

Lawn Improvement Programs

Purdue University Turf Science

Department of
Agronomy
www.agry.purdue.edu/turf

University of Illinois Turfgrass Program

Department of
Natural
Resources and
Environmental
Sciences
www.turf.uiuc.edu

Whether your lawn is thin from the rigors of summer or from neglect, fall is the best time of the year to improve your lawn. Some lawns can be dramatically improved with proper fertilization and weed control in fall; whereas others may need reseeding in some areas or even complete renovation.

Lawn Improvement Through Fertilization and Weed Control

Many lawns can be improved with proper fertilization and weed control. September is the most important time to fertilize cool-season turfgrasses in order to encourage rooting and increase density.

1. Fertilize in mid-September with a product that has a nutrient ratio of nitrogen, phosphorus and potassium of approximately 4-1-2. Examples of fertilizers with this ratio would be 24-6-12 or 20-5-10. Apply the fertilizer at a rate of 1.0 pound of Nitrogen per 1000 ft² of lawn.
2. Make a second fertilizer application after the last mowing of the year, but while the turfgrass is still green. A soluble nitrogen source, such as urea, is very effective for late fall fertilization. The nitrogen should be applied at the rate of 1.0 to 1.25 pounds of nitrogen per 1000 ft² of lawn. Nitrogen is the most important nutrient to apply in a late fall fertilization.
3. Two fall applications of fertilizer should be adequate to maintain or even improve most lawns. A third application in mid-October could further improve your lawn if it was especially thin after summer. Apply 1.0 pound of nitrogen per 1000 ft² containing soluble nitrogen such as urea. Be sure to reduce the rate of application

of the November application to 1.0 pound of nitrogen per 1000 ft² if you make an October application. The October application may encourage a winter disease called snow mold, so this application should be used only on very thin lawns where improved density is worth the risk of increased snow mold. For more information on fertilizing lawns and calculating the amount of fertilizer needed, refer to AY-22, *Fertilizing Established Lawns*.

4. An application of a broadleaf herbicide containing 2,4-D MCPP, and dicamba in mid-October will control dandelions, plantain, wild violets, clover, and black medic among other weeds. Read, understand and follow all directions on the herbicide label when using any pest-control chemical. Be careful when using these products because they may damage desired vegetation such as flowers, trees, shrubs, or vegetables. Apply this product on a sunny day when no rain is forecast and temperatures are above 50°F. For more information, refer to AY-9, *Control of Broadleaf Weeds in Home Lawns*.

Improving Your Lawn Through Overseeding

The density of many lawns can be improved by introducing seed into the lawn and allowing these plants to germinate. The optimum time to seed cool-season turfgrasses is between Aug. 15 and Sept. 1 in central Indiana and Illinois, a week earlier in northern Indiana and Illinois, and a week later in southern Indiana and Illinois.

1. Mow the area to 1 or 1.5 inches to reduce competition from established grasses.

Table 1. Recommended seeding rates for lawns in Indiana and Illinois.

Seed Blend or Mixture	Seeding Rate	
	lbs./1000 ft ²	lbs./acre
100% Kentucky Bluegrass	1.5-2.0	65-87
85-90% Kentucky bluegrass + 10-15% perennial rye	3.0-4.0	131-174
50-70% Kentucky bluegrass + 30-50% fine fescue	4.0-5.0	174-218
100% tall fescue	6.0-9.0	261-348

