

Lawn Management Through the Seasons



To maintain an attractive home lawn, you must do more than just mow and water. You need to select the proper turfgrass species and use the appropriate management practices at the correct times of year.

This publication serves as a calendar guide for turf management practices. It also suggests when to look for pests that can damage turf. Be aware that this guide is based on environmental conditions that occur in a typical growing season. During years in which severe drought, heat, or cold occur for extended periods or at unusual times during the season, some management practices should be delayed until more favorable conditions return.

Seeding

Late summer to early fall usually is the best time to establish a new lawn from seed. New seedlings normally are more successful at this time than in the spring because of reduced weed competition and because the new grass will have two cool growing seasons (fall and spring) before it encounters its first period of heat stress. In spring, soils also may be too wet for good seedbed preparation. Seeding later than mid-October is not suggested for most areas of Pennsylvania.

Overseeding

Overseeding into thin turf or small patches of bare soil can be done in late winter, spring, or early fall. Spring and early fall overseedings can be made following aeration (six to eight passes over the lawn), dethatching, or by using a disk-type seeder that drops seed into slits in the soil. When overseeding, it is especially important that the seed comes into contact with the soil and has space to germinate and develop.

Sodding

Sod can be put down almost any time of the year provided irrigation water is available. However, if sod is put down during the hot, dry months of summer, more frequent watering is required and the sod will take longer to establish.

Fertilization

Fertilization does more to improve poor-quality turf or maintain good quality turf than any other management

practice. Grass plants normally need nitrogen, phosphorus (phosphate or P_2O_5), and potassium (potash or K_2O) in greater amounts than can be supplied naturally from soil. The only way to determine how much phosphate and potash turf requires is from a soil test. Soil tests are not a reliable means of determining nitrogen requirements.

Soil testing services are available from the Penn State Agricultural and Analytical Services Laboratory. Mailing kits for the tests may be obtained for a nominal fee from the cooperative extension office in your county.

Turfgrass fertilizers usually contain three plant nutrients: nitrogen, phosphorus (designated on labels as available phosphate, or P_2O_5), and potassium (designated as water-soluble potash, or K_2O). These three nutrients are represented on the fertilizer container as three numbers indicating the percentages by weight of nitrogen, phosphate, and potash—always in that order—and are referred to as the fertilizer grade. If you buy a 100-pound bag of fertilizer with a grade of 30-0-10, it contains 30 pounds of nitrogen, no phosphate, and 10 pounds of potash. A 50-pound bag of the same product would yield 15 pounds of nitrogen, no phosphate, and 5 pounds of potash. Knowing the fertilizer grade is important in determining how much fertilizer and which nutrients to apply to your turf.

If your soil test report indicates adequate amounts of phosphate and potash in the soil, then you can apply a fertilizer with nitrogen as the primary ingredient. Examples of fertilizers with mostly nitrogen include 29-3-4, 33-3-4, 26-2-6, and 21-5-7. Many fertilizer

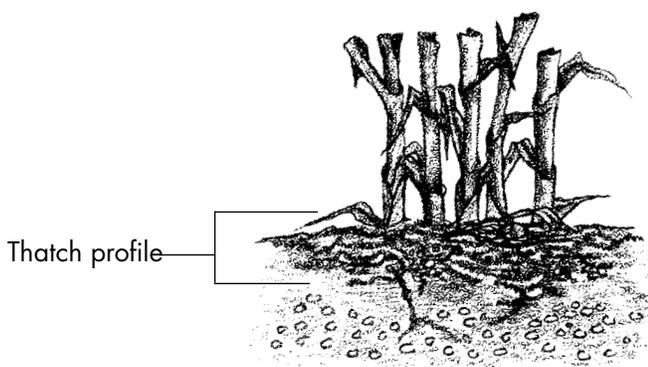
products have recommended spreader settings that correspond to specific spreader types listed on their labels. These settings are designed to deliver enough nitrogen fertilizer to satisfy the needs of your lawn for a season (spring or fall). A fertilizer application in mid-spring and another in late summer (September) usually provides an adequate amount of nitrogen for most lawns. Occasionally, a third application made before the soil freezes in late fall (November) is beneficial.

