KEEPING a LAWN
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KEEPING AN ATTRACTIVE LAWN is not especially easy. It is usually possible, however, if strict attention is given to a few cultural practices such as fertilizing, mowing, and watering.

The basic practices of lawn maintenance are discussed in this publication. More detailed information about lawn care can be supplied by county extension advisers in agriculture, state turfgrass specialists, and others in the turf profession.

FERTILIZING

An adequate fertilization program is important in lawn maintenance. It will help produce an attractive, dense stand of grass that will withstand weed invasion and recover from disease or insect damage better than an improperly fertilized lawn.

Lawn fertilizer needs

Many fertilizers are available for use on lawns. Most of them are complete fertilizers, containing nitrogen, phosphorus, and potassium. Although these three elements are the most likely to be deficient for plant growth, some lawn areas contain enough phosphorus or potassium (or both). For such areas, it is possible to obtain a lawn fertilizer that contains only nitrogen or nitrogen plus either phosphorus or potassium.

Nitrogen is the key element in a lawn fertility program. Lawn grasses use large amounts of this element. In addition, water will continually leach nitrogen from the root zone of the soil. Periodic applications of nitrogen are therefore recommended to keep the nitrogen level near the optimum.

Phosphorus and potassium are necessary for optimum growth of lawn grasses. These two elements do not disappear from the soil as quickly as nitrogen and they will accumulate in the soil with repeated applications of a complete fertilizer.

Other elements, although they may be essential for plant growth, are rarely deficient in Illinois soils. If a deficiency is suspected, however, you can obtain a specialty fertilizer that contains essential major and minor elements.

Types and forms of fertilizer

Inorganic or organic fertilizers, or mixtures of both, are used to fertilize lawns. Ammonium nitrate and ammonium sulfate are examples of inorganic fertilizers. Organic fertilizers include steamed bone meal
and sewage sludge. Urea-formaldehyde is a synthetic organic material. The organic and synthetic organic fertilizers release nitrogen for plant use more slowly than the inorganic fertilizers.

Both organic and inorganic lawn fertilizers have desirable and undesirable traits. On the basis of price per pound of fertilizer elements, the inorganics generally cost less than the organics. Also, the inorganics are usually less bulky, and they do not have the disagreeable odor that some of the organics do.

The inorganic fertilizers, however, are usually more rapidly soluble than the organics and so are more likely to injure the grass if too much is applied at one time. Also, since the elements in the inorganic fertilizers quickly become available for plant use, the grass may grow too fast right after the fertilizer is applied. This is less likely to happen with the organic and synthetic organic fertilizers. Urea-formaldehyde is sometimes added to the inorganic fertilizers to make them safer and longer lasting.

Both organic and inorganic fertilizers are available in liquid, powdered, or granular (pelleted) form. Granular material is most often used. Regardless of the form used, results depend upon the amount of fertilizer elements, especially nitrogen, that are applied. Lawn fertilizers are often mixed with pesticides, or materials for controlling weeds, diseases, and insects. These mixtures are time savers if a pesticide is needed; otherwise they should not be used.

Analysis

The fertilizer container will show the fertilizer analysis, or the amounts of nitrogen, phosphorus (phosphoric acid, $P_2O_5$), and potassium (potash, $K_2O$). The numbers 10-6-4 on a bag, for example, indicate that 10 percent of the material is nitrogen; 6 percent, phosphoric acid; and 4 percent, potash. A 50-pound bag of a 10-6-4 fertilizer would thus contain 5 pounds of nitrogen, 3 pounds of phosphoric acid, and 2 pounds of potash. If 1 pound of nitrogen is to be applied per 1,000 square feet, then a 50-pound bag of 10-6-4 would be needed for 5,000 square feet.

Fertilizers with various analyses are available for use on lawns. Some are manufactured specifically for lawn use. Specific application instructions, including the setting for various spreaders, often appear on the containers of lawn fertilizers. Close adherence to these recommendations should give satisfactory results.

