



## HOW-TO BOOKLET #3096

# CONTROLLING TURF PESTS

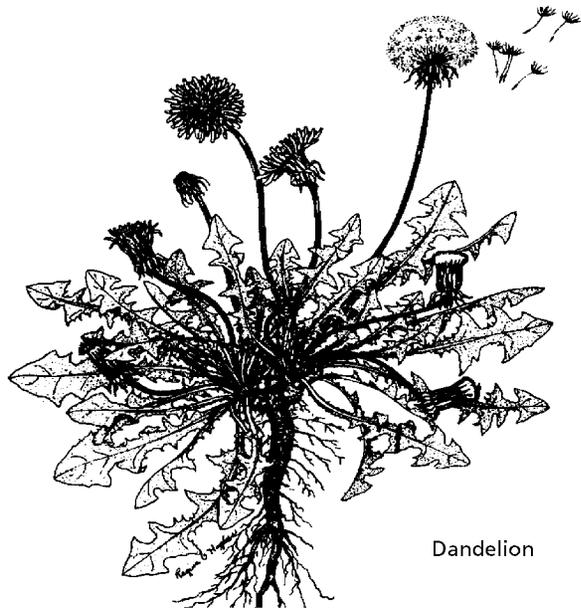


### TOOL & MATERIAL CHECKLIST

- The Proper Chemical
- Rubber or Plastic Gloves
- Chemical Applicator
- Respirator

*Read This Entire How-To Booklet for Specific Chemicals and Applications.*

Fig. A



The key to proper pest control in lawns is based on good lawn maintenance. A well maintained and healthy lawn can avoid many diseases and problems caused by insects. A vigorously growing lawn crowds out weeds and therefore reduces the need for pest control.

### FIVE STEPS TO A HEALTHY LAWN

**1 Plant adapted grasses.** Plant types of grass that are adapted to your region and the conditions that exist in your lawn. In the northern United States, where Kentucky bluegrass is widely grown, many different varieties are available.

Perennial ryegrass and turf-type tall fescues are suitable for sites where lawn watering is limited. Warmer weather areas of the country would do better using other types of grasses such as Bermuda grass or zoysia grass (see How-To Booklet #3092 “Greener Grass” for more on types of lawn grasses).

**2 Fertilization.** Provide fertilizer as needed for healthy plant growth. Avoid high application rates of fertilizers, particularly quick release nitrogen fertilizers, at any single period. High rates of nitrogen overstimulate shoot growth at the expense of root development. Overstimulated plants are more susceptible to many lawn diseases. They also require more watering and mowing. For most lawns, fertilization every two months during the growing season works well (see How-To Booklet #3095 “Lawn Fertilizers” for more information on fertilizers).

**3 Watering.** Water in a way that promotes deep root growth. Infrequent deep watering of 1/2–1 inch is better than frequent shallow watering. Water early in the morning. Leaf blades will dry quickly afterward which helps reduce leaf diseases.

**4 Mowing.** Use a sharp mower blade to avoid ragged cuts. Never “scalp” the lawn since this increases exposure of the grass crowns to temperature extremes and discourages root growth. As a general rule, mow at a height of about 2 1/2–3 inches, never removing more than one-third of the leaf area.

**Note:** Mowing heights may be increased somewhat during hot months, reduced slightly during cooler periods.

Lawn clippings do not need to be removed if they are short. As the clippings decay they release nutrients and reduce fertilizer needs.

**5 Aeration.** Periodically aerate the lawn to improve compacted areas or places where thatch (accumulated dead plant debris) blocks water and nutrients. You can use either a motorized or a foot-press type of aerating machine.

## WEED CONTROL

Annual (single season) weeds such as crabgrass, chickweed, and spurge can be controlled by use of pre-emergent herbicides, which kill germinating seeds or newly sprouted weeds. Since they do not affect older plants, these herbicides must be applied before the weed seeds have sprouted.

