



Turfgrass Selection

MF2032

Turfgrass selections are among the most important decisions a turf manager makes. Grasses that are well-suited to the environment are more likely to exhibit desirable aesthetic characteristics and perform as intended. They require less care and maintenance and are more resistant to pests and diseases.

In Kansas, choosing the right turfgrass is more complicated than usual. The state has hot summers and cold winters, a variety of soils and rainfall averages, and is centrally located on the transition zone of North America where both warm-season and cool-season grasses grow. Warm-season grasses grow best during the summer, while cool-season grasses grow best during the spring and fall.

Visual qualities such as color, leaf texture, and density, weigh heavily in the selection decision. Intended use, cultural requirements, pest resistance, and stress tolerance are important, too. Key attributes differ depending on the situation. For golf courses, it is important to select grasses that can be mowed short. Athletic fields must be able to withstand wear and tear. Grasses planted in low-maintenance areas should get by with minimal mowing, watering, and fertilizing.

There is not one best grass for all purposes or a perfect grass for any one purpose. Successful turfgrass selection is a matter of choosing a grass that best fits the requirements of the particular situation. The following information is meant to guide you in making that determination.

<p>Cool-Season Grasses Optimum temperature: 60–75°F Plant: September Mow: April–November Water: Spring–Fall Fertilize: May, September–November</p> <p>Most common: Kentucky bluegrass, perennial ryegrass, tall fescue Fine fescues: Chewings fescue, hard fescue, sheep fescue, red fescue. Other: bentgrass</p>	<p>Warm-Season Grasses Optimum temperature: 85–90° F Planting: May, June Mowing: May–September Watering: Summer Fertilizing: May–August</p> <p>Most common: bermudagrass, buffalograss, and zoysiagrass Native grasses: bluestem, grama, Indiangrass, lovegrass, and switchgrass</p>
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Individual varieties within species provide options for matching grasses with growing conditions, management level, and desired performance. Varieties suitable for Kansas are identified in field trials conducted at locations around the state. K-State researchers evaluate the performance of selected varieties on color, density, uniformity, texture, and resistance to disease or environmental stress using uniform testing procedures set by the National Turfgrass Evaluation Program (NTEP). A complete list of turfgrass varieties and performance data for Kansas can be found on the [program's website](#).

Turfgrass Use

	Residential Lawns	General Grounds	Sports Fields	Golf Courses				Native Areas
				Putting Greens Tees	Tees	Fairways	Roughs	
Bermudagrass	▲	▲	▲		▲	▲	▲	
Buffalograss	▲	▲	▲			▲	▲	▲
Zoysiagrass	▲	▲			▲	▲	▲	
Creeping bentgrass				▲		▲		
Kentucky bluegrass	▲	▲	▲		▲	▲	▲	
Perennial ryegrass			▲		▲	▲	▲	
Blue/rye mix			▲		▲	▲	▲	
Tall fescue	▲	▲	▲				▲	
Native grasses								▲

Growth Characteristics

	Growth Season	Growth Habit	Leaf Texture	Natural Color
Bermudagrass	WS	spreading	medium	medium green
Buffalograss	WS	spreading	medium	gray green
Zoysiagrass	WS	spreading	medium	light green
Creeping bentgrass	CS	spreading	fine	medium green
Kentucky bluegrass	CS	spreading	medium	dark green
Perennial ryegrass	CS	bunch	medium	dark green
Tall fescue	CS	bunch	medium-coarse	medium green