How much to apply

A lawn fertility program can be based upon the color and appearance of the grass. When the grass begins to lose its color and thriftiness, fertilizer can be applied. Most homeowners, however, prefer to follow more specific fertilizer programs. Three maintenance programs
Table 1. — Amounts of Some Common Fertilizers Needed to Apply Approximately 1 Pound of Nitrogen (N) per 1,000 Square Feet

<table>
<thead>
<tr>
<th>Pct. N in fertilizer</th>
<th>Example of fertilizer analysis</th>
<th>Lb. of fertilizer to apply 1 lb. N</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>10-6-4</td>
<td>10</td>
</tr>
<tr>
<td>12%</td>
<td>12-4-8</td>
<td>8</td>
</tr>
<tr>
<td>15%</td>
<td>15-5-5</td>
<td>7</td>
</tr>
<tr>
<td>16%</td>
<td>16-8-8</td>
<td>6</td>
</tr>
<tr>
<td>18%</td>
<td>18-4-6</td>
<td>6</td>
</tr>
<tr>
<td>20%</td>
<td>20-5-5</td>
<td>5</td>
</tr>
<tr>
<td>22%</td>
<td>22-4-6</td>
<td>5</td>
</tr>
</tbody>
</table>

NOTE: These figures can be used to determine the required amounts of fertilizer with higher analyses. If a fertilizer contains 25 percent nitrogen, for example, apply only half as much as is recommended for a fertilizer with 12 percent nitrogen. Fertilizers manufactured specifically for lawn use carry recommendations as to the proper amounts. These recommendations should be followed.

are given below. The total amount of some common fertilizers that would be needed to supply a specified amount of nitrogen can be found in Table 1.

Low maintenance. Apply 1½ to 2 pounds of nitrogen per 1,000 square feet in early spring or fall. Frequently fall is the preferred time. This program might prove satisfactory for large areas, where a passable turf is desired. (Note — fertilizers should not be applied to warm season grasses such as bermuda and zoysia after midsummer.)

Medium maintenance. Apply 1½ to 2 pounds of nitrogen per 1,000 square feet in early spring and fall (3 to 4 pounds of nitrogen per year). This program should prove satisfactory for unwatered Kentucky bluegrass or Kentucky bluegrass-red fescue lawns. (See note under “Low maintenance.”)

High maintenance. Apply 1½ to 2 pounds of nitrogen per 1,000 square feet in early spring and fall plus 1 pound in May and 1 pound in July (5 to 6 pounds of nitrogen per year). This program should prove satisfactory for Merion Kentucky bluegrass and for lawns that are watered regularly. (See note under “Low maintenance.”)

Lawn fertilizer is available in many different package sizes. Try not to buy more fertilizer than you need, as it will often cake, draw moisture, or have a disagreeable odor. If you do have any lawn fertilizer left after fertilizing the lawn, you can use it to fertilize trees, flowers, or vegetables.

Fertilizer burns

Although not common, fertilizer burns can be serious, particularly on bentgrass. Fortunately, the grass usually recovers from the injury. Following are a few considerations to lessen the likelihood of burning:
• Apply only the recommended amount of fertilizer. Too much of the higher analysis fertilizers may burn the grass although this danger will be reduced if the fertilizer contains organic nitrogen. For extra safety, no more than 1 pound of inorganic nitrogen per 1,000 square feet should be applied at one time. If you suspect that the amount of fertilizer you want to apply will burn the grass, apply only one-half of the desired amount at first, and apply the rest a few weeks later.

• Be especially careful with powdered fertilizers. They stick to the grass blades and are much more likely to burn the grass than are granular materials, which fall right to the soil.

• Do not fertilize when the grass is wet.

• Do not spill fertilizer on the grass. Fill the spreader where any spillage can be cleaned up.

• Avoid overlapping when using a band-type spreader.

• If possible, water the lawn immediately after fertilizing.

• If a burn is anticipated, take special precautions. Water the area heavily. (Apply 1 inch of water, or enough to moisten the soil 5 to 6 inches deep.) Also be prepared to mow frequently until the nitrogen is no longer available to stimulate the grass.

