



Turfgrass Species and Cultivar Selection

Suleiman Bughrara
Department of Crop and Soil Sciences, Michigan State University

It is important to select a grass species cultivar that is well adapted to the area, able to perform well and well suited to the intended level of management. In Michigan, Kentucky bluegrass, perennial ryegrass, tall fescue, fine-leaf fescue and creeping bentgrass are the most commonly used turfgrasses. These species vary in their characteristics, site adaptations and management requirements. This bulletin describes the species and recommends cultivars on the basis of National Turfgrass Evaluation Program testing done at the Hancock Turfgrass Research Center at Michigan State University. All the cultivars are commercially available.

Kentucky Bluegrass



Characteristics: Kentucky bluegrass forms a fine- to medium-textured turf that is green to dark green and has good density. It is an aggressive sod-forming grass that allows rapid recovery from injury because of its rhizomatous (spread by underground stems) growth habit.

Adaptation: Kentucky bluegrass does best on a sunny to lightly shaded site that is well-drained and moist with neutral to slightly acidic soil and a moderate to high level of soil fertility. This species grows rapidly during cool, moist weather. Hot, dry weather can cause it to become dormant. Seed germination and grass establishment are slow, and weeds may become a problem if an area is seeded in late spring or early summer. Kentucky bluegrass can be established from seed or sod with equal success.

Management requirements: Kentucky bluegrass requires medium to high levels of management, depending on the cultivar used. Kentucky bluegrass requires 2 to 6 pounds of nitrogen per 1,000 square feet per growing season and 1 to 1 1/2 inches of water per week during the growing season to maintain high-quality turf. The recommended mowing height is 2 to 3 inches. Vigorous cultivars growing under high fertility tend to produce thatch and develop insect problems. Leaf spot, stripe smut, patches and necrotic ring disease can be problems, depending on cultivar management level and growth environment. Kentucky bluegrass is widely used for lawns, golf turf (except greens), athletic fields (because of its recuperative potential) and other general-purpose turfs. For better turfgrass performance, a blend of two to four Kentucky bluegrass cultivars should be used.

Top-performing Kentucky bluegrass cultivars:

A 96-451	Blackstone	J-1838	Serene
Absolute†	Blue Knight	Langara	Total Eclipse
Alpine	Bluestone	Midnight II	Tsunami
Award	Boutique	Moon Shadow	Unique
Bartitia†	Excursion	North Star	
Barrister	Freedom II	Nuglade	
Bedazzled	Impact	Rugby II	

†Cultivar performed well at our Traverse City testing plots.

Rough Bluegrass

Characteristics: Rough bluegrass forms light green turf and adapts well to moist, shaded areas but has poor traffic tolerance and poor tolerance for hot or dry conditions. It is useful for wet, shady sites where fine-leafed fescue will not persist.

Perennial Ryegrass



Characteristics: Its fine texture, with good density and uniformity, is similar to that of Kentucky bluegrass, but seed germination and establishment occur more rapidly with perennial ryegrass. It has a bunch-type (gradual increase in clump size) growth habit.

Adaptation: Perennial ryegrass is adapted to well-drained, moist, neutral to slightly acidic soil with medium to high soil fertility. It requires full sun. Perennial ryegrass has poor tolerance to excessive heat, cold and drought. It performs better in a cool environment without extreme winter or summer temperatures.

Management requirements: Levels of management required are moderate to high, depending on cultivar and use. Mowing height is 2 to 3 inches. Apply 2 to 6 pounds of nitrogen per 1,000 square feet per growing season. Perennial ryegrass requires 1 to 1 1/2 inches of water per week during the growing season to maintain green and active growth. Thatch is not a major problem because of its bunch-type growth habit. Some cultivars are susceptible to disease, especially red thread and pythium blight. Recuperative ability is poor.

Top-performing perennial ryegrass cultivars:

Amazing	Gator 3	Paragon
Applaud	Grand Slam	Pentium
Blazer IV	Inspire	Pick Prngs
Charismatic	Mach 1	Pinnacle II
Citation Fore	Majesty	Premier II
Elfkin	Manhattan 4	

Tall Fescue



Characteristics: Tall fescue has a medium-coarse to coarse texture, low density and a bunch-type growth habit.

