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Stop Lawn Pests!

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A GOOD DENSE turf is your first line of defense against lawn pests—weeds, insects and diseases. If your lawn has been properly constructed and properly maintained, it will be resistant to weed invasions and tolerant of attacks by insects and diseases.

This doesn't mean your lawn will be immune to these pests. Even under the most favorable growth conditions, the numbers of weed seeds or the potential for disease or insect attacks may be so great that a turf can't maintain enough vigor to survive.

Chemical control of weeds and diseases usually are necessary only where cultural practices in some degree have "fallen short."

There's little to be gained from killing weeds and stopping the spread of diseases if your turf isn't able to recover and to fill in the bare spots. Poor soil fertility and less-than-necessary maintenance practices often are responsible for the invasions of lawn pests.

Maintenance First . . .

To keep your lawn resistant to weed invasions and disease attack, always follow these important practices:

1—Fertilize at least twice a year—in spring and early fall. Use a lawn-type fertilizer with a descending nutrient ratio such as 10-6-4 (see "GO for a Better Lawn!" in the May issue or re-print FS-868). This will keep your turf thick and better able to crowd out weeds.

2—Water only when the soil becomes dry, and then water deeply—to a depth of 4-6 inches. This will reduce germination of crabgrass seeds in June and July and favor the development of a better, deep-rooted turf.

3—Mow regularly at a 1 1/2 inch height of cut. It's especially important to mow high in the late spring when crabgrass is getting started. Any shade reduces the vigor of a crabgrass seedling.

4—Remove clippings from the lawn whenever you clip more than one-third of the total leaf area from the plants in one mowing or whenever the clippings are more than 1 inch in length. Catch the clippings while mowing, or rake following mowing, to help prevent accumulations. When crabgrass or other lawn weeds are seeding, catch and burn the clippings to destroy as many seeds as possible.

5—Aerify compacted areas to loosen the soil before weeds take over. Improved penetration of water and fertilizer following aeration often permits the turf to become sufficiently aggressive to crowd out weeds which have become established.

Weed Control . . .

Chemical weed control is advisable when weeds are present in large numbers. Use care in applying herbicides according to directions. Read the label on the container before buying. Make sure that you understand the method of application and that the necessary spray or spreading equipment is available. Treat only your lawn with chemical herbicides. Many of these materials will injure other ornamentals or vegetable and farm crops. Clean garden sprayers used for weed killers carefully after use. Don't use them for applying materials other than herbicides.

You can eradicate many of the most troublesome perennial weeds with chemical herbicides containing 2,4-D. This chemical is available under several trade names in both liquid and solid forms. Make treatments in mid-spring or in the fall when soil moisture levels are high and when weeds are growing vigorously.

Dandelion, plantain and buckhorn usually are completely killed with one application. Chickweed, ground ivy, yellow sorrel and yarrow are sensitive to 2,4-D but often require more than one treatment for absolute control.

For repeated applications of 2,4-D, time them so that the weed is just starting to recover before the next application. By continuing treatments in this way over

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Mature knotweed (top), and seedling knotweed.

Yellow wood sorrel.

Mouse-ear chickweed.

Mature crabgrass.

Broadleafed plantain.

a period of 1-2 months, even difficult-to-kill weeds can be worn down and eliminated. Intervals between treatments usually should be about 7-14 days.

Weeds showing resistance to 2,4-D often are most susceptible to control by using a mixture of 50 percent 2,4-D and 50 percent 2,4,5-T or 100 percent 2,4,5-T. Knotweed and clover are examples of this type of weed. Spray knotweed in the spring with 2,4,5-T when the weed is just getting started. It's difficult to kill when mature with any chemical that won't also destroy the grass. Clover may be desirable in some lawns. But since it detracts from the uniformity of the turf, it's often considered a weed. One spring or fall application of 2,4,5-T usually will give good control of clover.

Crabgrass frequently is the most troublesome of all lawn weeds. It's an annual. Thus the source of next year's plants is this year's seed. Crabgrass seeds aren't found as a contamination in lawn seed mixtures. If crabgrass suddenly appears in your lawn, it's likely that the seed has been blown, washed or carried into the lawn by man or other animal. Crabgrass thrives under hot, dry summer conditions. Since turf-grasses usually are less aggressive at this time of year than any other, crabgrass may quickly gain possession of large areas.

You can carry out chemical control of crabgrass in two ways. (1) You can kill the seed by applying chemicals to the turf before crabgrass germination in May or early June. (2) You can kill the plants after they start to grow.