How to spread the fertilizer

Either a band or broadcast type fertilizer spreader can be used to spread the granular fertilizer. The broadcast spreader is faster and there is usually less of a problem with overlapping or skipping than when the band spreader is used. The spreader setting for a particular fertilizer may be given on the bag or with the directions that accompany the spreader. If the proper setting is not given, it can be determined by trial and error on a small area. When adjusting a spreader, it is best to work on the sidewalk or driveway where the fertilizer can be swept up. After the proper setting for a particular spreader and fertilizer is found, be sure to note it for future use.

Many fertilizers, if left in a metal spreader, will cause it to rust out in a short time. It is wise to wash the spreader thoroughly with water, let it dry, and oil the moving parts before storing it.

Soil testing

The best time to test the soil is before the lawn has been established. Then it is possible to correct nutrient deficiencies in the lower root zones. After a lawn is established, fertilizer can be applied only to the soil surface, and often much of it will stay in the surface soil. Nitrogen, however, which grass needs in large amounts, will leach downward into the soil.

If you consider a soil test advisable, take a composite sample from
several sites and send it to a testing laboratory. This should be done several weeks before fertilizing, since it may take two weeks or longer to finish the testing. Several commercial testing facilities are in the state. You can get a list of them from county extension advisers, soil conservationists, or vocational agriculture instructors. These agriculture specialists can also help to interpret the test results and make specific cultural recommendations.

MOWING

To be attractive, a lawn must be mowed properly. Many poor lawns are the result of poor mowing practices and equipment. A rotary or reel mower that is sharp and in good repair will do a satisfactory job. A good mower is especially important for a lawn that is to be kept short.

The proper height of cut varies with different grasses (Table 2). A grass that is to be kept rather high will not be noticeably affected if the height of cut is varied by a fraction of an inch. This much variation could be serious, however, for grasses that are cut short. The mower can be set to the proper height by placing it on a level sidewalk or driveway and adjusting the cutting edge up or down as desired.

A lawn should be cut often enough that no more than a third (better a fourth or less) of the grass is removed. Thus a Kentucky bluegrass turf kept at a height of 2 inches should be cut at least by the time it reaches 3 inches, with 1 inch, or one-third of the grass height, removed by mowing.

Sometimes varying the direction of mowing (from east to west then north to south) will help improve the mowing job. This is especially true if the mower has a tendency to flatten the grass.

Whether or not to catch clippings must be approached on an individual basis. Removing the clippings usually improves the appearance of the lawn, at least right after mowing, and will help to reduce thatch accumulation (page 10). It is difficult to collect and dispose of clippings on a large lawn, although some of the power sweepers and larger mowers with catchers make this possible. If mowing has been delayed too long and the clippings would be windrowed by the mower, it would be well to catch them or sweep them up.

Table 2. — Suggested Mowing Heights for Different Grasses

<table>
<thead>
<tr>
<th>Grass</th>
<th>Height, in.</th>
<th>Grass</th>
<th>Height, in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merion Kentucky bluegrass</td>
<td>1½–2</td>
<td>Bentgrass</td>
<td>¼–1</td>
</tr>
<tr>
<td>Other Kentucky bluegrasses</td>
<td>2–2½</td>
<td>Perennial ryegrass</td>
<td>2–2½</td>
</tr>
<tr>
<td>Mixtures that include Kentucky bluegrasses</td>
<td>2–2½</td>
<td>Redtop</td>
<td>2–2½</td>
</tr>
<tr>
<td>Red fescue</td>
<td>2–2½</td>
<td>Zoysia grass</td>
<td>½–1</td>
</tr>
<tr>
<td>Tall fescue</td>
<td>3 or more</td>
<td>Bermudagrass</td>
<td>½–1</td>
</tr>
</tbody>
</table>
WATERING

A lawn can be maintained without extra water. Although unattractive, a lawn that is brown and dormant in summer will usually bounce back and be quite attractive in the fall. Irrigation is necessary, however, to keep the lawn attractive during extended dry periods.

A well-established lawn will usually need to be watered only once every 7 to 10 days during dry periods, or just often enough to keep the grass green. If the lawn is on a sandy soil or a south-facing slope, it may need to be watered oftener. The appearance of the grass can be used to indicate the need for irrigation. When the grass wilts (takes on a bluish-purple cast and becomes limp) it is time to water.

