

Turfgrass Selection Bluegrasses

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More than 200 species of bluegrass exist worldwide. Most grow best in cool-humid or transitional climates. Some are perennials with strong rhizomes or stolons; others are upright, bunch-type annuals. Kentucky (*Poa pratensis* L.) and rough (*Poa trivialis* L.) bluegrasses are used as turfgrasses in Tennessee. A third, hybrid bluegrass has potential due to its tolerance of high temperatures.

bluegrass is darker green than many varieties of improved, turf-type tall fescues. The strong rhizomes of Kentucky bluegrass can improve the tensile strength of sod. When weather is favorable, one Kentucky bluegrass plant can produce from 20 to 50 or more feet of rhizomes in five months (Lobenstein, 1962).

Kentucky Bluegrass



Kentucky bluegrass, a widely used perennial turfgrass in temperate and sub-arctic climates, is probably the most recognizable species in the

U.S. Kentucky bluegrass is native to northern Asia; the mountains of Algeria and Morocco; and cool, open sites in Europe. The species gets its name from the origin of the early, commercially produced seed and its blue-green color. Leaf blades are V-shaped or flat and have a keel- or boat-shaped tip. A light line can often be seen on each side of the central vein of the leaf blade. Plants grow best in fertile, well-drained soils in full sun or light, open shade. Kentucky bluegrass establishes slowly from seed compared to perennial ryegrass and tall fescue. A relatively high water requirement; lack of establishment vigor; shallow root system; and limited shade, wear and soil acidity tolerance restrict the use of Kentucky bluegrass in Tennessee. Many sod producers plant a 90:10 (by weight) tall fescue: Kentucky bluegrass seed mixture. Kentucky

Varieties

'Merion,' the first improved Kentucky bluegrass cultivar registered in the U.S., was selected in 1936 at the Merion Golf Club in Ardmore, Pennsylvania and released in 1947 by the Plant Science Research Division, ARS and the U.S. Golf Association Green Section. More than 200 varieties of Kentucky bluegrass are available worldwide. Seventy-two Kentucky bluegrass entries were evaluated in 24 states, Washington, D. C., British Columbia and Manitoba during the 1985 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Test; 90 entries in 14 states and Ontario during the 1990 NTEP Kentucky Bluegrass Test; 103 entries in 21 states, Alberta, Ontario and Quebec during the 1995 NTEP Kentucky Bluegrass Test; and 116 entries in 25 states during the 2000 NTEP Kentucky Bluegrass Test. Varieties vary in color, texture, stand density, disease resistance, shade and wear tolerance, thatch production, water use and level of required maintenance.

During the 2000 NTEP Kentucky Bluegrass Test, varieties such as 'Advocate,' 'Arboretum,' 'Argyle,' 'Barblue,' 'Baritone,' 'Belmont,' 'Cabernet,' 'Cache,' 'Delta,'



'Fylking,' 'Harmony,' 'Kenblue,' 'Kimono,' 'Mesa,' 'Monopoly,' 'Newport,' 'Parade,' 'Park,' 'Parkland,' 'Piedmont,' 'Plush,' 'Sonoma,' 'South Dakota,' 'Vantage,' 'Vanessa,' 'Victa' and 'Wabash' grew upright, were more susceptible to disease and generally required less maintenance than other, lower-growing varieties. The varieties 'Absolute,' 'Alpine,' 'America,' 'Argos,' 'Bensun,' 'Bluemoon,' 'Bristol,' 'Eclipse,' 'Glade,' 'Impact,' 'Marquis,' 'Merit,' 'Midnight,' 'Nugget,' 'NuGlade,' 'Ram I' and 'Sebring' demonstrated improved shade tolerance. The 2005 NTEP Kentucky Bluegrass Test is being conducted at the University of Tennessee Knoxville Research and Education Center.