Post-emergent herbicides kill weeds that already exist in lawns. Many of these herbicides are selective and only kill certain types of plants. For example, MCPP and 2, 4-D are selective herbicides that only kill broadleaved plants such as dandelions, chickweed, and thistle. Other herbicides, such as fluazifop-butyl (Grass B-Gon) only kill grasses. In addition, there are many non-selective herbicides,

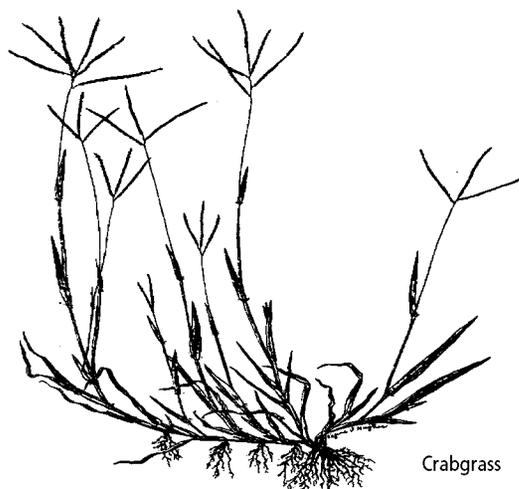
such as glyphosate (Round-up, Kleen-up, etc.) which kill most plants.

It is often best to spot treat individual weeds by digging with a hand weeder or applying herbicides.

**Dandelions.** Although the dandelion (**Fig. A**) was first brought to North America as a food plant, most people today do not appreciate its virtue. It is the weed most homeowners fight the hardest. Dandelions are perennial weeds that live for several years once they have become established in a lawn, their bright yellow flowers first appearing in spring.

Post-emergent herbicides such as 2, 4-D, MCPP, MCPA, and dicamba can kill dandelions during any period when the plants are actively growing, but are particularly effective in the fall.

**Fig. B**



**Crabgrass.** An annual weed that grows from seeds produced in previous years, crabgrass (**Fig. B**) seeds sprout early in the spring and continue to sprout through early summer. Pre-emergent herbicides, such as pendimethalin, must be applied before seeds sprout in order to be effective. (First

bloom of forsythia is a common natural indicator for application timing in many areas.)

Post-emergent herbicides, such as MSMA can also suppress crabgrass. However, this treatment can cause desirable grasses to discolor temporarily, particularly if not used carefully.

**Fig. C**



**Chickweed.** Like crabgrass, chickweed (**Fig. C**) moves aggressively into areas of the lawn that have thinned. However, these plants sprout in the fall and the plant grows during the winter. Small white flowers begin to be produced in early spring along with seeds.

Post-emergent herbicides such as MCPP can kill chickweed plants, particularly if they are small. Pre-emergent herbicides, such as DCPA and benefin, applied in fall can prevent new seeds from germinating.

## DISEASE CONTROL

Most disease problems in lawns result from overuse of nitrogen fertilizers, short mowing or environmental extremes. Disease problems are often best controlled by changing lawn care practices or use of specific types of fungicides.

**Fairy ring.** This produces spreading circular rings of dark green grass on a lawn (**Fig. D**). Often grass at the edge of the ring dies and mushrooms sprout. The circles are most easily seen in spring before lawns turn green, but are present throughout the year.

Fairy ring is caused by a fungus that first grows on clumps of organic material such as tree stumps and construction debris underground. Once established, the fungus remains permanently in the lawn, growing slowly outward.

Fairy ring can not be controlled with pesticides. Light applications of nitrogen fertilizer can mask the green rings. Aeration or uses of wetting agents, such as dilute detergent, can also help affected grass grow around the edges of a fairy ring.

**Dollar spot.** Grass infected by dollar spot (**Fig. E**) causes small circular areas of the lawn to become straw-colored and to die out. Warm, wet weather favors dollar-spot disease. Aeration of compacted or poorly drained soils can help correct the condition. Preventive use of fungicides such as Daconil, benomyl, and PCNB can also be effective.

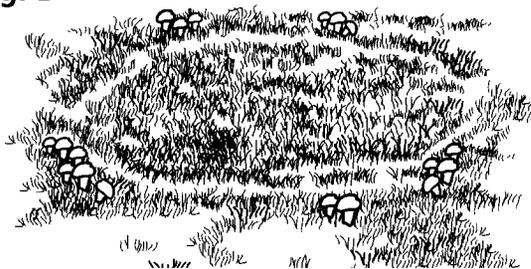
**Melting out.** Gradual lawn thinning may result from “melting out” disease (**Fig. F**), caused by infection of several fungi. Affected grass is yellow and often blotchy, later turning brown or straw colored and dying out. The disease occurs in a range of climates, but is most severe with warm or hot temperatures and high humidity.

Use Daconil (sprayed) or PCNB (applied as granules) as a preventive before the disease occurs.