The soil should be wet 5 or 6 inches deep at each watering. The amount of water necessary to wet the soil this deep can be determined through trial and error. On the day after a watering, you can check the depth of watering by digging in a flower bed or other cultivated place that was watered with the lawn. The length of time that the sprinklers were running to wet the soil this deep should be recorded as a guide for future watering.

GROWING GRASS IN THE SHADE

Shade — particularly that from trees and building — is often the most serious problem in keeping an attractive lawn. Following are some suggestions for growing grass in the shade:

• Choose a shade-tolerant grass; red fescue and Kentucky bluegrass for areas under trees; rough bluegrass (*Poa trivialis*) and Kentucky bluegrass for damp, shady areas. Seeding or sodding in the fall after the leaves are off the trees will usually produce the best results. (See section on renovation, page 9.)

• Selectively prune the trees so that more light will fall on the grass.

• Dig out some of the shallow tree roots to decrease the competition between the trees and grass for water and fertilizer.

• Fertilize the trees and follow a recommended fertilizer program for the grass to keep it vigorous.

• Collect and destroy any debris that collects under the trees.

• If necessary, apply fungicides to keep powdery mildew in check.

• If repeated attempts to grow grass in the shade have failed, it may be necessary to grow a ground cover such as periwinkle, Japanese spurge, or purple-leaf wintercreeper. Or the area may be covered with stone and designed into the existing landscape.

(Note: Helpful information is available in “Fertilizing and Watering Trees,” Circular 52, Illinois Natural History Survey, Urbana, Illinois 61801.)
**AERIFICATION**

Aerification should be beneficial in areas that have been compacted by traffic or where the soil is naturally impermeable. Aerification may also help reduce the thatch problem that exists in some home lawns. Both mechanical and hand aerifiers are available.

**ROLLING**

A rough lawn may suffer from scalping injury when it is mowed. Lawns are therefore often rolled in the spring to firm soil that has heaved from freezing and thawing. Soil should not be rolled when it is too wet. It should be rolled only when a ball of the soil is easily broken apart and is not muddy and sticky. A roller that weighs less than 100 pounds per foot of width is satisfactory.

**RAKING**

Rake the lawn before the first mowing to remove dead grass, leaves, twigs, and other debris. Stones, wire, and similar objects that have accumulated during the winter can be especially dangerous when a rotary mower is used. Raking leaves in the fall will help to prevent them from smothering the grass.

**RENOVATION**

Occasionally a lawn will be in such poor shape that the normal maintenance program will not produce the desired quality. Two solutions are possible: start a new lawn or renovate the old one. Renovating the lawn can be accomplished by removing the thatch with a vertical-cutting mower and then removing the thatch. A vertical-cutting mower will loosen the thatch so that it can be removed from the lawn with a rake or lawn sweeper.

(Fig. 1)
vation is usually preferred. Many professional landscapers are equipped to renovate lawns. If you prefer to do the job yourself, following are some suggestions.

Thatch, or accumulated debris at the soil surface, may hinder water and air penetration into the soil. Equipment such as aerifiers and vertical-cutting (dethatching) mowers may be used to reduce the thatch problem (Fig. 1). The debris left on the surface by the verticutter should be removed with a rake, lawn sweeper, or some other appropriate tool. Any special dethatching equipment should be used according to the manufacturer's directions.

Bare areas caused by weed removal, insects, or diseases can be re-established by seeding or sodding. Holes and other depressions in the lawn should be filled and packed with topsoil before seeding or sodding.

Renovation of course involves correction of any problem, such as too much shade, weeds, insects, or diseases, which may have caused poor turf quality. Proper fertilizing, mowing, watering, and other maintenance practices are necessary to achieve the most improvement from renovation.

**LAWN INSECTS**

In Illinois several insects may cause problems in home lawns. The sod webworm and grubs of various insects are most likely to cause serious lawn damage. Timely treatment to control the insects will help to minimize damage. Landscape contractors and other professional lawn-maintenance personnel are equipped to handle insect problems.

