

# TALL FESCUE Varieties for New Jersey Sports Fields

By Brad Park and Dr. James Murphy

*Editor's Note: This article was derived from the Rutgers New Jersey Agricultural Experiment Station Cooperative Extension Fact Sheet with the same name. The full Fact Sheet, as well as a list of varieties, can be found at <http://njaes.rutgers.edu/pubs/lfs/1186/tall-fescue-varieties-for-nj-sports-fields.asp>*

Use of tall fescue (*Festuca arundinacea* Schreb.) as a forage and conservation grass increased in the United States with the release of 'Alta' and 'Kentucky 31' in 1940. It has long been used for control of soil erosion along right-of-ways such as highway roadsides. By the 1960s, 'Kentucky 31' became more widely recognized as a useful turfgrass in the transition zone (boundary between the temperate and subtropical climates) of the United States due to its good heat tolerance and adaptation to a wide range of soil (pH, fertility and moisture) and light conditions.

'Rebel', released in 1979, was the first turf-type tall fescue variety with a reduced vertical growth habit, finer leaf texture and darker green color compared to Kentucky 31 and Alta. Continued turfgrass breeding efforts have provided retail consumers and turfgrass professionals with many choices of improved, turf-type varieties, which has increased the use of tall fescue.

Turf-type tall fescue is a good choice for school grounds, sports fields, and parks in New Jersey and other regions where the mowing height is 2-inches or taller and nitrogen fertilizer and irrigation inputs are minimal. Improved, lower-growing varieties of tall fescue reduce the need for frequent mowing as well as improve turfgrass quality and longevity. Lower irrigation and fertilization requirements of tall fescue compared to Kentucky bluegrass (*Poa pratensis* L.) and perennial ryegrass (*Lolium perenne* L.) make it possible to maintain

moderate to high quality sports fields utilizing fewer inputs. Meeting the challenges of lower input turf management strategies is important for municipal governments and school districts operating with limited budgets.

Properly established tall fescue exhibits a deep root system, helping it tolerate drought stress and white grub feeding. Additionally, most improved varieties of tall fescue are endophyte-enhanced, which improves resistance to surface feeding insects; however, endophyte-enhanced tall fescue varieties should not be established where livestock grazing is anticipated.

## Selecting Varieties

Selection of tall fescue varieties for sports fields should be based on the characteristics of traffic tolerance, turfgrass quality, and susceptibility to brown patch disease (caused by *Rhizoctonia solani*). Traffic tolerant varieties are more persistent under the combined stresses of wear and compaction, which are very common on sports turfs.

Turfgrass quality is a visual evaluation of a turf's color, density, uniformity, texture (fineness of leaf blades), and freedom from pest and environmental stress damage; these data are available for multiple National Turfgrass Evaluation Program (NTEP) test locations.

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# 2013

## CALENDAR OF EVENTS

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November 7, 2013  
East Brunswick Vo-Tech High School  
East Brunswick, NJ  
856.514.3179  
[www.sfmanj.org](http://www.sfmanj.org)

### **New Jersey State League of Municipalities**

November 19-21, 2013  
Atlantic City Convention Center  
Atlantic City, NJ  
609.695.3481  
[www.njslom.org](http://www.njslom.org)

### **New Jersey Green Expo**

December 10-12, 2013  
Trump Taj Mahal  
Atlantic City, NJ  
973.812.6467  
[www.njturfgrass.org](http://www.njturfgrass.org)

### **STMA Conference & Exhibition**

January 21-24, 2014  
San Antonio, TX  
800.323.3875  
[www.stma.org](http://www.stma.org)

### **2014 Rutgers NJAES OCPE Courses Organic Turfgrass Management**

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### **Two-Day Athletic Field Maintenance**

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## TALL FESCUE Varieties for New Jersey Sports Fields

Brown patch disease is capable of producing large (1 to 2-ft diameter) circular patches of damaged turf during periods of warm, humid weather and is the most problematic disease affecting tall fescue. Varieties and experimental selections are routinely evaluated for susceptibility to brown patch disease in NTEP trials.