Liming

Most turfgrasses prefer a soil pH ranging from 6.0 to 7.0. If the soil is too acid for proper turfgrass growth, lime may be applied. The only way to determine if lime is needed and how much to apply is from a soil test. The application requirement should be met by using ground agricultural limestone. Fall applications are best because winter rain and snow, combined with freezing and thawing of the soil, help work the limestone into the soil. Late winter also is a good time to apply lime.

Mowing

Most lawns should be cut at 2 inches or above and mowed on a regular basis as long as the grass is growing. How frequently you should mow depends on the growth rate of the grass. Try not to remove more than one-third of the total leaf surface at a given mowing. Thus, if the turf is cut at 2 inches, try to mow when it reaches a height no greater than 3 inches. Clippings do not need to be removed provided the lawn is mowed regularly. All mowing equipment must be kept sharp and properly adjusted.



Dethatching

Thatch is the tightly intermingled layer of partially decomposed grass stems and roots that develops beneath the actively growing green vegetation and above the soil surface. Thatch decreases the vigor of turfgrasses by restricting the movement of air, water, plant nutrients, and pesticides into the soil. Turfgrass roots also grow into the thatch and become desiccated as the thatch dries.

Thatch should be removed using dethatching equipment with vertically rotating blades or aeration equipment. Dethatch when thatch is greater than or equal to one inch in depth and only during periods of cool weather and adequate moisture. Thatch should not be removed during periods of high temperatures, drought, or during late fall when winter desiccation may occur.

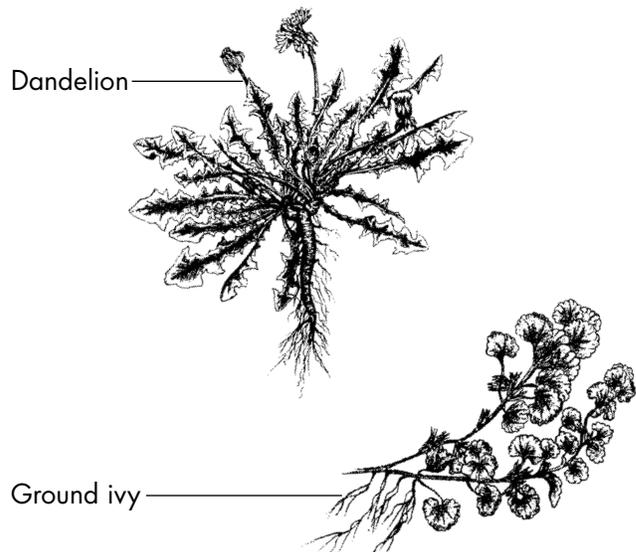
Maintaining a soil pH between 6.0 and 7.0 will favor microbial activity and breakdown of thatch.

Aeration

Aeration is the process of removing plugs of soil from the turf area, thereby creating an artificial system of large pores that carry moisture or plant nutrients into the soil. Aeration is used to alleviate soil compaction and can significantly reduce thatch.

Aerators are equipped with hollow tines (usually 3 to 4 inches in length and ¼ to ¾ inches in width) or open spoons to remove plugs from the soil. Equipment having solid tines or spikes should not be mistaken for aerating equipment.

Aeration should be completed during periods of cool weather (early to mid-spring or late summer to early fall) to facilitate rapid recovery of the grass. Sometimes spring aeration will bring weed seeds to the soil surface and create voids for weeds to germinate and grow. Adequate moisture is necessary for the aerator tines to penetrate the turf and remove the plugs. The plugs can be broken apart once they have dried.



Weed Control

The first step in weed control is to develop a dense, properly managed turf. If this approach fails to prevent weed infestation, herbicides that will control most turfgrass weeds are available.

Annual grass weeds, such as crabgrass, can be controlled with preemergence herbicides. These chemicals

should be applied prior to weed seed germination in early to mid-spring, depending on the location in the state. Suggested dates for preemergence herbicide applications in Pennsylvania are as follows:

- Southeastern counties—March 15 to April 10
- Northern tier counties—April 20 to May 10
- Other counties—April 1 to May 1

Broadleaf weeds, such as dandelion and ground ivy, usually are controlled with broadleaf herbicides. It is especially important to identify weeds present and select the herbicide that will provide the best control. Broadleaf herbicide applications should be made when weeds are actively growing in spring or fall.