**Sod webworm**

The sod webworm is the larva of the lawn moth or miller. This gray or dusky green worm with a dark brown head has rows of brown spots the length of the body (Fig. 2). The larva reaches a length of about $\frac{3}{4}$ inch before pupating and forming a moth.

The webworm, which has a tremendous appetite, feeds on the grass at night, retreating into a web-lined burrow during the day. It may cause damage from June through the rest of the summer. Irregular brown patches in the lawn are often the first indication of webworm infestations. Close examination of the grass where the webworm has fed will reveal short clippings and grass cut close to the soil. A well-maintained lawn can support up to four sod webworms per square foot without noticeable damage. Suggestions for webworm control are to be found in Table 3, page 12.

**Grubs**

Grubs are the larvae of several beetles, usually of the June beetle. The grub has a white to gray, thick body with a dark head and posterior and with six legs near the head (Fig. 3). It will roll up into a ball when
The sod webworm (left) feeds on the grass blades. It is one of the most destructive lawn insects in Illinois—if not the most destructive. (Fig. 2)

Grubs (below) feed on the grass roots and can be seen only by digging beneath the surface of the soil. (Fig. 3)

picked up. Grubs of the June beetle, or the true white grubs, have a life cycle of 2 to 3 years from egg to beetle.

The white grub burrows in the soil, feeding on grass roots. Often in grub-infested lawns the grass will die in circular patches a foot or more in diameter. In these areas the grubs will have cut so many roots that pieces of sod can be easily lifted from the soil.

Before applying grub-control chemicals, examine the soil under the damaged sod to make sure that grubs are present. The dead grass may be due to other causes such as disease, dog urine, or some buried object.

Control recommendations for the grub are to be found in Table 3, page 12.

Other insects

Occasionally other insects, such as the armyworm and cutworm, may feed upon the grass, and insects such as ants, millipedes, and chiggers may occasionally be a nuisance in home lawns. Recommenda-
### Table 3 — Insecticides for the Control of Common Lawn Insects

<table>
<thead>
<tr>
<th>Insects</th>
<th>Insecticide&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Dosage per 1,000 sq. ft.&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>True white grubs</td>
<td>Chlordane 45% E.C.</td>
<td>½ cup</td>
<td>Provides 5-year protection. In established sod, apply as granules or spray to small area and then water in very thoroughly before treating another small area. For new seedings, mix in soil before planting. Do not plant vegetable root crops in treated soil for 5 years.</td>
</tr>
<tr>
<td>Annual white grubs</td>
<td>Diatomaceous earth 40% W.P.</td>
<td>5 oz.</td>
<td></td>
</tr>
<tr>
<td>Japanese beetle larvae</td>
<td>10% G.</td>
<td>1¼ lb.</td>
<td></td>
</tr>
<tr>
<td>Green June beetle larvae</td>
<td>5% G.</td>
<td>2½ lb.</td>
<td></td>
</tr>
<tr>
<td>Ants</td>
<td>Diazinon 25% E.C.</td>
<td>¾ cup</td>
<td>Apply as spray or granules and water in thoroughly. For individual nests pour 1% diazinon in nest. Seal in with dirt.</td>
</tr>
<tr>
<td>Cicada killer and other soil-nesting wasps</td>
<td>Diazinon 2% G.</td>
<td>5 lb.</td>
<td></td>
</tr>
<tr>
<td>Sod webworms</td>
<td>Carbaryl 50% W.P.</td>
<td>½ lb.</td>
<td>As sprays, use at least 2.5 gal. of water per 1,000 sq. ft. Do not water for 72 hours after treatment. As granules, apply from fertilizer spreader.</td>
</tr>
<tr>
<td>Millipedes and sowbugs</td>
<td>Diazinon 25% E.C.</td>
<td>¾ cup</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carbaryl 50% W.P.</td>
<td>5 lb.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diazinon 2% G.</td>
<td>5 lb.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trichlorfon 50% W.P.</td>
<td>4 oz.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trichlorfon 5% G.</td>
<td>2½ lb.</td>
<td></td>
</tr>
<tr>
<td>Armyworms</td>
<td>Carbaryl 50% W.P.</td>
<td>2 oz.</td>
<td>Apply as sprays or granules. Use 5 to 10 gal. of water per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Cutworms</td>
<td>Carbaryl 50% W.P.</td>
<td>1 lb.</td>
<td></td>
</tr>
<tr>
<td>Chinch bugs</td>
<td>Carbaryl 50% W.P.</td>
<td>1 oz.</td>
<td></td>
</tr>
<tr>
<td>Leafhoppers</td>
<td>Carbaryl 50% W.P.</td>
<td>2 oz.</td>
<td>Apply as a spray.</td>
</tr>
<tr>
<td></td>
<td>Methoxychlor 25% E.C.</td>
<td>2 oz.</td>
<td></td>
</tr>
<tr>
<td>Chiggers</td>
<td>Diazinon</td>
<td>1 tbsp.</td>
<td>Spray grass thoroughly.</td>
</tr>
<tr>
<td>Mites</td>
<td>Dicofol 18.5% E.C.</td>
<td>1 tbsp.</td>
<td>Spray grass thoroughly, 2 to 2.5 gal. of water per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Slugs</td>
<td>Slug baits</td>
<td>Scatter in grass</td>
<td>Apply where slugs are numerous.</td>
</tr>
</tbody>
</table>

