

# Lawn Management Through the Seasons



Successful management of home lawns depends on proper selection and management of turfgrasses. To obtain optimum performance from your lawn, it is important to employ 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 are normally more successful at this time of year than in the spring because of reduced weed competition, and the new grass will have two cool growing seasons (fall and spring) before it encounters its first period of heat stress. Also, soils may be too wet for good seedbed preparation in the spring. 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 with a core aerator), 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 if 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 single

management practice. Grass plants often 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. Nitrogen requirement cannot be determined by a soil test.

Soil testing services are available from the Penn State Agricultural Analytical Services Laboratory. Soil test mailing kits for University testing may be obtained from Penn State Extension county offices for a nominal fee.

In most cases, turfgrasses benefit from annual applications of nitrogen fertilizer. These needs can be met for most lawns by applying fertilizer that contains some slow-release nitrogen during mid- to late spring and/or late summer/early fall. Nitrogen fertilizer should be applied at the rate specified on the manufacturer's label.

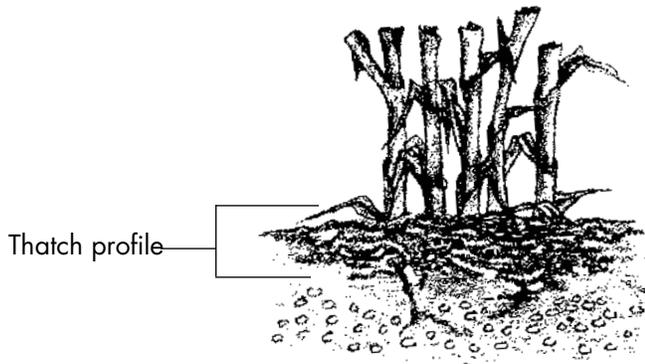
## Liming

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. Lime should be applied in accordance with a soil test recommendation. The lime requirement should be met by applying ground agricultural limestone or pelletized lime. Fall applications are preferred because rain, snow, and freezing/thawing of the soil during the winter aid in working the limestone into the soil. Late winter is also a good time to apply lime.



## Mowing

Most lawns should be mowed at 2 inches or above and on a regular basis as long as the grass is growing. Frequency of mowing should be based on the growth rate of the grass. During peak periods of growth in the spring, you may need to mow your lawn more than once per week. During periods of drought, your lawn may not require mowing until active growth resumes following rainfall events. Clippings do not need to be removed if the frequency of mowing is adequate. All mowing equipment should be kept sharp and in proper adjustment.



## 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 mechanically 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. It is not necessary to dethatch every year; rather, dethatch only when buildup becomes excessive.

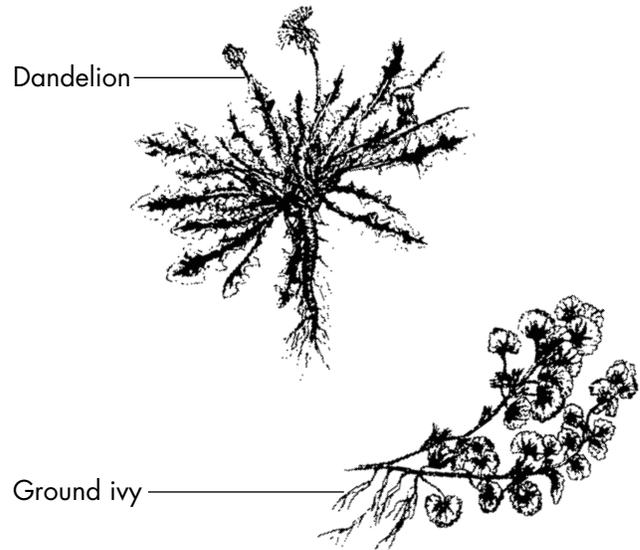
## Aeration

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

Core aerators are equipped with hollow tines (usually 3 to 4 inches long and  $\frac{1}{4}$  to  $\frac{3}{4}$  inch wide) to

remove plugs from the soil. Equipment having solid tines or spikes should not be mistaken for core aerating equipment.

