
SELECTION OF GRASSES

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In selecting turfgrasses for establishment of a lawn, it is necessary to consider the species that will be best adapted to the environmental conditions and to the intended use and maintenance level of a particular site. Grasses vary in their tolerance of ranges of soil moisture, pH and fertility, and temperatures. They may also vary in their resistance to stresses caused by excessive wear, mowing, and insects and diseases. In the Northeast, there are many species of cool season grasses (characterized by maximum growth in cool spring and fall and semi-dormant during hot and/or dry periods of summer) that can be used alone or in mixtures to produce a dense lawn. The principal species of cool season grasses for lawns are: Kentucky bluegrass; perennial ryegrass; tall fescue; and fine fescues (creeping red, Chewings, and hard). Creeping bentgrass is a cool season grass used for very closely mown, high maintenance playing surfaces such as putting greens or croquet courts. It is seldom an appropriate grass for a lawn. Cultivars within each species offer further options for selection of improved aesthetic and resistance qualities.

Furthermore, certain cultivars of perennial ryegrass, tall fescue, and fine fescues contain fungal endophytes. An endophyte is a fungus living inside these grasses which enhances the qualities of the turf without being visible on the surface. Endophytic grasses have a high tolerance for environmental stresses and may perform well under low maintenance regimes. In addition, endophytic grasses have resistance to leaf-feeding insects such as billbugs, sod webworms, and chinchbugs.

KENTUCKY BLUEGRASS

Kentucky bluegrass has a fine to medium leaf texture and a dark green color. Its tendency to spread by the formation of rhizomes (underground stems) allows for good sod-forming characteristics. Tolerance is high for cold and wear, and moderate for heat and drought. The grass becomes semi-dormant during extended hot and dry conditions. It will recover quickly in cooler temperatures and moisture provided the drought was not severe. Kentucky bluegrass is best grown in well drained, sunny areas. It requires a higher amount of N fertilizer (2-4 lb. N/1000 sq.ft. per growing season) than other cool season lawn grasses and may produce a significant amount of thatch. Kentucky bluegrass is particularly susceptible to such diseases as leaf spot, dollar spot, stripe smut, necrotic ring spot, and summer patch. Some newer cultivars do show some disease resistance.

PERENNIAL RYEGRASS

Perennial ryegrass has a fine to medium leaf texture and tends to be dark green. It germinates rapidly and is quick to establish, making it suitable for overseeding. It may be competitive with other grasses, however, and so is sometimes used either alone or in combinations of about 20% perennial ryegrass mixtures with Kentucky bluegrass or fine fescues. It is wear and heat tolerant but will not withstand shade and drought well. It is

susceptible to ice cover injury. Perennial ryegrass does best on well drained soils with moderate fertility. The nitrogen requirement for perennial ryegrass is approximately 2 - 4 lb. N/ 1000 sq. ft. per season with little thatch accumulation. Perennial ryegrass is most susceptible to diseases such as brown patch, Pythium blight, dollar spot, red thread, and rust. Several cultivars of perennial ryegrass contain beneficial fungal endophytes.

TALL FESCUES

Many new, finer textured, darker green “turf-type” varieties now make tall fescue an option for lawns. It is slow to establish and has only a fair recovery potential but is heat and drought tolerant. Tall fescue performs best in well drained soils in open, sunny areas but can withstand moderate shade. Overall, it is more shade tolerant than Kentucky bluegrass and perennial ryegrass but is less so than the fine fescues. Tall fescues require 2.5-3 lb. N/1000 sq. ft. per growing season with minimal accumulation of thatch. Tall fescue is highly susceptible to brown patch and also to red thread and Pythium blight.

FINE FESCUES

Creeping red fescue
Chewings fescue
Hard fescue

These narrow-leaf, medium to dark green grasses can be used both alone and in combination with other grasses. Each species varies somewhat in terms of growth characteristics but all are ideal for low maintenance situations. They are very tolerant of low pH and fertility, and of drought and shade. However, fine fescues do not perform well under hot, humid conditions and with high levels of fertility. Fine fescues become semi-dormant in heat and drought but recover quickly. These grasses require 1-2 lb. N / 1000 sq. ft. per growing season with a minimal production of thatch. Fine fescues are susceptible to leaf spot, red thread, and dollar spot.