<sup>a</sup> E.C. = emulsion concentrate; W.P. = wettable powder; G. = granules.

<sup>b</sup> To determine lawn size in square feet, multiply length times width of lawn and subtract non-lawn areas including house, driveway, garden, etc. Do not allow people or pets on lawn until spray has dried.
tions for the control of the insects likely to be found in a home lawn are given in Table 3. (For additional information, see “Lawn Insects, How to Control Them,” U.S. Department of Agriculture Home and Garden Bulletin 53.)

DISEASES

If at all possible, diseases must be prevented from becoming so serious that they lower the quality of the lawn. Although several diseases may occur in lawns, most homeowners will likely find that only one or two of the more common diseases are doing enough damage to cause concern. Lawns that are shaded, are watered too frequently, or tend to remain wet for long periods are most likely to have serious disease problems.

A lawn that is fertilized, watered, and otherwise managed properly will usually recover from a disease more rapidly than one that is poorly maintained.

Certain grass varieties are more susceptible to a given disease than other varieties. Merion Kentucky bluegrass, for example, is susceptible to powdery mildew but has marked resistance to melting out, which is destructive to certain other Kentucky bluegrass varieties. Since powdery mildew is a problem in shaded areas, Merion is not recommended for such locations. Colonial and creeping bentgrasses are more susceptible to disease than the bluegrasses, and a preventive fungicide program is usually needed to keep them free from diseases and looking good.

Certain lawn diseases are most troublesome in the spring while others may be more likely to occur in summer or fall. It is helpful to know the time of year that certain diseases occur so that the correct preventive measures may be taken to reduce the damage.

Snow mold

Both pink and gray snow mold occur under the snow and may attack grass in spots up to a foot or more in diameter. The injury is most likely to occur as the snow melts off the lawns in the spring, especially in northern Illinois. Heavy fertilizing in the fall will increase the succulence of the grass and hence its susceptibility to snow mold. Regular mowing late in the fall will prevent matting and will reduce the likelihood of snow mold development. If snow mold occurs frequently, a preventive fungicide applied just before snowfall should keep the disease from recurring the following spring. Construction of a snow fence to keep snow from accumulating on disease-prone areas is also helpful.

Fairy rings

Fairy rings, which are caused by fungi, occur as circles or arcs of dark green or dead grass. The grass in the ring will grow rapidly and have a good color in the spring, but will dry out during the dry summer
months. The dark green or dead circles are sometimes outlined with toadstools, the fruiting bodies of the fungi. Well-watered and fertilized lawns are less troubled by fairy rings than those that are poorly maintained. Symptoms of fairy rings can be masked in the summer by periodically forcing water into the rings with a tree root feeder on the end of a garden hose.

