

Choosing Cool-Season Turfgrasses for Athletic Fields

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Attaining attractive turf, suitable for northern athletic fields, begins with proper turfgrass selection. Vigorous turf has been achievable using a battalion of products and cultural practices in an intensive maintenance program. High fertilizer rates, supplemental irrigation as needed, and a strong preventative or curative program for disease, insect, and weed control, both cultural and chemical keep turf at its prime. Increasing costs and stricter environmental rules require changes for the turf manager, including choosing the best adapted turfgrass species and cultivars.

Major turfgrasses used on athletic fields in the North include Kentucky bluegrasses, perennial ryegrasses, and tall fescues. These species, used alone as blends of cultivars or in combination of species in mixes, provide the best surfaces for natural athletic turf. Football, soccer, rugby, baseball, softball, polo, lacrosse, and field hockey require turfgrass heights ranging from 0.5 to 2 inches. Lower cutting heights occur with lawn bowling, bocce, cricket, croquet and tennis, where 0.25 inches is the maximum height. Bentgrasses dominate these turf fields, but are not included in this article.

Kentucky bluegrasses are the most aggressive of the cool-season turfgrasses used for athletic fields, spreading by rhizomes. These underground stems spread below the soil surface to provide a strong network of intertwined vegetation able to withstand tearing action from athletic activities as well as enabling fast recovery from the damage. Kentucky bluegrass leaves are medium to fine textured with a medium to dark green color, providing what some consider to be the most attractive cool-season turf. Mowing tolerance ranges from 0.5 to 2.5 inches.

Cultivar choices are greatest with this species. Research at Rutgers University (J.A. Murphy, et al, 1995 Rutgers Turfgrass Proceedings) resulted in classification of several cultivars in one of eleven groups. You can choose compact types like "Midnight," "Limousine," "Odyssey," "Nuglade," and "Glade." These cultivars tolerate of some of the lowest mowing heights (next to Bentgrasses), or more aggressive types such as "P-105," "A-34," or "Touchdown" capable

of recovering from the most severe play.

Other vigorous cultivars tolerate summer stress fairly well. Examples of the the Mid-Atlantic ecotype, include "SR200," "Preakness" and "Livingston." The cultivars, "Suffolk," "Monopoly," "Unique," "Freedom," "Haga" and "Cynthia," exhibited superior wear tolerance in National Turfgrass Evaluation Program testing begun in 1990.

Perennial ryegrasses, once considered weakly perennial because they survived only a few years at most, have been greatly improved over the past 20 years. Desirable attributes for use as an athletic turf include improved seedling establish-

ment, rapid tillering, dense growth, improved mowing quality and color, high traffic tolerance and some insect resistance, particularly if endophytic cultivars are selected.

This grass is a bunch-type grass that does not form rhizomes or stolons (above-ground stems). This means it does not have as strong a recuperative ability as Kentucky bluegrass. Perennial ryegrass does, however, spread by tillers, which are new stems formed within the leaves of existing plants. Perennial ryegrass can be mown at heights between 0.75 and 2.5 inches.

continued on page 9

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continued from page 5

The rapid establishment of this grass makes it suitable for overseeding thinned or damaged turf. Due to the aggressive nature in initial establishment of perennial ryegrasses, it is generally recommended to use no more than 20% of this grass in mixtures with other grasses. Where heavy wear is expected, up to 40% perennial ryegrass is sometimes used. Soccer goal mouths may be seeded to 100% perennial ryegrass. Cultivars of this species include "Palmer III," "Brightstar II," "Prelude III," and "Manhattan III."

Like perennial ryegrasses, tall fescues show excellent wear tolerance required of sporting events. For athletic field use, turf-type tall fescue cultivars provide finer leaf texture; denser and lower growth habits; greater persistence, closer mowing tolerance, and heat, drought and insect tolerance. In spite of improvements, mowing height tolerances for tall fescues are not as low as with Kentucky bluegrass or perennial ryegrass, ranging from 1.5 to 3 inches. Cultivar examples of this species include "Rebel, Jr.," "Millennium," "Plantation" and "Arid III."

Kentucky bluegrass-perennial ryegrass mixtures or blends of two or more cultivars of either perennial ryegrass or Kentucky bluegrass dominate athletic turf in the North. Kentucky bluegrass and perennial ryegrasses may be mixed in varying percentages from mainly Kentucky bluegrass to 50% of each species. Some fields are established by sodding with Kentucky bluegrass and overseeding with perennial ryegrass.

Tall fescues, when mixed with Kentucky bluegrass and/or perennial ryegrass, is usually the predominant

component of the mix. An example is 80% tall fescue and 10% each Kentucky bluegrass and perennial ryegrass. Some sports turf managers have reported success mixing higher percentages of Kentucky bluegrass and/or perennial ryegrass with turf-type tall fescues, which produced a more uniform mixture than older tall fescue cultivars.

The general public appreciates a dark green turf. Pushing turf with nitrogen or iron enhances the natural green color, but high nitrogen applications may contribute to excessive thatch and a more succulent and easily damaged grass. Diseases and insects may also be a problem with overfertilization. Turfgrass breeders continually strive to improve color genetically. Density, the other important component of turf quality for sports turf managers, is desirable from the standpoint that a dense turf will provide a safer surface for athletes. Dense turf is also more likely to contain aggressive grasses which will recover more quickly from damage, something common on sports fields. Kentucky bluegrasses fit this need better than perennial ryegrasses or tall fescues.

Breeders continue to strive for improved turf quality and better environmental stress tolerance. As more locations restrict cultural practices, new cultivars will need the ability to withstand reduced maintenance and irrigation.

Due to the changing availability of turfgrass cultivars, you should check with your county or university extension personnel for the most current information turfgrass performance in your area.

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