready, from less than one year of establishment to as short as 3–4 months. This publication provides athletic turf managers with alternative seeding rates and irrigation options for reviving current grass or complete renovation of field turf.

Sodding is the quickest way to establish a new turf area around new construction or to repair damaged fields. While spring and fall are the preferable sodding times for cool-season grasses, sod can be established anytime the ground is not frozen or snow-covered. While sod is the quickest way to establish new fields, it is also more expensive. For this reason, athletic field managers usually turn to seed.

Seeding rates

Using high seeding rates for athletic field renovation allows for faster ground coverage and provides better competition with weeds, especially crabgrass. Higher than normal seeding rates of Kentucky bluegrass applied at 3–4 lbs./1,000 ft.², and perennial ryegrass at 10–15 lbs./1,000 ft.² provide faster coverage. However, it is important to increase the fertilizer rate with these higher seeding rates.

Applying seed with a drill seeder or drop spreader after hollow coring is preferred.

Retain grass cover with overseeding

When renovating fields, it is a good idea to keep existing turf if grass cover is at least 30–50 percent. Mature grass plants, even in a thin stand of grass, have better traffic-tolerance than a thick stand of seedling turf.

The existing grass cover aids the immature seedling turf in periods of high traffic. Unless there is good reason (i.e., weed infestation), avoid non-selective killing of all grass in high-traffic areas. Coring before adding seed will reduce soil compaction and increase seed germination while providing a great growing environment. Applying seed with a drill seeder or drop spreader after hollow coring is preferred. In some cases, a second application of seed may be warranted.

A combination of nitrogen sources should be used following seeding. Quick-release fertilizer sources, such as ammonium sulfate or urea, are best applied in the fall, while slow release or organic nitrogen should be applied in spring or early summer. It is also a common practice to add an organic fertilizer such as Milorganite™, produced by Milwaukee Metropolitan Sewerage District, in with the seed. The nitrogen (N) to potassium (K) ratio is very important for traffic and drought tolerance. The lowest N to K ratio should be at least 2:1, with a 1:1 ratio in high-traffic areas being optimal.



Overseeding of an athletic field.



An example of a high traffic athletic field that should be overseeded between the hash marks.

A goal for grass-bare areas is for seeding to occur within 24 hours of discovery. Instead of waiting to seed and re-establish the grass once or twice per year, use multiple seeding events, as much as 6–10 times during the year. There is no bad time to seed, as some seedlings die, others will survive. It is not a waste of money, but rather using seed as a building block for the future. Seed grass whenever the soil is exposed or loss of turf cover due to heavy traffic is anticipated. If there is any doubt that the field may not withstand the traffic from the next game or practice, the seeding should have happened last week.



Overseeding may be needed in bare soil areas.

Grass selection for reseeding

Perennial ryegrass is often used to re-seed damaged athletic fields because of its quick seed germination and establishment, as well as excellent wear tolerance. However, perennial ryegrass has poor to moderate heat tolerance. This moderate heat tolerance can cause summer “burn out” in nonirrigated fields. Instead of



Temporary irrigation guns can be used for watering athletic fields.

reseeding these areas every fall, consider adding a small percentage (less than 30 percent) of a low-maintenance and drought tolerant Kentucky bluegrass. Adding this small percentage of Kentucky bluegrass will reduce the likelihood of having to replace these areas.

Tall fescue is known for its ability to handle heavy traffic, hot temperatures and drought. The new, improved cultivars are finer in texture and are generally more aesthetically pleasing. With the introduction of new tall fescue cultivars, it is being considered in many low-maintenance facilities with limited access to water.

If Kentucky bluegrass and perennial ryegrass have failed, due to the lack of water, it may be time to try tall fescue. It is important to consider that while tall fescue can be used as an alternative to an adequate irrigation system; it would be a mistake on soccer fields where a smooth ball-rolling surface is desired. Tall fescue’s excellent drought and traffic tolerance, coupled with its bunch type growth, can cause a clumpy and uneven playing surface when subjected to intense traffic and insufficient water. Should clumping become a problem, overseeding with additional tall fescue and temporary watering with a portable rain gun will be needed to regain adequate turf density and acceptable playing conditions. The key, is to not discourage use of tall fescue, instead emphasis that a temporary irrigation system may be necessary regardless of species choice. Watering as little as five times during the summer may be sufficient to maintain an acceptable tall fescue athletic field.

When to irrigate

Too much, too often, too shallow can all describe situations where irrigated athletic fields fail. As a general rule, turf should be allowed to slightly wilt before irrigation. At this stage of wilting, soils are well-aerated because air has replaced the water that was removed from the soil pore space by the roots. Roots need water to grow, but they also need air-filled pore space. Excessively wet soils become anaerobic and can produce a distinct sulfur odor of rotten eggs. Root growth and overall plant health is poor in these anaerobic conditions. About 1–1 1/2 inches of water per week is sufficient for soil-based fields. Sand-based fields require more frequent watering than a native soil field.

The best time to water is in the early morning hours, from 4 to 6 a.m., because of the limited moisture time on the leaf. As the sun rises, it quickly dries and reduces the humidity and free moisture surrounding the grass plant. Midday watering, as well as dusk, may result in increased diseases and a loss of water because of evaporation.



Watering the infield is managed differently than grass.

Baseball infield requires attention

Watering the skin portion of an infield, the area without grass, is just as important as watering the grass. Separate irrigation stations, heads and valves are needed for watering the infield because it is managed differently than grass. Moisture is very important for the safety and playability of the field since 66 percent of the baseball game is played in the skin area.

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