Crabgrass-control chemicals to be applied before seeds germinate include chlordane and various arsenic compounds, including calcium arsenate. These materials are available under several trade names and may be applied in solid form. Materials to be applied to the young plants include disodium methyl arsonate, potassium cyanate and phenyl mercuric acetate. (Don't use phenyl mercuric acetate on a Merion bluegrass, however, since severe injury may result.)

Applications of herbicides on mature crabgrass are never as effective as on seedling plants. Also, once seed has set, the only beneficial effect of the chemical is in reducing germination of the seed. You can accomplish this better with a pre-emergence chemical. Whatever chemical you use, make sure that you apply it according to the manufacturer's directions.

Weeds in New Lawns: Good garden soil normally contains many weed seeds. So the presence of weeds in a seedling turf often is unavoidable. Many of these weeds won't tolerate mowing and will disappear under normal lawn maintenance. Soils heavily infested with weed seeds may be sterilized in advance with such materials as Dowfume, Vapam or Mylone to create a weed-free seedling turf.

Don't treat a seedling turf with weed killers. Grasses less than 4 months old are extremely sensitive...
to injury. Fall and early spring seeded lawns usually contain fewer weeds than lawns seeded at other times since cool, moist weather favors turfgrass development more than weed growth.

**Turfgrass Diseases . . .**

It’s often assumed that any brown spot that occurs in a lawn is the result of a disease. This isn’t necessarily correct. Lack of water or the presence of excess soil moisture may produce symptoms which can be mistaken for disease injury. Chemical burn or fertilizer scorch, insect damage, animal excretions and mechanical injuries are other causes of disease-like patches.

Several fungus diseases, however, are common on lawn turf. Learn to recognize them and how to control them with proper cultural and chemical practices.

As with weeds, stopping the spread of a fungus disease won’t lead to an improved turf unless soil conditions encourage the development of fine turf. Too much moisture at the soil surface and poor fertility are commonly related to the occurrence of disease injuries. Poor air circulation in a part of the lawn may result in prolonged hot and humid conditions—ideal for the spread of a disease. Thinning out woody vegetation to improve air movement is helpful in such a case.

Of the several turfgrass diseases, rust, leaf spot, fairy ring and snow mold are the most common:

**Rust** may be recognized by the presence of yellowish-orange to reddish-brown powdery pustules on leaves and stems. It’s serious on Merion bluegrass and ryegrass during hot, dry weather when the grass isn’t growing vigorously. Foliage turns yellow; leaves shrivel, and the turf thins out.

Fertilizing a week or two before the disease is expected, followed by proper watering throughout the summer, will stimulate the grass so that it can better survive the infection. Frequent clipping to remove infected plant parts helps to keep rust under control.

**Leaf spot** develops on foliage of bluegrasses, fescues and bentgrasses as purple-to-brown areas. These often enlarge up to half an inch long and may develop light-colored centers and dark reddish-purple margins. Where leaf blades are girdled, the tips shrivel, turn yellow and die. Where the crowns, stems and roots are infected, the turf thins out rapidly as plants die. Conditions for leaf spot are ideal during the moist, cool weather of spring and fall. Turf weakened by this disease is easily invaded by crabgrass and broadleaf weeds.

Merion bluegrass is tolerant of leaf spot and normally doesn’t require chemical control measures. You can protect other bluegrasses by fungicide applications at 2-3 week intervals before and during the period of infection. Zineb, phenyl mercury, Tersan, Tersan OM, Thimer, Actidione-Thiram, Kromad and Captan have been found effective for leaf spot control.

**Fairy ring** may first be recognized by the presence of rings of darker, faster-growing grass in which toadstools, mushrooms or puffballs may appear following heavy watering or rains. These are the fruiting bodies of a fungus which grows below ground and feeds on dead and decaying organic matter. The fungus doesn’t attack the grass but competes...
with it for moisture and space much like a weed. This competition may become so great that some of the turf within the ring may die.

In other cases, the presence of the fungus in the soil may result in localized dry patches that never produce good turf. Soil aeration is helpful in encouraging the grass in these locations. Use of wetting agents and ample nitrogen fertilizer will help to wet the soil and decompose the organic matter present. Applying dilute monthly drenches of fungicides such as phenyl mercury, mercury chlorides or copper sulfate to the rings may help to slow down their development.

