

Rutgers Corner – Utilizing and Maintaining Tall Fescue as a Sports Turf

by Brad Park, Rutgers University*

During the last 20 years, the use of improved "turf-type" tall fescue varieties for turf has increased dramatically; conversely, the establishment of "forage/conservation-type" tall fescue cultivars such as 'Alta' and 'Kentucky 31' has been more reserved to settings such as roadsides and other utility turfs. Turf-type tall fescues have been used to enhance the quality and durability of school grounds, sports fields, and parks in New Jersey as well as many other areas of the United States. Lower-growing varieties of tall fescue offer reduced mowing frequency as well as improved turfgrass quality. Lower irrigation and fertility requirements of tall fescue make it possible to maintain moderate to high quality sports fields turf while reducing costly inputs.

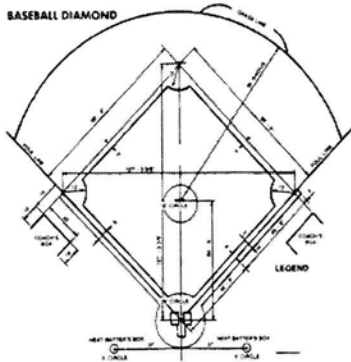
Tall fescue is well adapted and therefore an excellent choice for use on

low maintenance, non-irrigated sports fields because it has the capacity to develop a deep root system that provides tolerance or avoidance of drought stress. The drought tolerance of tall fescue is dependent on the turfgrass stand being capable of developing a deep extensive root system. Utilizing tall fescue on sports fields with shallow or poor quality soil conditions will severely limit root development and reduce any expected benefits of drought tolerance. Thus, efforts to improve soil quality, particularly at the time of sports field construction, will enhance the drought tolerance of tall fescue as well as other turfgrasses.

This turfgrass species can survive under reduced fertility, and tolerates insects better than many other cool-season turfgrasses. Tall fescue is adapted to moderately well-drained and fertile soil of slight acidity (optimum pH of 6.5 to 6.7). Although short rhizomes are

observed on some plants, tall fescue is considered to have a bunch-type growth habit (tillers from a central crown). Emergence of tall fescue seed occurs within 5 to 7 days in warm moist soil. Compared to perennial ryegrass, the rate of tillering and establishment of tall fescue is slower.

The good wear tolerance of well-established mature tall fescue makes this turfgrass an option for sports fields and other high traffic sites. When establishing tall fescue on sports fields in late summer, commencement of play should be withheld until the following spring to ensure the development of a wear tolerant turfgrass stand. Good turfgrass recovery from wear damage is largely a result of re-growth from meristems located on the crown at 1/3-inch below the soil surface. Kentucky bluegrass is commonly mixed with tall fescue to increase the ability of the turf to spread laterally due to the strong rhizomatous growth of many Kentucky bluegrass varieties. Such mixtures should consist of one or more Kentucky bluegrass varieties in combination with two or more traffic tolerant turf type tall fescue varieties with the following standards (percentage by weight): 85 95% tall fescue; 5 15% Kentucky



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bluegrass. A tall fescue and Kentucky bluegrass mixture should be seeded at 4 to 6 pounds of seed per 1000 square feet (175 to 265 pounds per acre), whereas a 100% tall fescue turf should be seeded at 4 to 8 pounds of seed per 1000 square feet (175 to 350 pounds per acre).

Seed mixtures that contain perennial ryegrass as well as tall fescue and Kentucky bluegrass are also used; however, these mixtures are more likely to produce less uniform turf cover. The most uniform appearance occurs when tall fescue is seeded as the only turfgrass or in a mixture with Kentucky bluegrass. Also, perennial ryegrass has aggressive seedling vigor and may dominate in a turf mixture; therefore, the turf will effectively perform as a perennial ryegrass turf and not a mixture. Under an aggressive fertility program (e.g. 5.0 lbs N [nitrogen] per 1000 square feet per year) tall fescue seed mixed with as little as 5% perennial ryegrass can potentially result in a turf that is 90% or greater perennial ryegrass.

Tall fescue may be grown in some rather poor soil conditions and can be maintained at a higher mowing height and a low to moderate level of fertility.

Without measures taken to improve the conditions, the overall appearance of turf grown on poor soil will probably not be of high quality. Mowing heights under very low maintenance or poor soil conditions should be 3.0-inches or higher. A mowing height of 2.0-inches can be used when turf-type tall fescues are maintained with moderate levels of fertility and sufficient water. At mowing heights less than 2.0-inches, tall fescue is prone to the invasion of opportunistic weeds such as annual bluegrass (*Poa annua*) and crabgrass.

Annual N fertilization rates vary depending on the soil fertility, desired turf quality, and the necessity to encourage turfgrass recovery following sports field use. Annual N rates range from 1 to 4 pounds of N per 1000 square feet of turf area. Higher annual N rates may be appropriate for establishing turf or promoting turfgrass recovery on intensively trafficked turf sports fields where recovery from severe wear damage is necessary. Older turf where soil fertility has been improved will generally require lower rates of N fertilization. Applying the majority of N fertilizer in late summer and early fall

will improve density and overall health of the turf better than spring application of fertilizer.

Irrigation of tall fescue sports fields is necessary under severe drought conditions to maintain green vigorous growth; however, a healthy tall fescue turf is capable of surviving drought for many weeks by going dormant. Tall fescue drought survival will be best if traffic, insects, or disease are not damaging the turf. Tall fescue turf grown on shallow or poor quality soils will have a limited root system and, therefore, less persistence under severe drought stress.

Literature Cited

Murphy, J. and E. Watkins. 2002. Tall fescue varieties for New Jersey. Rutgers Coop. Res. Ext. Fact Sheet FS990.

Murphy, J. and B. Park. 2004. Tall fescue varieties for New Jersey sports fields. Rutgers Coop. Res. Ext. Fact Sheet FS544.

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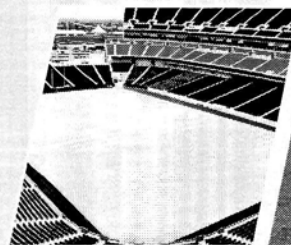
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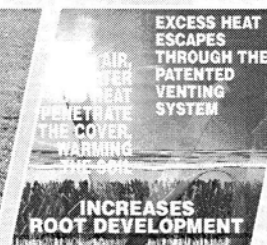
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