Diseases

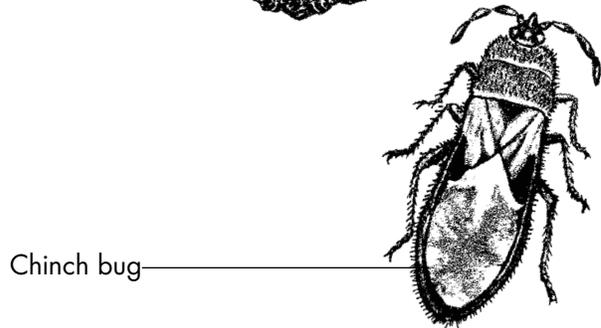
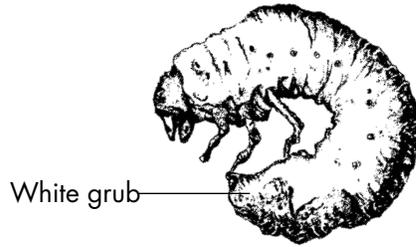
Turfgrass disease problems can occur at any time of the year. Some diseases occur under a blanket of snow during the frigid months of winter, while others appear only during the hottest and most humid conditions of mid-summer. Certain diseases occur more frequently when soils are saturated with water, while others are more likely to occur under drought stress.

The first step in managing a turfgrass disease is to obtain an accurate diagnosis. If a disease is not recognized at a very early stage of development, control can be difficult and often impossible. Unfortunately, identifying these diseases also can be difficult, since the pathogens that cause them usually are visible only under a microscope.

To gain a better understanding of turfgrass diseases, consult *Managing Turfgrass Diseases*, available through Penn State Cooperative Extension.

Insects

Most insect problems occur from late spring to early fall. Japanese beetle grubs feed on turfgrass roots during May and June and again in late August, September,



and early October. As grubs feed on roots near the soil surface, large segments of turf begin to die. Often, the sod can be rolled back like a carpet and the grubs exposed. Birds, skunks, racoons, and moles often will dig up grub-infested turf, sometimes creating extensive damage. The best time to control grubs is in early summer with an application of imidacloprid-containing products.

Leaf- and stem-feeding insects, such as chinch bugs and sod webworms, cause turf damage during hot, dry weather in June, July, and August. Chinch bugs feed by inserting their mouthparts into turf foliage and sucking out the fluids. These insects can be detected by carefully inspecting the turf bordering dead areas or by placing a large can, with both ends removed, a few inches into the soil and filling it with water. If chinch bugs are present, they will float to the surface within 10 to 15 minutes. Planting or overseeding resistant grasses and irrigating drought-stressed turf may help reduce insect damage.

Revised by Peter Landschoot, professor of turfgrass science, from special circular 201, *Lawn Management Through the Seasons*, by John C. Harper II, professor emeritus of agronomy.