Varietal Categories and Classifications

Kentucky bluegrasses are grouped into three general categories: I. Elite turf types; II. BVMG turf types; and III. Common types. Before the variety Merion was released in 1947, Common-type Kentucky bluegrasses (Category III) were the major type used for turf in the United States. Classifications of the turf-type Kentucky bluegrasses (Categories I and II) include Aggressive, Bellevue, Compact, Compact-America, Compact-Midnight, Julia, Mid-Atlantic and Shamrock types.



The following classifications are summarized from charts presented by Dr. Leah Brillman, Seed Research of Oregon (http://www.sroseed.com/resources/pdfs/KentBlueClass_06.pdf), from personal observations and Rutgers University Turfgrass Proceedings. Performance and persistence may vary greatly among varieties within the same classification. This information is intended to categorize varieties according to traits and is not a list of varieties recommended for use in Tennessee.

Aggressive. This group of Kentucky bluegrasses is noted for good wear tolerance, dense aerial shoots and an accelerated lateral growth rate. Although they may eventually dominate a Kentucky bluegrass blend, these varieties often perform well as sports turfs. 'A-34,' 'Bariris,' 'Brunswick,' 'Cheetah,' 'Julius,' 'Limousine,' 'Mystic,' 'Northstar,' 'Orfeo,' 'P-104' and 'Touchdown'

are examples of aggressive-type Kentucky bluegrasses.

Bellevue. Bellevue-type Kentucky bluegrasses generally green-up early and are 'stemmy' in spring, have medium-wide leaves, and resist leaf spot and stripe smut. The aerial shoot density of varieties in this class is lower than those in many of the other classes. These Kentucky bluegrasses usually have excellent winter color. 'Banff,' 'Bellevue,' 'Classic,' 'Dawn,' 'Freedom,' 'Georgetown,' 'Haga,' 'Parade' and 'Trenton' are Bellevue-type Kentucky bluegrasses.

CELA / 'Challenger,' 'Eclipse,' 'Liberty' and 'Adelphi.' During spring green-up, the overall turfgrass quality of varieties in this class is generally better than that of the compact types. These varieties are resistant to leaf spot and stripe smut, and are usually less stemmy than Bellevue. Winter performance varies among the CELA-type Kentucky bluegrasses. Challenger, Eclipse, 'Jefferson,' Liberty, and 'Rambo' are CELA-type Kentucky bluegrasses.

Cheri. Characteristics of Cheri-type Kentucky bluegrasses include good overall turfgrass quality, medium leaf width and stand density, medium-low growth, good sod strength and stripe smut resistance, and moderate winter dormancy. These varieties often yield large quantities of seed and are less stemmy than BVMG-type Kentucky bluegrasses. The varieties 'Cheri,' 'Cobalt,' 'Serene' and 'Sydsport' are Cheri-type Kentucky bluegrasses.

Compact. These varieties are generally lower-growing and more compact than other bluegrasses. Compact types tend to resist leaf spot and, when maintained at a 1/2-inch mowing height, can be very high in overall turfgrass quality. Plants may turn purple while dormant in winter. Persistence and summer performance vary among varieties in this class. 'Amazon,' 'Apex,' 'Ascot,' 'Blacksburg,' 'Blackstone,' 'Blue Maxx,' 'Blue-tastic,' 'Broadway,' 'Chicago II,' 'Diva,' 'Glade,' 'Goldstar,' 'Golden Nugget,' 'Hallmark,' 'Indigo,' 'Moonlight,' 'Moonshadow,' 'Nugget,' 'Platini,' 'Ram 1,' 'Skye' and 'Wildwood' are examples of compact-type Kentucky bluegrasses.

Compact America. These varieties share characteristics of the Compact-type Kentucky bluegrasses, are dense, have fine leaf texture and tolerate medium shade. They usually recover well from winter dormancy, and resist powdery mildew and summer patch. America, 'Apollo,' 'Arrow,' 'Bedazzled,' 'Bordeaux,' 'Boutique,' 'Brilliant,' 'Dynamo,' 'Glenmont,' 'Kingfisher,' 'Langara,'

'Mallard,' 'Royale,' 'Showcase,' 'SR2284,' Sonoma and 'Unique' are classified as Compact-America-type Kentucky bluegrasses.