Research conducted at Rutgers University on the 2006 National Turfgrass Evaluation Program (NTEP) Tall Fescue Test has identified tall fescue varieties with better traffic tolerance, turfgrass quality, and lower brown patch susceptibility (<http://njaes.rutgers.edu/pubs/fs1186/tall-fescue-varieties-for-nj-sports-fields.asp>).

### **Purchasing Seed**

Purchasing certified seed of tall fescue is strongly suggested. Certified seed is grown in fields inspected by a state-certifying agency for genetic purity and also meets standards for germination (viability) and freedom from weeds and other crop seeds.

Identifying the variety of seed in the container allows the buyer to select improved varieties having the genetic traits that are most important for high quality sports field playing surfaces. Conversely, use of poorly adapted varieties can result in extensive turf failure, which increases the likelihood of field downtime and costly repairs. Seed labels that do not identify varieties or report varieties as variety-not-stated (VNS) present a risk to the buyer because the turf quality of the seed is unknown.

### **Establishment of Tall Fescue**

Tall fescue grows well in moderately well-drained and fertile soil of slight acidity (optimum pH of 6.5 to 6.7). Tall fescue is an excellent choice for low to medium maintenance sports fields where irrigation is either limited or not available. Drought tolerance of tall fescue depends on the turf being well-established, especially after the development of a deep extensive root system, which may take a full growing season. Good rooting will be achieved by proper soil preparation before seeding or sodding and adequate nitrogen fertilization and irrigation during the establishment year. Construction practices and other efforts that limit compaction of the soil will ensure drought tolerance of tall fescue.

Tall fescue lacks abundant rhizomes, which are necessary for aggressive lateral spreading; thus, Kentucky bluegrass is commonly mixed with tall fescue to increase the ability of the turf to spread laterally. The rhizomes of Kentucky bluegrass provide sod strength and facilitate a suitable harvest. Sod of tall fescue and Kentucky bluegrass is readily available in New Jersey. Tall fescue and Kentucky bluegrass seed mixtures should consist of two or more traffic tolerant turf type tall fescue varieties in combination with one or more Kentucky bluegrass varieties with the following standards (percentage by weight): 80-95% Tall fescue; 5-20% Kentucky bluegrass.

Because the seed size of Kentucky bluegrass is much smaller than tall fescue, mixtures that contain 90% tall fescue and 10% Kentucky bluegrass (by weight) have approximately an equal number of tall fescue and Kentucky bluegrass seeds. Seed mixtures that are 80% tall fescue and 20% Kentucky bluegrass (by weight) are approximately 70% Kentucky bluegrass and 30% tall fescue (by seed count).

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Over time, the composition of tall fescue and Kentucky bluegrass turf mixtures can gradually shift to a population of primarily Kentucky bluegrass. This is more likely under lower mowing heights, greater nitrogen fertility, more frequent irrigation, and other management practices that favor Kentucky bluegrass. Choosing a seed mixture that minimizes the quantity of Kentucky bluegrass and maintaining the turf to favor tall fescue development should delay this transition.

Perennial ryegrass is often mixed with tall fescue to hasten seedling emergence and turf establishment and provide a darker green turf. Unfortunately, the aggressiveness of perennial ryegrass can result in turf stands consisting of 90% or greater perennial ryegrass when as little as 5% perennial ryegrass (by weight) was included in the seed mixture. Many improved tall fescue varieties have a darker green color; hence, there is less of a need to include perennial ryegrass for color enhancement. Perennial ryegrass can be excluded from a seed mixture when tall fescue is seeded before September 15 and there is adequate time to establish the turf. As a general rule, tall fescue turf will reach a mature condition once it grows through two "cool seasons"; that is, a fall and spring or spring and fall periods.

Tall fescue seedings are typically more successful when seeded at 8 to 10 pounds of seed per 1,000 square feet (350 to 440 pounds per acre) of turf area. A tall fescue and Kentucky bluegrass mixture should also be seeded at 8 to 10 pounds of seed per 1000 square feet (350 to 440 pounds per acre). Seeding tall fescue at lower rates can be successful under ideal conditions; however, lower seeding

rates have greater risk of forming a clumpy, sparse turf cover, especially when soil preparation is less than ideal.