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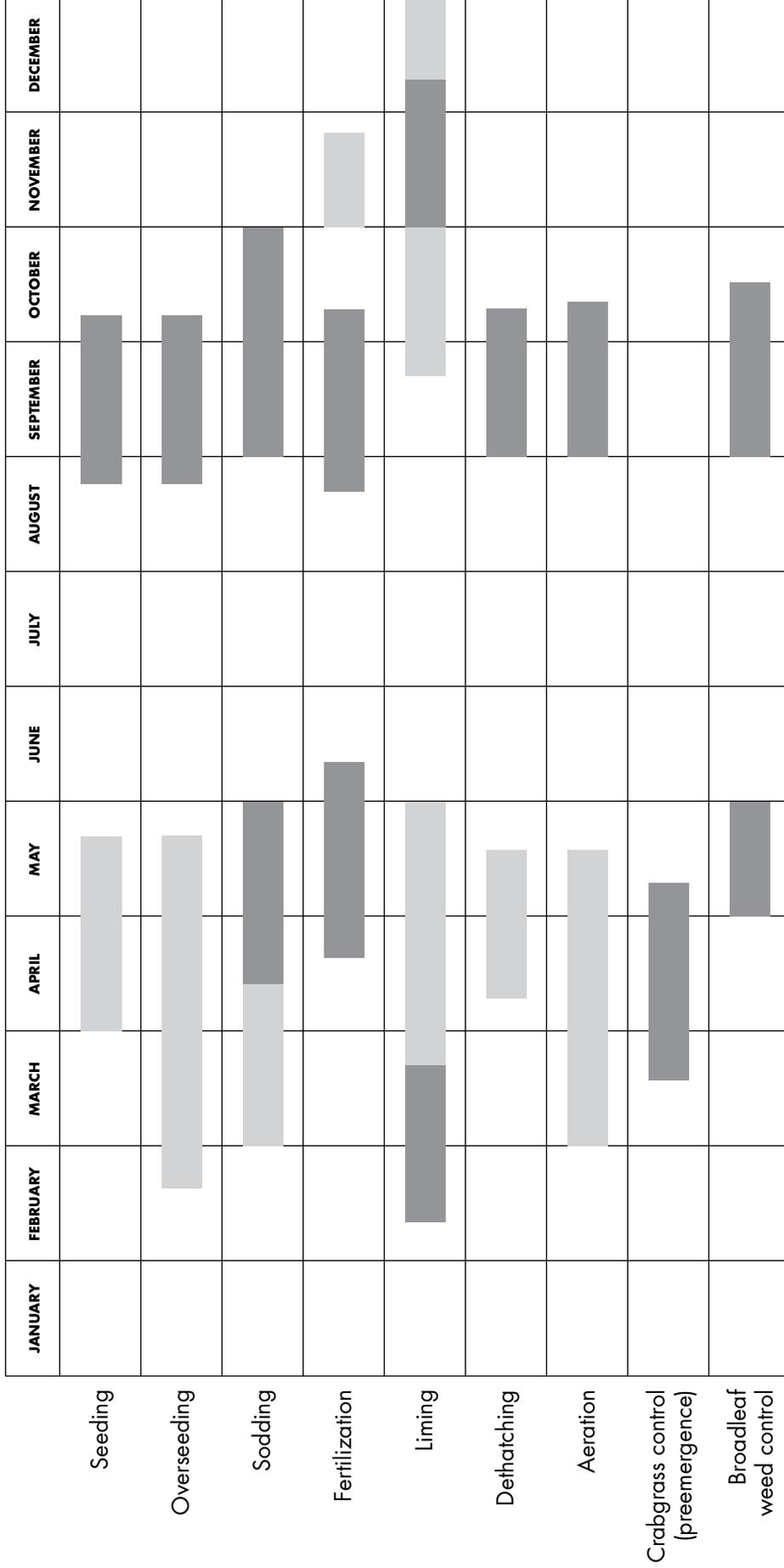
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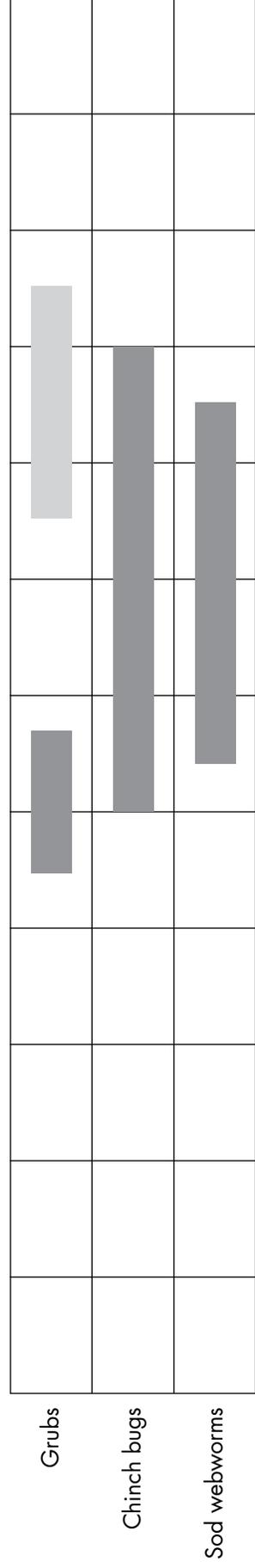
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TURFGRASS MANAGEMENT CALENDAR



INSECT OCCURRENCE



Can perform management practices or control procedures at this time.
 Optimum time to perform management practices or control procedures.