Aeration should be performed 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 large numbers of 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 should 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 Pennsylvania: March 15 to April 15
- Northern tier and high-altitude counties: April 15 to May 15
- Other Pennsylvania areas: April 1 to May 1

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

## Diseases

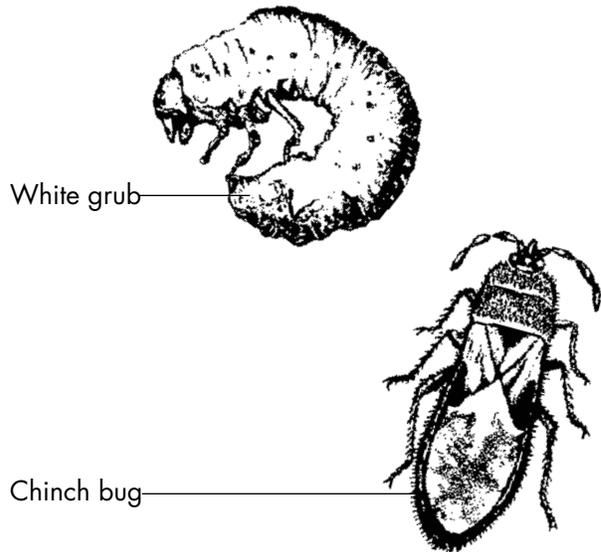
Turfgrass disease problems can occur at any time of the year. Some diseases occur under a blanket of snow during the frigid months of winter, while others appear only during the hottest and most humid conditions of mid-summer. Certain diseases occur more frequently when soils are saturated with water,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

The first step in managing a turfgrass disease is to obtain an accurate diagnosis. While this is more of a straightforward task with turfgrass pests that are relatively easy to observe (weeds and insects), the pathogens that cause turf diseases are usually only visible under a microscope. If a disease is not recognized at a very early stage of development, control can be difficult and often impossible.

To gain a better understanding of turfgrass diseases, consult the “Managing Turfgrass Diseases” publication, available through Penn State 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, raccoons, and moles will often dig up grub-infested turf, sometimes creating extensive damage. White grubs are best controlled using preventive applications of products containing chlorantraniliprole or imidacloprid. For control of grubs during late summer or early fall, a chlorantraniliprole-containing product can be applied during the spring and watered into the soil. Products containing imidacloprid should be applied and watered into the soil from mid-June to mid-July to control grubs in late summer or early fall. In



cases where grubs are actively feeding at the soil surface and no preventive insecticide was used in spring or summer, products containing carbaryl or trichlorfon can be applied and watered into the soil.

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 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 (i.e., grasses containing endophytic fungi) and irrigating drought-stressed turf may help reduce insect damage. Insecticides containing pyrethroid compounds are effective at controlling chinch bugs when they are actively feeding.

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Revised by Peter Landschoot, professor of turfgrass science, from “Lawn Management Through the Seasons,” by John C. Harper II, professor emeritus of agronomy.