CS=Cool-season WS=Warm-season

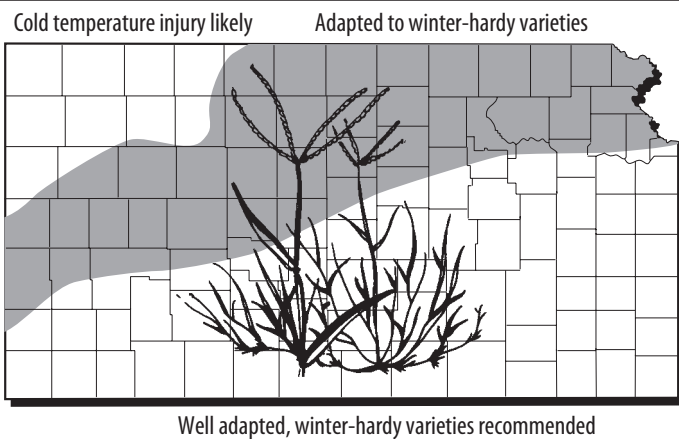
Environmental Tolerances

	Shade	Drought	Heat	Cold	Wear
Bermudagrass	poor	excellent	excellent	poor-fair	excellent
Buffalograss	poor	excellent	excellent	very good	fair
Zoysiagrass	fair	good	excellent	good	excellent
Creeping bentgrass	poor	poor	fair	excellent	fair
Kentucky bluegrass	fair	good	fair	excellent	good
Perennial ryegrass	fair	poor	poor	good	good
Tall fescue	very good	very good	very good	good	good
Fine fescue	excellent	good	poor	excellent	poor

Culture

	Mowing	Irrigation	Nitrogen	Thatch
Bermudagrass	medium	low	medium	moderate
Buffalograss	low	low	low	light
Zoysiagrass	low	low	low	heavy
Creeping bentgrass	high	high	high	heavy
Kentucky bluegrass	medium	high	medium	moderate
Perennial ryegrass	medium	high	medium	light
Tall fescue	high	medium	medium	light

Bermudagrass



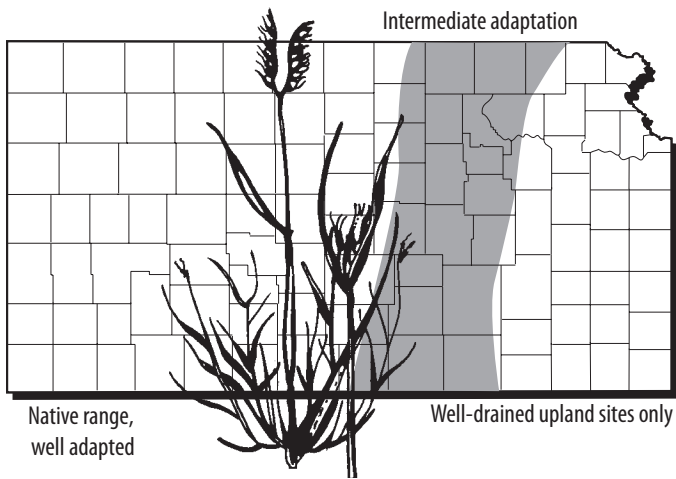
Bermudagrass is an attractive, medium-textured, dense turf that can be mowed short. It matches buffalograss in resistance to heat and drought and its low water requirement. Bermudagrass is superior in its ability to

recover from heavy use during hot weather, making it the top choice for summer sports use. With a growth structure that includes both rhizomes and stolons, it is a good choice for erosion control and slope stabilization.

Kansas is at the northern edge of the zone for which bermudagrass is adapted, so it is important to select cold-tolerant varieties that must be planted by vegetative means. Seeded varieties are not as winter-hardy but work well in southern Kansas.

A disadvantage of bermudagrass is late spring greenup and early fall dormancy. When bermudagrass is planted next to ornamentals and gardens, invasive growth of rhizomes and stolons is a problem and may require cultural or chemical control. Bermudagrass has poor shade tolerance.

Buffalograss

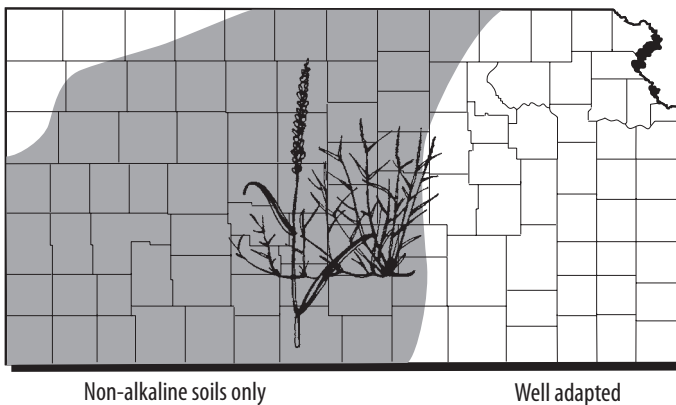


Buffalograss is the only native grass commonly used for turfgrass in Kansas. It grows best in the western half of the state where average rainfall is less than 26 inches a year. In other areas, well-drained upland sites should be selected. Buffalograss has gained in popularity because of its low water requirement. Weeds are the biggest problem and result from improper management. Buffalograss has grown on the prairies since the Ice Age with no care.

