

TURFGRASS SPECIES AND VARIETY SELECTION AND USE

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One of the most crucial decisions made during the establishment of a turf is the proper selection of seed or seed mixtures. Turfgrasses must be selected according to their adaptation to the particular site and intended use. Improper seed selection and/or poor seed quality will lead to poor turf. Use of a turfgrass species or variety that is not adapted to your site conditions will result in a weak, thin, and unattractive turf that is subject to soil erosion and weed encroachment. Consequently, a higher level of maintenance will be necessary to maintain a desirable lawn.

The selection of adapted varieties and mixtures of grasses is an important first step but does not guarantee long term success. In addition to adequate preparation of the seedbed, all lawns require proper maintenance (mowing, watering, fertilization, liming, dethatching, and aeration) in order to maintain turf vigor and reduce the level of stress and pest problems. Even resistant grasses can become susceptible to disease problems under poor management conditions such as close mowing, shallow or excessive irrigation, poor drainage or soil compaction, excessive thatch accumulation, and improper applications of fertilizers, lime, growth regulators and pesticides. The best time to seed cool season grasses is in the late summer or early fall. Spring seeding can also be quite successful, however, preemergence herbicides may be required to control annual weeds (esp. crabgrass).

Seed Label Information

The seed label provides important information needed to select quality seed or seed mixtures and should be read prior to purchase. All seed sold is required by law to bear a label or tag which indicates the kind and quality of the seed. The basic information found on a seed label includes:

1. Name and address of labeler.
2. Kind or kind and variety of turfgrass seed. (kind refers to species of turfgrass)
3. Percentage by weight of each species (kind) and variety.
4. Germination percentage and date of test.
5. Percentage by weight of all weed seeds.
6. Percentage by weight of other crop seed.
7. Percentage by weight inert matter.
8. Lot number.
9. Name and amount of each kind of noxious weed seed present.

The name and address indicate the party responsible for labeling the container. The commonly accepted names of the turfgrass species (kind) or species and varieties must be listed on each label in order of predominance when present in greater than 5% by weight of the contents.

The percentage by weight of pure seed of each species named must also be listed. The germination percentage for each turfgrass indicates the viability of the seed determined by test samples. The germination test date must be no more than 9 months old at the time of purchase.

The percentage of weed seed should not exceed 1.0% by weight. Undesirable grass seed cannot exceed 0.5% of the seed, but high quality seed contains no undesirable grass species. Seed containing timothy, meadow fescue, orchardgrass, tall oatgrass, or annual ryegrass is not recommended for use in turf.

The percentage of other crop seed includes all agricultural crop seed present. It is best to select seed free from other-crop seed since most coarse pasture hay grasses are not compatible with desirable turfgrasses. Inert matter refers to all material that is not seed such as chaff. Lot number identifies the original source of seed. Restricted noxious weed seed must be identified and indicates the presence of a difficult to control weed.

Grasses Not Recommended For Lawns

Some “patch kits” or quick establishment seed mixtures intended for repair of damaged areas contain a large percentage of annual ryegrass. Annual ryegrass forms a coarse, open turf and will not persist as a permanent turf. Turf-type perennial ryegrass should be used rather than annual ryegrass when rapid establishment and cover is needed to control soil erosion and dust. When rapid establishment is not as critical, the seed used for spot seeding damaged areas should be matched as closely as possible to the existing turf. This will ensure a uniform appearance between the repaired area and the surrounding turf.

Bentgrass is used for specialized turf areas (golf courses, bowling greens, croquet courts, tennis courts, etc.) and requires highly specialized maintenance and equipment. Bentgrass is not recommended for other turfgrass sites. It should be avoided in lawn type turf.

Clover

The inclusion of clover in seed mixtures is not recommended by some experts because bees may be attracted to lawn when the clover flowers. Another objection to clover arises from the difficulty in removing stains from children’s clothing. Although some opposition to the use of clover exists, clover can be useful for turfs receiving low nitrogen fertilization and minimal irrigation. The nitrogen fixing capability of clover provides some nitrogen for the turfgrasses growing in a turf/clover mixture. Clover is also relatively drought tolerant compared to some turfgrasses. The nitrogen fixing and drought tolerant characteristics of clover make it an attractive species to include in lawn seed mixtures for those interested in a “natural organic” or lower maintenance lawn. Specific seeding rates for clover are not available, however, since clover will spread through stolon growth, a low percentage of clover in a seed mixture will likely provide sufficient opportunity for clover to establish in a lawn.

