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.

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

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 3 1/2 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
- Barlexas
- Biltmore
- Bingo
- Blackwatch
- Falcon IV (F-4)
- Focus
- Forte
- Grande II
- Inferno
- Justice
- Kalahari
- Plantation
- Proseeds
- Rebel Exeda
- 2nd Millennium
- SR 8550
Fine-leaf Fescue

Characteristics: This species is a fine-leafed 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 fertilizer. 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.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone</th>
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<tr>
<td>CSI/GEOTURF INC.</td>
<td>1225 76th Street</td>
<td>888-208-5772</td>
</tr>
<tr>
<td>J. MOLLEMA &amp; SONS</td>
<td>4660 E. Paris, S.E.</td>
<td>800-234-4769</td>
</tr>
<tr>
<td>MICHIGAN STATE SEED SOLUTIONS</td>
<td>717 N. Clinton</td>
<td>800-647-8873, 517-627-2164</td>
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<tr>
<td>RHINO SEED AND LANDSCAPE SUPPLY</td>
<td>850 Old US-23</td>
<td>810-632-5640</td>
</tr>
<tr>
<td>SOUTHERN MICHIGAN SEED</td>
<td>48580 County Road 352</td>
<td>269-423-7051</td>
</tr>
<tr>
<td>STANDISH MILLING COMPANY INC.</td>
<td>1331 West Cedar Street</td>
<td>989-846-6911</td>
</tr>
<tr>
<td>SWEENEY SEED COMPANY</td>
<td>110 South Washington Street</td>
<td>800-344-2482</td>
</tr>
<tr>
<td>TRI TURF</td>
<td>3751 Blair Townhall Road</td>
<td>800-636-7039</td>
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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

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