**Snow mold** may often be noted in early spring as snow cover leaves the ground. More or less circular patches of bleached brown turf appear in low, moist areas where grass cover has been thick. This disease normally develops under a snow cover, particularly where snow has been compacted. Snow mold scars often take the shape of footprints, ski tracks or bicycle or wagon tire marks. After the disease can be recognized, however, it’s too late to apply a fungicide.

Brush or rake the injured turf to allow air and sunlight into the sod. Fertilize and water carefully during the early spring months to encourage rapid recovery. If sections of your lawn are frequently infected with this disease, treat them chemically just before the first expected snow in early winter and again, if possible, during a January or February thaw. Tersan OM, Thimer, Calo-chlor and Calocure are effective in preventing mold when used in this way.

**General control:** Various chemicals are recommended for general disease control on lawns. Preventive treatments are more effective than curative treatments since early detection of a disease is essential to halting injury once the fungus is activated. The new “broad-spectrum” fungicides, such as Tersan OM, Kromad, Thimer and Actidione-Thiram, generally are effective for all lawn diseases. Follow directions carefully in using these materials—especially on the rate and timing of applications.

Where diseases are suspected and turf doesn’t respond to treatment, cut two or three samples of turf about 3 inches square and 2 inches deep from the edge of the infected area, including some healthy turf. Wrap these plugs in aluminum foil or polyethylene and mail them to the Extension Plant Pathologist here at Iowa State. Attach a letter to each sample stating briefly the past history or condition of the lawn. Once the fungus pathogen is identified, a specific fungicide can be recommended for control.

**Insects, Animals . . .**

Lawns may be severely injured by chewing or sucking insects which attack the base or upper roots of grass plants. **Grubs** of the Japanese and June beetle work below ground where they destroy roots. You’ll see injury to the turf in these cases as a loss of green color, followed by wilting and death of the grass. Sod may be lifted easily where grubs have eaten away the roots, and the shape of the injured sod will usually conform with the feeding pattern of the grubs.

Several species of **sod webworms** attack lawn grasses. The short, thick-bodied larvae chew off blades of grass at the ground level, sometimes leaving only small amounts of brown, matted grass. **Ants** may build their homes in lawns. The piles of soil at the entrances to ant galleries interfere with grass growth and make the lawn unsightly and harder to care for.

Your lawn needn’t be spoiled by these insect pests. Early detection and diagnosis of the insect causing the trouble, followed by proper use of an insecticide, will stop damage to your turf before it becomes severe.

Besides noting the insects themselves, the presence of more birds or skunks than normal may serve as a warning of increased insect populations. These animals, like moles, feed on lawn insects.

Insects often produce patches of brown turf similar in appearance to those produced by diseases. It isn’t always easy to know whether a fungus or insect is causing the trouble. Weeds are seldom bothered by either diseases or insects and may gain entrance to a lawn as grasses die out as the result of a slow-developing insect infestation. Remember that chemical control of insects won’t in itself repair damage already done to the lawn. Proper turf care after treatment will aid in speeding recovery.

As soon as insect populations reach harmful proportions, control them by applying 4 ounces of 25-percent aldrin emulsifiable concentrate, 6 ounces of 15-percent dieldrin emulsifiable concentrate or 4 ounces of 45- to 50-percent chlordane emulsifiable concentrate per 1,000 square feet. These insecticides must be soaked into the soil by thorough watering following application. The chemical won’t kill insects it doesn’t reach.

Other formulations of these chemicals such as dusts, granules or wettable powders are available and should give good control if applied in amounts containing equivalent active ingredients. These materials also are helpful in controlling **clover mites** and **chiggers.** Where complete control isn’t obtained with one application, repeat treatments may be needed. Residual effects of these materials, however, should last from 3 to 5 years.

**Earthworms** generally are of value in helping to keep lawns in good condition. But they may become so prevalent that their castings make the soil surface extremely rough and uneven. If so, apply 1 1/2 pounds of actual chlordane in 5 gallons of water per 1,000 square feet. This dosage will reduce, but not eliminate, earthworms and also will control any lawn insects present. Applied about May 1, this amount of chlordane prevents germination of crabgrass seeds. Soak the lawn thoroughly following application.

Weeds, diseases and pests need not spoil the uniformity of your turf. You can stop them before they make serious inroads. Start with recommended regular lawn care. Control weeds, diseases and pests as necessary, and continue the upkeep of your first line of defense—a good dense turf.