Compact Midnight. Varieties in the Compact-Midnight Class share those characteristics of the Compact Class, are very dark green and, although they don't usually resume growth until late spring, tolerate high temperatures. These varieties may be susceptible to powdery mildew, summer patch and rust. Absolute, 'Alexa,' 'Arcadia,' 'Award,' 'Awesome,' 'Barrister,' 'Beyond,' 'Blue Velvet,' 'Bluestone,' 'Courtyard,' 'Everest,' 'EverGlade,' 'Excursion,' 'Freedom II,' 'Freedom III,' 'Ginney,' 'Impact, Liberator, Midnight, 'Midnight II,' 'Midnight Star,' 'NuDestiny,' NuGlade, 'Odyssey,' 'Perfection,' 'Quantum Leap,' 'Rugby II,' 'Rhythm,' 'Total Eclipse' and 'Tsunami' are Compact-Midnight-type Kentucky bluegrasses.

Julia. Bluegrasses in this category are usually wear-tolerant, dense, high in overall turfgrass quality, and resistant to leaf spot and stripe smut. Most perform well in the summer. The varieties 'Avalanche,' 'Rampart' and 'Ulysses' have improved brown patch and dollar spot resistance. 'Caliber,' 'Ikone' and 'Julia' are also Julia-type Kentucky bluegrasses.

Mid-Atlantic. Varieties in this class are valued for their vigorous growth rate, strong rhizomes and extensive root systems. They usually perform well in winter, green-up in early spring, are tolerant of summer stresses and recover quickly from disease. The variety 'Preakness' has improved leaf spot resistance. Other Mid-Atlantic types include Cabernet, 'Eagleton,' 'Livingston,' Monopoly, Plush and Wabash.

Shamrock. Strong, well-developed rhizomes contribute to the improved sod strength and good overall turfgrass quality of these Kentucky bluegrasses. Shamrock-type Kentucky bluegrasses generally resist leaf spot, maintain green color during winter, are less stemmy than BVMG types and produce large amounts of seed. Summer performance varies among varieties. 'Atlantis,' 'Brooklawn,' 'Champagne,' 'Champlain,' 'Durham,' 'Lakeshore,' 'Mongoose,' 'Moonshine,' Parkland, 'Shamrock' and 'SR2100' are Shamrock-type Kentucky bluegrass varieties.

Other. Additional research is needed to classify varieties in this group. The characteristics of these varieties are most often intermediate among the other classes. 'Allure,' 'Ascot,' 'Baronie,' 'Bartitia,' Barisis, 'Baritone, 'Baruzo,' 'Blackstone,' 'Blue Ridge,' 'Bronco,' 'Canterbury,' 'Chicago,' 'Cardiff,' 'Chateau,' 'Chelsea,' 'Compact,' 'Coventry,' 'Cynthia,' 'Explorer,' 'Jewel,' 'Lily,' 'Markham,'

'Misty,' 'Monte Carlo,' 'NuStar,' 'Rita,' 'Sebring,' 'Sodnet,' 'Washington and 'Yvette' are examples of varieties in this class.

BVMG / 'Baron,' Victa, Merit, & 'Gnoma.' Kentucky bluegrasses in this class have medium-wide leaves, a medium-low plant height and usually yield large amounts of seed. Many of these varieties may be prone to stripe smut. Turfs of BVMG Kentucky bluegrasses tend to be 'stemmy' and perform poorly during cold winter months. 'Abbey,' Baron, 'BlueChip,' 'BlueStar,' 'Cannon,' 'Clearwater,' 'Crest,' 'Dragon,' 'Envicta,' 'Fortuna,' Gnoma, 'Goldrush,' Marquis, Merit, 'Nassau,' 'Raven,' and Victa are classified as BVMG-type Kentucky bluegrasses.