MIXES AND BLENDS

A grass seed mix is made up of two or more different species of grasses. For instance, a typical home lawn seed mix may be made up of varieties of Kentucky bluegrass, perennial ryegrass and creeping red fescue. A mix is generally more adaptable to differing site conditions (shade, full sun, dry, moist). Most lawns should be made up of a mix of grasses, appropriate for the particular site. A blend is made up of two or more cultivars or varieties of the same species of grass. For instance, a blend of perennial ryegrass might be made up of three or more varieties of perennial ryegrass. Blends are often used in highly maintained lawns where extremely uniform appearance and performance are required, or for overseeding established lawns or play areas.

SPECIALTY GRASSES

There are some other cool season grasses which can be used for specific, special situations. These include:

Rough bluegrass, *Poa trivialis*. This light green grass is tolerant of shade. It requires moist, fertile soils. It is an aggressive grass, but will not tolerate heat, drought or traffic. Rough bluegrass requires approximately 2 to 4 lb. N/1000 sq. ft. per season. Because it spreads by

means of stolons (above ground stems), it can become a weed when grown with other lawn grasses.

Alkali grass, suited for high pH, or salty soils. This dark-green, medium- fine textured, cool season grass is good for use along roadsides and in areas near the coast which are subjected to salt spray. Alkali grass can tolerate regular mowing but also maintains an excellent aesthetic value in unmown situations.

Supina bluegrass, Poa supina, is a relatively high maintenance, aggressive and vigorously growing grass. It is typically light green and spreads by stolons (above ground stems). Supina bluegrass is being used and evaluated under very high traffic situations such as athletic fields.

Bentgrasses, including creeping bentgrass, are typically grown under low mown, high maintenance situations. They are the grasses of choice for putting greens, bowling greens and croquet courts. They become a weed in a higher mown lawn situation, forming “puffy” circles of grass.

Table 1.
Recommended turfgrass mixtures (and uses) for Massachusetts.

Use	Species (% by weight)	Rate (lbs/1000 ft ²)
Athletic fields	80% Kentucky bluegrass* 20% perennial ryegrass* (<i>new fields</i>)	3 to 4
	100% perennial ryegrass* (<i>overseeding key wear areas</i>)	6 to 8
Lawns-sun med. to high maint.	65 to 75% Kentucky bluegrass* 10 to 20% perennial ryegrass* 15% fine fescue**	3 to 4
Lawns-sun low maint.	65% fine fescue* 10-20% perennial ryegrass* remainder Kentucky bluegrass	4 to 6
Lawns-shade well drained	80 to 90% fine fescue* 10 to 20% perennial ryegrass*	4 to 6
	80% shade tolerant K. bluegrass* 20% perennial ryegrass*	3 to 4
Lawns-shade wet	70% 'Sabre' rough bluegrass 30% shade tolerant K. bluegrass*	2 to 3

*Two to three improved cultivars recommended.

** One or more improved cultivars recommended.

SEED SELECTION (RECOMMENDED MIXTURES)

The seed mixtures shown in **Table 1** are “recipes” for central New England for general turf areas fertilized and mowed on a regular basis, including athletic fields, home lawn turf, commercial properties, and parks and recreational areas. It is strongly recommended that each species component of a mixture contains cultivars (varieties) which have been shown to perform well in Massachusetts. The cultivars recommended for the Massachusetts area are listed in UMass Extension’s current Professional Guide for IPM in Turf for Massachusetts. At least 2 to 3 cultivars from each species of Kentucky bluegrass or perennial ryegrass should be “blended” together in formulating a mixture, and 1 or more cultivars of tall or fine leaf fescue may be blended in formulating a mixture as recommended in **Table 1**. Finally, certified seed is strongly recommended because certification is the only insurance that cultivar authenticity can be guaranteed.

Parts of this text have been adapted from: Turfgrass Species for Pennsylvania. Penn. State Cooperative Extension. Extension Circular 395.

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