Emergence of tall fescue should occur within 5 to 7 days when seeded into warm moist soil. The rate of tillering (primary lateral shoots arising from the crown) and establishment of tall fescue is slower than perennial ryegrass but more rapid than Kentucky bluegrass. Tall fescue has a bunch-type growth habit (tillers from a central crown) although short rhizomes are observed on some plants. Extensive tillering and rhizome development are spreading traits that turfgrass breeders are continuing to work on to improve tall fescue varieties.

A well-established, mature tall fescue turf will exhibit good to excellent traffic tolerance. Ideally, intense foot traffic (use) should be withheld for one year on newly seeded tall fescue sports fields to ensure the establishment and development of a traffic tolerant turfgrass stand; however, in some cases, earlier field use may be achievable. Additional details on establishment of sports field surfaces can be found in the Rutgers Cooperative Research and Extension Bulletin E300 Turfgrass Establishment Procedures for Sports Fields (<http://njaes.rutgers.edu/pubs/publication.asp?pid=E300>).

Recovery from traffic damage occurs from re-growth of meristems located on the crowns of plants, which are approximately one-third (1/3) of an inch below the soil surface. Recovery is not possible if crowns are destroyed; re-seeding or sodding will be necessary to repair this type of damage.

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## Dr. Henry W. Indyk Graduate Fellowship in Turfgrass Science

*As many of you know, the turfgrass industry lost a dear friend and colleague in September 2005. We will all miss Henry very much and would like to insure that his legacy lives on. The Indyk family would like to establish a memorial fellowship to support graduate students interested in applied turfgrass science. This fellowship is being created to help assure that tomorrow's graduate students have the financial resources to get an advanced degree in turfgrass science at Rutgers University. To fund a full graduate assistantship each year in Henry's name, we will need to raise a total of \$400,000. Your generous support at this time will bring us closer to reaching this goal.*

*To make a tax-deductible contribution today, please send a check payable to the Rutgers University Foundation, 7 College Avenue, New Brunswick, NJ 08901. Be sure to indicate "Indyk Fellowship, Turfgrass" in the memo portion of your check. If you desire, you may provide a donation in the form of a pledge payable over several years.*

*For information on other ways to support this fellowship, please contact*

*Dr. Bruce B. Clarke, Director – Rutgers Center for Turfgrass Science  
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## Maintenance of Tall Fescue for Sports Turf

Mowing heights as low as 1.5 to 2 inches may be used when turf-type tall fescue is maintained with moderate fertilization and irrigation is available. However, tall fescue turfs are more prone to weed invasion at mowing heights less than 2 inches.

Annual nitrogen fertilization rates depend on the soil organic matter content, desired turf quality, need for turfgrass recovery after field use/play, and the age of the turf. Recommended annual nitrogen rates range from 1 to 4 pounds of nitrogen per 1,000 square feet of turf area. Fertilization of turfgrass in New Jersey must be performed in accordance with the 2011 New Jersey Fertilizer Law (New Jersey Act, P.L. 2010, c. 112 (C.58:10A-64). Four pounds of nitrogen per 1000 square feet per year may be appropriate for establishing turf or promoting turfgrass recovery on intensively trafficked turf sports fields. Older turfgrass stands where soil organic matter content is adequate will require less nitrogen fertilization. The timing of N fertilization for tall fescue fields should be matched with usage. For example, more nitrogen fertilizer should be applied in late summer and early fall if this is also the season of primary use. Conversely, spring applications of N fertilizer should be emphasized when the field use is greatest during the spring. For more information on fertilization of sports fields see Rutgers Cooperative Extension publication FS105 Maintaining Athletic Fields (<http://njaes.rutgers.edu/pubs/publication.asp?pid=fs105>).

Irrigation of tall fescue sports fields is necessary under severe drought conditions to maintain healthy vigorous growth during play. However, a healthy, well-established tall fescue turf needs less frequent irrigation and is capable of surviving drought for many weeks by going dormant. Tall fescue will survive drought conditions best when traffic is withheld while the field is dormant. Insect or disease activity will reduce the survival of drought stressed and dormant turf. Tall fescue turf grown on shallow or unhealthy soil will have a limited root system and, therefore, less persistence under severe drought stress.

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