Buffalograss should be grown in full sun with as little water and fertilizer as possible. Manage for natural gray-green prairie grass appearance and do not try to make it look like bluegrass. The natural color of buffalograss is appropriate for many settings.

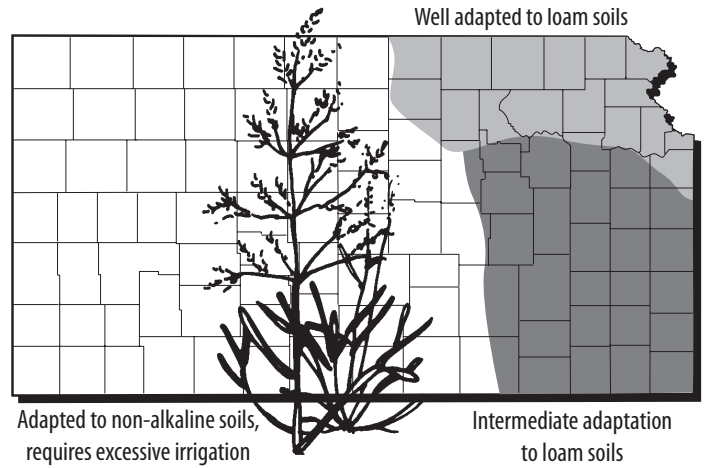
Zoysiagrass

Cold temperature injury likely



Zoysiagrass looks similar to bermudagrass but used mainly for golf courses and home lawns. Established zoysiagrass forms a dense, stiff, wear-resistant turf. It can be managed like buffalograss for a low-maintenance turf. Slow to establish, zoysiagrass can take up to two years to achieve uniform coverage. Although wear-resistant, it is slow to recover from injury. Zoysiagrass produces thatch, especially if watered and fertilized excessively. It tolerates shade better than bermudagrass or buffalograss, but turf becomes thinner as shade increases. Zoysiagrass develops iron chlorosis on high pH soils, as do many turfgrass species.

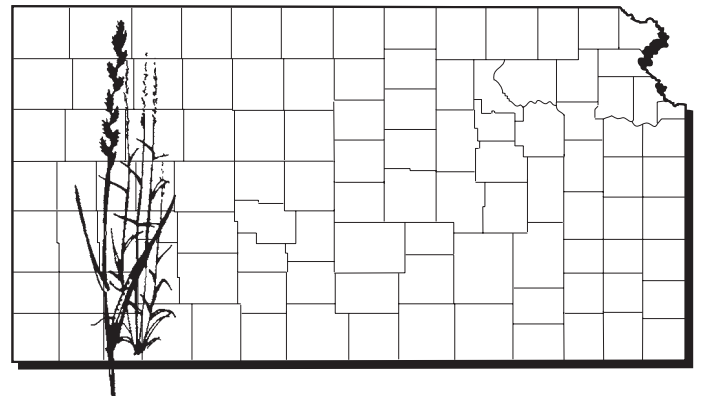
Kentucky Bluegrass



Kentucky bluegrass forms a high-quality turf because its fine, soft, glossy-green leaves cut cleanly when mowed. Bluegrass develops a dense, true sod from rhizomes but does not spread aggressively into unwanted areas. This grass is best adapted to northeast Kansas but grows statewide in well-drained loam soils. It is not well adapted to shallow, clay, compacted, or extremely acid or alkaline soils. Bluegrass is susceptible to a number of diseases and tends to form thatch. Bluegrass works well as long as the area has good soil.