Adaptation: Tall fescue tolerates low soil fertility and persists well under low maintenance. It possesses good insect (European chafer) and disease tolerance under Michigan conditions and tolerates some shade. It is useful in the transition zone between warm-season and cold-season grasses. It even tolerates short periods of submersion.

Management requirements: Tall fescue requires low to moderate levels of management. Mowing frequency depends on use. Mowing height is 2 to 3½ inches. Apply 2 to 3 pounds of nitrogen per 1,000 square feet per growing season. It has excellent wear tolerance but poor recuperative ability. Established tall fescue has good drought tolerance and will remain green through most Michigan summers without supplemental irrigation. Juvenile tall fescue seedlings are not cold tolerant and may experience winterkill. Established tall fescue, however, will endure most Michigan winters. Thatch is not a problem because of its bunch-type growth habit. Brown patch can be a disease problem during dry summers of some years.

Top-performing tall fescue cultivars:

Avenger	Focus	Plantation
Barlexas	Forte	Proseeds
Biltmore	Grande II	Rebel Exeda
Bingo	Inferno	2nd Millennium
Blackwatch	Justice	SR 8550
Falcon IV (F-4)	Kalahari	

Fine-leaf Fescue



Characteristics: This species is a fine-leaved turfgrass with good density and uniformity. Creeping red fescue, sheep fescue and Chewings fescue turfs are medium to dark green. Sheep fescue tends to be distinctively blue green; hard fescue is gray-green. Red fescue grows from rhizomes; the other species are bunch-type grasses.

Adaptation: Creeping red, Chewings and hard fescue are the best turfgrasses for dry, moderately shaded areas and infertile, acidic soil. The fine fescues require well-drained, slightly dry soils and minimum levels of management. They are often mixed with Kentucky bluegrass and perennial ryegrass for planting dry shaded areas. In Michigan, fine fescue is seldom seeded alone or used as a primary species where conditions favor establishment and maintenance of other grass selection. Because it has poor traffic tolerance, its use in heavily trafficked areas or athletic fields should be avoided. Sheep fescue is used commonly in landscape settings.

Management requirements: Fine-leaf fescue has a low management requirement. Mowing height is 2 to 3 inches. Avoid mowing during dry, hot weather. Apply 1 to 2 pounds of nitrogen per 1,000 square feet per growing season as needed. Irrigate as necessary. Note that red fine-leaf fescue can form thatch and develop disease when grown in moist areas of high fertility.

Top-performing fine-leaf fescue cultivars:

Sheep fescue: Quatro

Chewings fescue:

Ambassador	Brittany	PST-4HM
------------	----------	---------

Banner III	Longfellow II	Shadow
------------	---------------	--------

Hard fescue:

ABT-HF1	Minotaur	Scaldis II
---------	----------	------------

ABT-HF4	Nordic	Stonehenge
---------	--------	------------

Berkshire	Reliant II	
-----------	------------	--

Creeping red fescue:

Dawson E+ (our research showed susceptibility to European chafer damage)

Eureka II	Jasper II	
-----------	-----------	--

Creeping Bentgrass



Characteristics: This species is extremely fine textured with high density and uniformity. It is tolerant of extremely low cutting heights. It has a stoloniferous (spread by aboveground stems) growth habit.

Adaptation: Creeping bentgrass is adapted to well-drained, moist, slightly acidic, fertile soil. It is often grown on pure sand modified with organic matter. It grows well in full sun to light shade and it tolerates cold but will not tolerate drought.

Management requirements: High levels of management are necessary. Apply 4 to 8 pounds of nitrogen per 1,000 square feet per growing season (the quantity applied may vary, depending on its use). It requires frequent mowing and will tolerate low mowing heights. It is usually maintained at mowing heights of 0.1 to 0.5 inch, depending on use and site. It requires topdressing and fungicide applications for disease control. Cultural practices are so expensive and time consuming that most Michigan homeowners should not invest in a bentgrass lawn. The primary use of bentgrass in Michigan is on golf courses. If bentgrass is found in a home lawn, it is usually considered a weed.

