

Establishing Turfgrasses by Seed

When selecting the grass species and cultivars try to balance the conditions of the site against the expected use. Consider the intensity of use, the desired quality, and the potential pest problems in view the physical limitations of the site.

Almost every new seeding will have some level of weed infestation. Many of the weeds that germinate in new plantings will not tolerate mowing and will be easily controlled after mowing starts.

6

Late summer through early fall is the preferred period for turfgrass establishment in New York. Warm soils, cooling temperatures and the autumn rains all coincide to produce a desirable environment for seed germination and seedling growth. So with some planning and a bit of attention to detail planting turfgrasses in the late summer can be very successful. Taking care to ensure a dense vigorous turf from the beginning will result in greater utility and lower maintenance costs for many years. The following is a checklist of the steps involved in successful turfgrass establishment.

Site Analysis

A few weeks prior to seeding ask yourself some questions about the site. How good is the soil drainage? Will the area need to be provided with surface or subsurface drainage or will the site be droughty. How is the site sloped? If major grading is required, strip the topsoil, grade the subsoil then replace the topsoil uniformly over the area. How much topsoil is on the sight and does it need to be amended? The topsoil layer should be at least 6" thick, preferably 8–12" thick. What is the nutrient status of the soil? Soil testing should be one of the priorities when conducting a site analysis. Adjustments to soil acidity, soil potassium and soil phosphorus levels can easily be made prior to planting. What is the physical condition of the soil? Adding an organic amendment to very sandy soils or to heavy clay soils can improve their physical condition. If the area to be seeded is either an athletic field or golf green consider physical testing of the proposed root zone mix in addition to a nutrient test. Finally, are there any perennial weeds, especially perennial grasses, on the site and how can they best be controlled before seeding? Glyphosate (Roundup) has no residual activity and it is safe to proceed with establishment a week after treating an area with glyphosate. Remember that seeding will have to be postponed about 16 weeks after the application of most preemergent herbicides and 4 weeks after the application of most postemergent herbicides.

Seedbed Preparation

Once the site is cleared, cleaned of debris, and graded the seedbed can be prepared. Seedbed preparation includes adjusting the soil acidity and nutrient levels and the final grading. If soil test results are available follow the test recommendations, provided not more than 2 lb K_2O is applied to the seedbed. Work the materials into the top 6" of soil. If no test results are available fertilize with 0.5 lb P_2O_5 /1,000 square feet and with 0.5 lb K_2O /1,000 square feet.

The purpose of the final grading is to create a firm and even seedbed. A roller can be used to firm the seedbed and to reveal uneven spots which can then be raked smooth. Rolling should not be used to correct uneven spots. Once leveled the surface 1/4" should be raked to create a slightly loose seedbed.

Grass Selection

When selecting the grass species and cultivars try to balance the conditions of the site against the expected use. Consider the intensity of use, the desired quality, and the potential pest problems in view the physical limitations of the site. For most lawns a seed mixture of Kentucky bluegrass, perennial ryegrass and fine fescues should result in an acceptable turf. A properly selected seed mixture will result in a quality turf over the range of conditions found at the site. Guidelines for seed mixes and seeding rates can be found in Table 1.

In addition to selecting the mix of species, consider using a blend of varieties for the dominant species in a mix. Similar to mixtures, a blend of cultivars will increase the range of adaptation of the seed mix. For example, include a shade tolerant Kentucky bluegrass in a general lawn mix or select cultivars with differing disease resistances. Normally a blend will be composed of at least three varieties. Finally give strong consideration to including endophytic varieties of grass when ever possible. The presence of endophytes confers some resistance to surface feeding pests such as chinch bugs and bluegrass billbugs. Endophytic varieties of perennial ryegrass, tall fescue, chewing fescue, and hard fescue are currently available. Information regarding the performance of selected varieties can be found in the Cornell Turfgrass Species and Variety Recommendations.

Seeding

Seeding rates for a variety of situations are listed in Table 1. Seed can either be broadcast over or drilled into the seedbed. In both cases split the seed into two equal portions and seed in two directions. Drop spreaders are preferred over rotary spreaders especially where the seed is very small (i.e. creeping bentgrass) or if the mixture contains seeds of widely different sizes and densities. Hydroseeding should be considered for steeper slopes or for areas where it is difficult to use other equipment. When seeding, apply a starter fertilizer at a rate of 1 lb N per 1,000 square feet. Good products will have a fertilizer ratio of approximately 3-4-1. After spreading the seed and fertilizer the area should be raked to incorporate both seed and fertilizer into the top 1/4" of soil. Some of the seed should still be visible after raking. Then roll the area lightly to assure good soil seed contact.