Perennial Ryegrass

Adapted statewide, non-alkaline soils, sensitive to high, low temperatures and drought

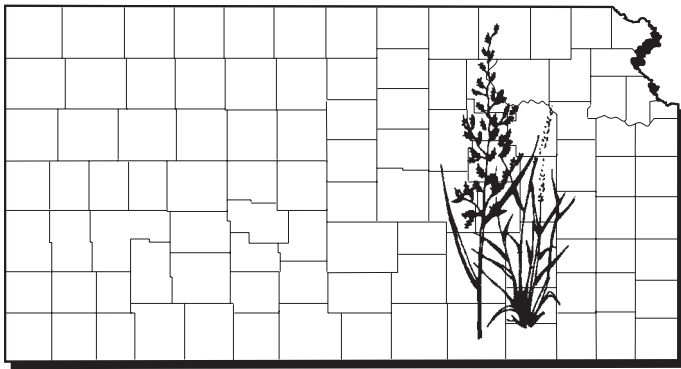


Ryegrass looks similar to bluegrass but is a bunchgrass that spreads by rhizomes. The two can be mixed in a turf to gain the advantages of both. Ryegrass is used mainly for sports fields and golf courses.

Ryegrass establishes quickly from seed and forms a usable turf faster than other grasses. Ryegrass is used to overseed warm-season grasses to extend the season of use and color. Ryegrass is less tolerant to heat and drought and has more disease problems than other major turfgrasses in Kansas. A large number of varieties are available.

Tall Fescue

Adapted statewide



Tall fescue is the most commonly used and widely adapted turfgrass in Kansas, but it is not the perfect turfgrass or the best choice for every situation. Tall fescue starts quickly from seed and forms a turf in a short period of time. It grows in a variety of soils and is the most heat- and drought-resistant of the cool-season grasses.

Brown patch is a major disease problem of tall fescue. Some people may object to the coarse, stiff foliage with rough edges. Tall fescue is a bunchgrass. It is important to maintain proper density to keep it from becoming thin and clumpy.

There are three categories of tall fescue: pasture types, turf types (non-dwarf), and slower growing turf types (commonly called dwarf). Pasture types include K-31, Alta, and Fawn varieties developed for rapid foliage growth. They have broad, upright, fast-growing leaves with a high crown. They are still used for large, low-maintenance areas because of the low cost of seed and ability to grow with little or no irrigation.

Turf-type tall fescues are darker green, finer textured, with leaves that grow less upright and a flatter crown. Turf-type tall fescue may be called fine fescue by mistake. With more than 100 turf-type varieties, tall fescue is the species most commonly used for quality turfgrass in Kansas.

Recommended varieties are selected for adaptation to Kansas, visual quality, and resistance to brown patch.

The advantage of “dwarf” tall fescue is slower growth and less frequent mowing. The texture of some varieties approaches that of bluegrass, but they are more susceptible to disease and less drought-tolerant than turf-type tall fescues.

Blends—Premixed varieties are available as blends under brand names, or individual varieties can be purchased separately and mixed together. Blends offer genetic diversity and can be an advantage if all varieties are good performers. If there is one weak variety, the advantage of blending is debatable.

Example:

50% ‘Rebel II’ tall fescue
50% ‘Shenandoah’ tall fescue

Mix—A mix is a combination of two or more grass species.

Examples:

80% Kentucky bluegrass
20% Perennial ryegrass

90% Tall fescue
10% Kentucky bluegrass

Soil pH is a direct measure of soluble acids. It controls the nutrient intake of the plant.

Soil pH

	Tolerance Range	Preferred
Bermudagrass	5.5-7.5	6.0-7.0
Buffalograss	6.0-8.0	6.0-7.0
Zoysiagrass	5.0-7.8	6.0-6.5
Annual ryegrass	6.0-7.5	6.0-7.0
Creeping bentgrass	5.5-7.2	5.5-6.5
Kentucky bluegrass	6.0-7.2	6.0-7.0
Perennial ryegrass	6.0-7.5	6.0-7.0
Tall fescue	4.75-8.5	5.5-6.5
Fine fescue	5.5-7.0	5.5-6.5

Jared Hoyle, Turfgrass Specialist

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