**Melting out**

Melting out, also known as leaf spot, causes serious damage to many of the Kentucky bluegrass and red fescue varieties. First symptoms of this disease are small dark spots on the leaves. The infections may kill the leaves and crowns and ultimately cause a general browning or melting out of the grass. A few varieties of Kentucky bluegrass, including Merion, have resistance to this disease. Maintenance practices such as removal of thatch, proper watering, and reduction of shade will help to keep this problem at a minimum.

**Powdery mildew**

This disease is troublesome in shady areas. It looks much like powder or flour on the leaves of the grass. Plants may be killed, causing a general thinning and browning of the grass. Powdery mildew can be especially detrimental to Merion Kentucky bluegrass planted in shady areas.

**Disease control**

Several fungicides have been developed for the control of specific diseases, although only a few are sold in small enough packages for an individual homeowner's use. Often fungicides must be used on a preventive basis to be satisfactory.

“Lawn Diseases in the Midwest,” North Central Regional Extension Publication 12, gives a thorough discussion of maintenance and fungicides that may be used to control specific lawn diseases. It is available from your county extension adviser.

**WEEDS**

Following a good fertility and maintenance program will help produce a dense stand of grass that will not be especially troubled with weeds.

Many different 2,4-D products on the market will do an excellent job of controlling dandelions, buckhorn, broadleaf plantain, and many other common broadleaf weeds. Harder to control broadleaf weeds, such as common and mouse-ear chickweed and prostrate knotweed, can be satisfactorily controlled with silvex, MCPP, and dicamba. The annual grass weeds, such as crabgrass and foxtail, can be satisfactorily controlled with the pre- or post-emergence herbicides available today.
The weeds most difficult to control in home lawns are the perennial grasses such as tall fescue, quackgrass, bentgrass, and nimblewill. To rid a lawn of these weeds, it is often advisable to dig out the individual clumps, making sure that the entire plant has been removed. Sometimes non-selective herbicides may be used to spot-treat the perennial grasses. The area from which the weed has been removed should be seeded or sodded with the grass variety already growing on the lawn.

Always read and follow the directions on the pesticide container. The prescribed rates and methods of application for best results are given clearly.

For additional information, see “Lawn Weeds: Identification and Control,” University of Illinois Agricultural Extension Service Circular 873.

OTHER LAWN PESTS

Moss

Moss may occur in the lawn if conditions are poor for growing grass. Low fertility, dampness, and other environmental conditions may contribute to the growth of moss. The problem will persist unless conditions are changed to favor the grass over the moss.

Moles

Several different traps, available at garden and hardware stores, are satisfactory for ridding lawns of moles. Or insecticides may be used to destroy the insects, such as grubs, which the moles feed on. Moles are not easily controlled with poison baits.

Toadstools and Mushrooms

Toadstools and mushrooms are the fruiting bodies of the fungi that break down the organic matter in the soil. These organisms are frequently abundant in lawns where trees have been cut down. Certain fungicides will temporarily halt mushroom and toadstool development; however, it will recur as soon as the fungicide dissipates. Removal of the tree stumps and roots will keep toadstools and mushrooms from developing.

Toadstools and mushrooms may be poisonous if eaten.

Dogs

A frequent problem in home lawns is injury caused by the urine of dogs, particularly female dogs. The injury appears as brown or dark green patches. A few dog repellants work fairly well, but are generally more effective on flowers and shrubs than on grass. If it is not practical to fence the home lawn, perhaps the best way to keep dog injury to a minimum is to keep the lawn well cared for so the “sore spots” will heal over rapidly.
USE PESTICIDES SAFELY

Read the entire pesticide label
   Be sure that you have the right chemical for the job and that you apply it right.

Handle pesticides carefully
   Keep them away from children and pets. Lock up leftover pesticides before you begin to spray.
   Avoid drift.
   Wear rubber gloves and other protective clothing if specified.
   Thoroughly wash exposed parts of body and clothing after spraying.
   Safely dispose of empty containers.

Store pesticides safely
   Keep them in their original containers.
   Store in locked cabinets out of the reach of children.