Suggested Seed And Seed Mixtures

Kentucky bluegrass, fine fescues, perennial ryegrass and tall fescue are the more traditional species recommended for lawn grasses. Some suggested cool-season turfgrass seed and seed mixtures for use in establishing permanent turfs in New Jersey are listed below (Table 1). Seed and seed mixtures are listed according to commonly occurring site conditions, intended use, expected maintenance to be provided for the turf, and the potential turf quality. Seeding rates are listed in pounds per 1000 square feet. When converting to an acre basis, multiply by 43. When using a seed blend or mixture, in order to provide enough diversity, three to five unrelated varieties should be used if possible. This is especially true if Kentucky bluegrass is a component because essentially all of the seeds of a Kentucky bluegrass variety produce genetically identical plants. Using three to five varieties increases diversity and improves the overall resistance to diseases and tolerance to other pest and environmental stresses. Recommendations regarding perennial ryegrass or tall fescue specify “turf-types”. This distinguishes between the finer-textured grasses developed for high-quality turf use and the coarser-textured, “pasture-type” grasses such as ‘Kentucky 31’ and ‘Fawn’ tall fescue and less-persistent perennial ryegrass such as ‘Linn’ and ‘Nui’. The coarse-textured varieties form an open, unattractive turf.

Fine fescues can be divided into five groups; strong creeping red, slender creeping red, Chewings, hard, and sheep. Sheep fescue is generally used for low maintenance turf and not for highly managed turf. The fine fescues, especially the sheep fescues, perform well under low maintenance conditions. Higher maintenance, including moderate to high levels of nitrogen and close mowing may result in extensive turf thinning, especially during the hot, humid summer months.

Endophytes

Seed containing an endophyte is strongly recommended when establishing turf with perennial ryegrass, fine fescues, or tall fescue. Endophyte refers to a beneficial (non-pathogenic) association of a fungus with a turfgrass plant. The presence of an endophyte provides the turf with biological control of many foliar feeding insects. The viability of the endophyte is lost when seed containing endophyte is stored under hot, humid conditions for an extended period of time (less than one year).

High quality seed or seed mixtures that can not be found at your local retail outlet store are generally available at larger landscape/garden centers or through local landscape contractors.

Table 1. Suggested seed and seed mixtures for turf based on site conditions, intended use, expected level of maintenance, and the potential turf quality that can be achieved.

<u>Amount of Seed</u> % by weight	<u>Kind of Grass Seed</u>	<u>Seeding Rate</u> lb/1000 ft ²
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Open, Sunny Sites and Well-drained Soils. The expected level of maintenance required for these seed or seed mixtures would be medium to high resulting in a lawn of good to excellent turf quality.

a) 100%	Kentucky bluegrass blends	2 to 3 lbs
b) 80-90%	Kentucky bluegrass	3 to 4 lbs
10-20%	Perennial ryegrass (turf-types)	

The expected level of maintenance for this seed would be medium to high resulting in a lawn of fair to good turf quality.

c) 100%	Perennial ryegrass (turf-types)	4 to 5 lbs
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The expected level of maintenance for these seed or seed mixtures would be low to medium resulting in a lawn of fair to good turf quality.

d) 60-95%	Kentucky Bluegrass	3 to 4 lbs
5-40%	Fine Fescue	
0-20%	Perennial ryegrass (turf-types)	
e) 100%	Tall fescue (turf-types)	6 to 8 lbs

Moderate to Partial Shade, Well-Drained Soils. The expected level of maintenance for these seed or seed mixtures would be medium resulting in a lawn of good turf quality.

a) 25-50%	Kentucky Bluegrass	2 to 4 lbs
50-75%	Fine Fescue	
0-10%	Perennial ryegrass (turf-types)	
b) 100%	Fine fescues	4 to 5 lbs
c) 100%	Tall fescue (turf-types)	6 to 8 lbs

Heavy Shade, Well-drained Soils. The expected level of maintenance for this seed would be medium resulting in a lawn of fair turf quality.

100%	Fine fescues	4 to 5 lbs
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Heavy Shade, Poorly-drained Soils. The expected level of maintenance for this seed would be medium resulting in a lawn of fair turf quality.

100%	Rough bluegrass (<i>Poa trivialis</i>)	2 to 3 lbs
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Heavily-used (High Traffic) Areas. The expected level of maintenance for this seed would be medium to high resulting in a lawn of fair to good turf quality.

a) 100%	Kentucky bluegrass	2 to 3 lbs
b) 100%	Perennial ryegrass (turf-types)	4 to 5 lbs
c) 80-90%	Kentucky bluegrass	3 to 4 lbs
10-20%	Perennial ryegrass (turf-types)	
d) 85-95%	Tall fescue (turf-types)	6 to 8 lbs
5-15%	Kentucky bluegrass	

Note: Tall fescue requires time to establish. Traffic should be withheld for many months after seeding to achieve good wear tolerance.