Top-performing cultivars: For cultivar recommendations, see Extension bulletin E-2910, "Establishing a New Lawn Using Seed."

Turfgrass Mixtures

Kentucky Bluegrass and Fine-leaf Fescue

Mixtures — such as 85 to 90 percent Kentucky bluegrass and 10 to 15 percent fine-leaf fescue — are recommended for shady areas with low fertility, areas prone to frequent moisture stress or areas with low management. For better results, perennial ryegrass can be added to the mixture.

Turfgrass Species and Cultivar Selection

Kentucky Bluegrass and Perennial Ryegrass

This mixture is recommended when quick cover is needed for aesthetic reasons or erosion control; when seeding in the summer; when Kentucky bluegrass is difficult to establish alone; or when irrigation is not available. Perennial ryegrass should never constitute more than 50 percent of the mixture by weight.

Kentucky Bluegrass and Tall Fescue

This mixture is recommended for high-traffic areas or areas receiving minimum management. Tall fescue must be the predominant species, making up at least 80 percent of the mixture. Areas seeded with this mixture should be maintained with low rates of nitrogen fertiliz-

er. If the seeding areas receive high fertilization rates and more frequent irrigation, the Kentucky bluegrass will dominate the stand, leaving scattered bunches of tall fescue. This mixture is commonly used on playgrounds, park areas, athletic field and roadsides. When overseeding is required, tall fescue seed should be used.

Avoid turfgrass mixtures containing:

Annual ryegrass	Orchardgrass
KY 31 (coarse-leaf tall fescue)	Redtop
Linn (perennial ryegrass cultivar)	Timothy

Sources of Seed

The following list of seed companies is included to help the reader who may not be able to find sources of some varieties of seed — it is not intended as a recommendation of these companies, or as an inclusive/exclusive listing.

CSI/GEOTURF INC. 1225 76th Street Byron Center, MI 49315 Phone: 888-208-5772	J. MOLLEMA & SONS 4660 E. Paris, S.E. Grand Rapids, MI 49512 Phone: 800-234-4769	MICHIGAN STATE SEED SOLUTIONS 717 N. Clinton Grand Ledge, MI 48837 Phone: 800-647-8873, 517-627-2164	RHINO SEED AND LANDSCAPE SUPPLY 850 Old US-23 Brighton, MI 48114 Phone: 810-632-5640
SOUTHERN MICHIGAN SEED 48580 County Road 352 Decatur, MI 49045 Phone: 269-423-7051	STANDISH MILLING COMPANY INC. 1331 West Cedar Street Standish, MI 48658 Phone: 989-846-6911	SWEENEY SEED COMPANY 110 South Washington Street Mount Pleasant, MI 48858 Phone: 800-344-2482	TRI TURF 3751 Blair Townhall Road Traverse City, MI 49684 Phone: 800-636-7039

Other Publications in this Series

(The following publications and other materials on lawns, turfgrasses and related topics are available online at: www.web2.msue.msu.edu/bulletins/intro.cfm or from your MSU county Extension office — look under “Government, County” in your phone book.)

E-2910, Establishing a New Lawn Using Seed

E-2911, Nine Steps for Establishing a New Lawn Using Sod

E-2913, Calendar for Lawn Care

E-2917, Performance of Bentgrass Cultivars and Selection Under Putting Green and Fairway Conditions (for golf courses)

E-2923, Performance of Tall Fescue Turfgrass Cultivars for 2002-03

E-2924, Performance of Kentucky Bluegrass Cultivars

For more materials available online, visit the MSU Extension Web site at:

<http://web2.msue.msu.edu/bulletins/intro.cfm>



MSU is an affirmative-action equal-opportunity institution. Michigan State University Extension programs and materials are open to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, marital status, or family status. ■ Issued in furtherance of Extension work in agriculture and home economics, acts of May 8 and June 20, 1914, in cooperation with the U.S. Department of Agriculture. Margaret A. Bethel, Extension director, Michigan State University, E. Lansing, MI 48824. ■ This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned. This bulletin becomes public property upon publication and may be printed verbatim with credit to MSU. Reprinting cannot be used to

endorse or advertise a commercial product or company. **New 6/04-5M-KMF/BRD, 60¢**