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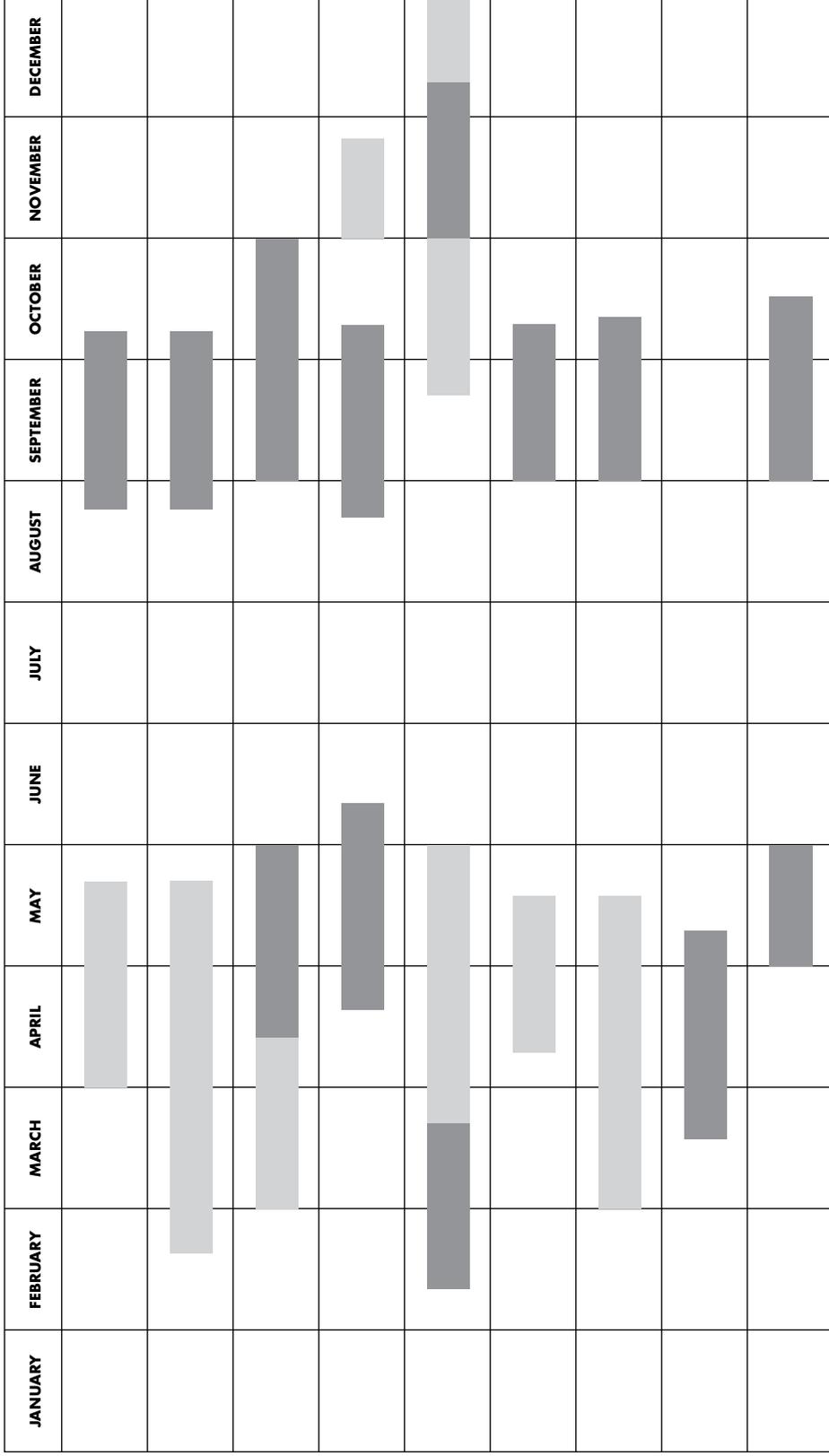
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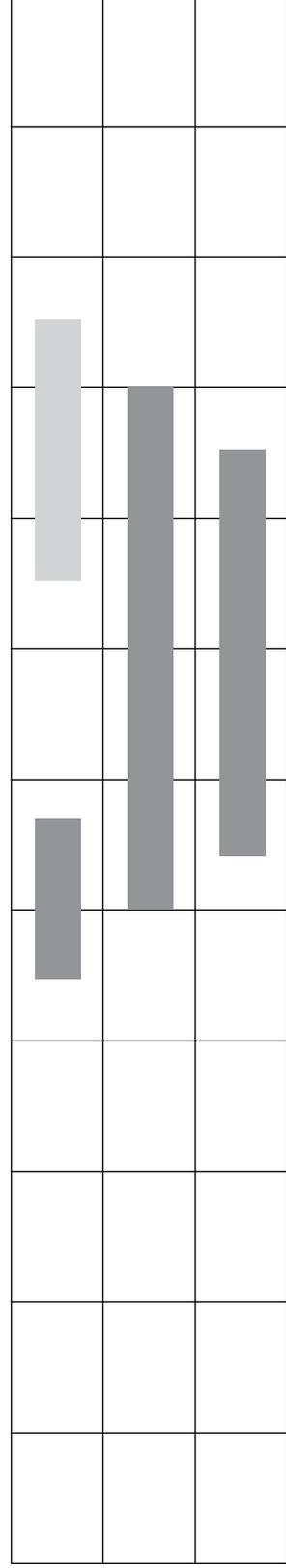
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## TURFGRASS MANAGEMENT CALENDAR



### INSECT OCCURRENCE



\* Control timing depends on region in Pennsylvania.

Can perform management practices or control procedures at this time.

Optimum time to perform management practices or control procedures.