Mulch

Mulch is extremely valuable, especially where supplemental irrigation is not available. Straw mulches, for example, create a microclimate favorable for seed germination and help protect the soil surface from erosion. Water infiltration is also enhanced as the mulch slows the rate at which water moves across the soil. Straw mulches should be about 1 inch thick but the soil surface should still be visible. Plan on using between 80 - 100 pounds of mulch per 1,000 square feet. If wind is a concern an asphalt or cellulose mulch can be used as a binder to hold the straw in place. Alternatively use the asphalt mulch alone. Avoid hay because of the potential for introducing weeds into the site.

Post Planting Care

Irrigation will promote both rapid seed germination and vigorous establishment. Light frequent waterings which keep the seedbed moist but not waterlogged are preferred. As establishment progresses the frequency of irrigation can be reduced and the amount applied at a single irrigation increased. Try to continue to irrigate the turf for at least 3 weeks after germination and preferably until lawn is completely established. Irrigation is more important when undertaking a spring seeding and almost a necessity when seeding Kentucky bluegrass in the spring.

Mowing for most general lawn mixes can start when the seedlings have grown to about 3 inches tall. Mowing will encourage the seedlings

to tiller, rapidly increasing turfgrass density. Make sure the mower blades are sharp. Ragged cuts from dull mower blades damage the plants and will slow the rate of establishment. [Creeping bentgrass seedlings should be about one inch tall before the initial cutting. Set the cutting height at about a half inch and maintain that height for two or three more mowings. Then reduce the mowing height to the desired level.]

Three to four weeks after germination, fertilize the turf again. Use a complete fertilizer, either a second application of the starter fertilizer or apply another complete fertilizer having a ratio of 2-1-1. Apply enough fertilizer to deliver 1 lb. N per 1,000 square feet.

Almost every new seeding will have some level of weed infestation. Many of the weeds that germinate in new plantings will not tolerate mowing and will be easily controlled after mowing starts. Summer annual weeds which may germinate in fall plantings will not survive the winter and should pose no serious problems. The control of more persistent broadleaf weeds with postemergent herbicides should be delayed until after the third mowing. Do not apply fenoxaprop until the turf is fully established. Most preemergent herbicides should not be applied until after the turf is fully established. Exceptions are siduron which can be used at the time of seeding, and DCPA which can be used after the new seedlings have a minimum of 2 inches of growth.

DAVID B. DAVIDSON,
DEPT. OF FLORICULTURE AND ORNAMENTAL HORTICULTURE

Late summer through early fall is the preferred period for turfgrass establishment in New York.

Remember that seeding will have to be postponed about 16 weeks after the application of most preemergent herbicides and 4 weeks after the application of most postemergent herbicides.

Table 1. Examples of Seeding Mixes and Rates for Selected Turfgrass Uses.

Use	Species/Mix (% by weight)	Ibs Mixture (per 1,000 sq. ft.)	
Golf Courses	100% Creeping Bentgrass (single variety)	1	
Greens & Tees	100% Creeping Bentgrass	1	
Fairways	100% perennial ryegrass blend*	6-8	
	80% Kentucky bluegrass blend, 20% perennial ryegrass	3-4	
Athletic Fields	80% Kentucky bluegrass blend, 20% perennial ryegrass	3-4	
	100% perennial ryegrass blend*	6-8	
	100% tall fescue blend* (southeastern New York)	7-10	
Lawns (sunny) Medium-High*	70% (or more) Kentucky bluegrass blend, 10-20% perennial ryegrass, remainder fine leaf fescues	3-4	
	Low-Dry	65% fine fescue blend, 10-20% perennial ryegrass remainder Kentucky bluegrass blend	4-5
		100% tall fescue blend (southeastern New York)	7-10
Lawns (shady) Dry	65% fine fescue blend, 10-20% perennial ryegrass, remainder a blend of shade tolerant kentucky bluegrasses	4-5	
		80% shade tolerant Kentucky bluegrass blend, 20% perennial ryegrass	3-4
	Wet	70% rough bluegrass, 30% shade tolerant Kentucky bluegrass blend	2-3

* Tall fescue and perennial ryegrass are not winter hardy in the northern parts of New York State, especially away from the Great Lakes.