Common. These upright, narrow-leaf varieties are often used to stabilize and conserve soils in the Midwest. High temperatures and drought may induce summer dormancy. Many Common-type Kentucky bluegrasses set seed earlier than other varieties. Plants are usually prone to leaf spot and discolor during cold winter months. 'Alene,' Argyle, Cache, 'Garfield,' 'Geary,' 'Ginger,' 'Greenley,' 'Huntsville,' Kenblue, Newport, Park, Piedmont, 'Ronde,' 'S-21,' South Dakota, 'Voyager' and 'Wellington' are classified as Common Kentucky bluegrasses.

Seed Blends

Most seed distributors in Tennessee study the performance of individual varieties entered in the NTEP Kentucky Bluegrass Test. Many blend only those varieties that are compatible and perform best at sites located in the northern turfgrass transition zone. Turf quality often suffers when mid-level-performing Kentucky bluegrass varieties are blended with high-performance varieties. Similarly, blending an aggressive, medium-dense, medium-green variety developed with sports turfs in mind with a slow-growing, dark-green and compact variety intended for use on dense, intensely managed golf course fairways and lawns often results in a problematic, non-uniform turf.



Rough Bluegrass

Rough bluegrass, also referred to as roughstalk bluegrass, is a native of northern Europe. This yellow-green, fine-textured species produces stolons and is more tolerant of low temperatures and shade than Kentucky bluegrass. Rough bluegrass has poor heat and drought tolerance and is usually short-lived in the South, where it is sometimes used as a component of seed mixtures for shade and for over-seeding dormant bermudagrass. Rough bluegrass can occur as a weed, particularly during summer, on sites receiving full sunlight. Improved varieties include 'Barivierra,' 'Colt,' 'Cypress,' 'Laser,' 'Proam,' 'Sabre,' 'Sabre II,' 'Snowbird' and 'Winterplay.'

Hybrid Bluegrass

Turfgrass breeders have recently developed hybrid bluegrass, commonly referred to as heat-tolerant or HT bluegrass, from a heat- and drought-tolerant species



Thermal Blue HT Bluegrass

(*Poa arachifera* Torr.) that is native to Texas and Kentucky bluegrass (*Poa pratensis* L.). 'Reveille,' the first hybrid between Texas and Kentucky bluegrass registered in the U.S., was released (Texas AES) in 2000. The variety was developed by Dr. James Read in 1990 from a Texas bluegrass plant found in a remnant prairie near Dallas, TX and 'Huntsville' Kentucky bluegrass. Reveille is a medium-textured, medium-green variety that is resistant to powdery mildew and fall armyworms.

It is susceptible to brown patch and is moderately resistant to rust. Reveille is well-adapted to lawns in southern Oklahoma and central Texas maintained at a mowing height from 1½ to 2½ inches and fertilized with 4 to 6 pounds of N per 1,000 sq. ft. annually. The water requirement of Reveille is similar to 'Common' bermudagrass. Reveille is more tolerant of heat and drought than many turf-type tall fescues and performs similarly in shade. A recent release, 'Thermal Blue' (The Scotts Company), has relatively wide leaves and maintains quality with minimal N fertility, water and maintenance intensity. Thermal Blue is similar in overall quality to the Kentucky bluegrass varieties 'Coventry,' 'Jefferson,' 'Limousine' and 'Baronie.' The leaf texture of Thermal Blue resembles that of medium-coarse textured varieties of Kentucky bluegrass such as Abbey, 'Blacksburg II,' Moonlight and Raven. Other hybrid bluegrasses now available include 'Bandera,' 'Dura Blue,' Fahrenheit 90,' 'Fire and Ice,' 'Longhorn,' 'Solar Green' and 'Thermal Blue Blaze.'

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