2. Aerify the area, punching 20 to 40 holes per ft² with the largest tines available. This will increase the seed-soil contact and improve germination and establishment rate. You can never over-aerify at this time, so make many passes over the lawn. A power raking at this time will also help to increase the seed-soil contact.
3. Apply a starter fertilizer (high in phosphorus) over the entire lawn at 1.0 to 1.25 pounds of phosphate per 1000 ft² of lawn.
4. Apply the seed to the lawn with either a dropseeder or a power overseeder (also called a slit seeder or slicer-seeder) which is a machine that will drop the seeds into small grooves that it cuts into the soil. Try to make 2 to 4 passes over the lawn in different directions with either the dropseeder or the power overseeder to insure a uniform seeding. Table 1 lists the suggested seeding rates.
5. Water the newly-seeded area three to four times daily in order to keep the soil surface moist. Light, frequent irrigation is the rule during the first few weeks.
6. Mow frequently to limit the competition from the established turf. Mow at 1.5 inches until new seedlings have been cut at least two times. After that, raise the mowing height in 1/2 inch intervals over the next three weeks until a normal mowing height of 2.5 to 3.5 inches is reached.
7. Four weeks after germination, apply 1.0 pound of nitrogen per 1000 ft² of lawn using a fertilizer containing N, P, and K.
8. Follow the instructions for improving your lawn through proper fertilization and weed control.

Improving Your Lawn Through Complete Renovation

Some lawns may be in need of complete renovation and reseeding because the lawn contains old or poor-performing species or cultivars; is damaged from traffic, diseases, or other stresses; is on severely compacted soil; contains more than 1/2 inch

of thatch; and/or contains many grassy perennial weeds such as nimblewill or quackgrass.

1. Apply a nonselective herbicide such as glyphosate (Roundup or Kleenup) to kill the undesirable grasses. Multiple applications may be needed to control tough-to-control grasses such as quackgrass or zoysiagrass. Refer to AY-11-W, *Controlling Perennial Weedy Grasses in Turf*. Allow the herbicide to work for at least 3 days before taking the next step.
2. Depending on your lawn, you can use one of three methods to prepare the soil:
 - A. On uncompacted soils with no thatch, an aerifier can be used to expose the soil. A power rake set to cut 1/8 to 1/4 inch into the soil works also will work well. Follow this with a power overseeder or drop seeding.
 - B. On compacted soils, till the soil to 4 inches or more, rake smooth, allow it to settle for 1 to 2 weeks with irrigation or a heavy rain and/or compact slightly with tractor wheels or other implement. Finish by raking to smooth the soil surface and drop seed.
 - C. On lawns with significant thatch, a power rake should be used to loosen and remove as much thatch as possible. If the thatch is more than 1 inch thick, either use a sod cutter to remove the thatch or completely rotary till the soil turning under the thatch. Follow this with drop seeding or power overseeding.
3. Just before seeding, apply a starter fertilizer (high in phosphorus) over the entire lawn at 1.0 to 1.25 pounds of P₂O₅ per 1000 ft² of lawn.
4. After seeding, lightly rake the soil to incorporate the seed in the top 1/4 inch and roll the lawn with a light roller to insure seed-soil contact.
5. Water the newly-seeded area three to four times daily in order to keep the soil surface moist. Light, frequent irrigation is the rule during the first few weeks.

6. Mow as soon as the first newly emerging blades reach about 2 inches. Mow Kentucky bluegrass, perennial rye, and fine fescue turf at 1.5 inches and tall fescue turf at 2.0 inches. After the first three to four mowings, adjust your mower to the permanent mowing height which is 3.0 - 3.5 inches for Kentucky bluegrass, perennial rye, and fine fescue and 3.0 - 4.0 inches for tall fescue.
7. Seven weeks after germination, apply 1.0 pound of nitrogen per 1000 ft² of lawn with a fertilizer containing N, P, and K.
8. Follow the instructions for improving your lawn through fertilization and weed control. For more information, refer to AY-3, *Establishing Lawns from Seed*.

Authors:

Zac Reicher, Professor and Turfgrass Extension Specialist,
Purdue University Department of Agronomy

Cale Bigelow, Assistant Professor and Turfgrass Extension
Specialist, Purdue University Department of Agronomy

Aaron Patton, Graduate Research Assistant, Purdue
University Department of Agronomy

Tom Voigt, Associate Professor and Turfgrass Extension
Specialist, University of Illinois Department of Natural
Resources and Environmental Sciences



Rev. 09/2006

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

Order or download materials on this and other topics from:

Purdue Extension Education Store: www.ces.purdue.edu/new
University of Illinois Extension Publications Plus: www.pubsplus.uiuc.edu