## SAFETY COMES FIRST

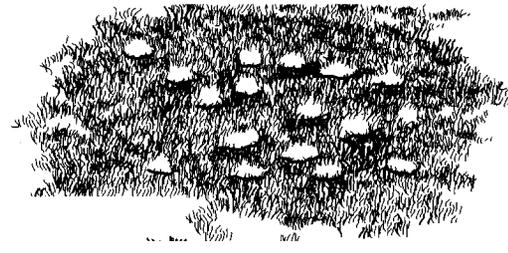
- 🏠 Check with local and state codes regarding use and purchase of pesticides. Always read and follow label instructions before purchasing and applying any pesticides.
- 🏠 Only use pesticides that specify use on lawns and obey any warnings on the label.
- 🏠 Try to purchase only the amount of pesticide that you will need. This avoids problems with storage and disposal of excess material. If any chemicals are left, package them and store them where children and pets can not get at them. Never store pesticides near food or food preparation equipment, such as barbecues.
- 🏠 Keep children away when mixing and applying chemicals.
- 🏠 Do not allow turf grass pesticides to contact fruit and vegetable crops, unless the label specifically allows this use. Thoroughly wash any food that comes in contact with chemicals.
- 🏠 Use a separate sprayer for herbicides and clean the equipment as soon as you finish the application.
- 🏠 Avoid using herbicides near trees and shrubs.
- 🏠 Do not apply pesticides during high temperatures or during windy conditions.
- 🏠 Always wear protective clothing when applying pesticides such as rubber or plastic gloves (never cloth or leather gloves which absorb pesticides), long pants and a long-sleeved shirt.
- 🏠 Use a respirator and wear safety goggles.
- 🏠 Wash skin and clothing if spills occur and after applying pesticides.
- 🏠 Do not smoke while you are working with the chemicals.
- 🏠 If you must mix chemicals, do it outside.
- 🏠 Follow any cautions concerning applications in drainage areas.
- 🏠 Be especially careful using turf grass pesticides that are hazardous to birds (diazinon, bendiocarb), earthworms (bendiocarb, carbaryl, benomyl) or other non-target animals.

**Fig. D**



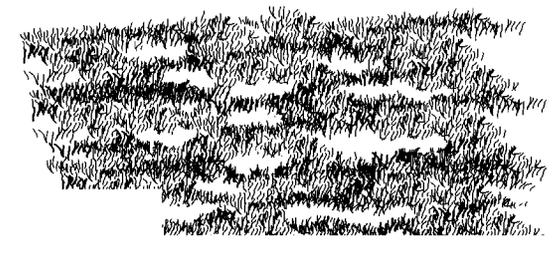
Fairy Ring

**Fig. E**



Dollar Spot

**Fig. F**



Melting Out

## INSECT CONTROL

Insects can occur even in a healthy lawn and it is impractical to attempt to control them all (**Fig. G**). Insecticides are most effective when used at specific periods in an insect's life cycle, but only consider their use if severe lawn damage is threatened.

**Mite** problems in turf grass are related to drought conditions. These insects damage the plants by sucking out their juices. A serious mite problem can usually be prevented by providing adequate water.

Only garden sprays containing a miticide should be used. Common insecticides do not affect mites, but do kill insects that feed on mites.

**White grubs** chew the roots of grasses causing them to die from lack of water. Peak injury by grubs often takes place in late summer and early fall.

The most effective time to use insecticides is shortly after the eggs hatch and the grubs are small (usually early August). Large grubs are immune to most insecticides and lawn thatch can temporarily prevent insecticides from reaching the grubs. Diazinon, Sevin, and

Oftanol are among the more effective white grub insecticides.

Adult stages of white grubs are beetles known as "May," "June," or "Japanese" beetles or chafers. These are most commonly seen in late spring and early summer during which time they lay eggs.

The grub (larva) stage of the **billbug** chews the roots and tunnels into the developing crown area of grasses, leaving little piles of sawdust-like debris. Damaged grass dies out in spots and the blades pull easily from the plant when given a simple tug. Peak damage usually occurs in early summer as the grubs grow larger.

Although it is young grubs that do the damage to the lawn, it is difficult to control the billbugs during this stage. However, adult billbugs, a type of snout beetle, are present during April through May in most areas and can be controlled with Dursban, Sevin, Diazinon, and Oftanol. The object is to kill the billbugs before they have a chance to lay eggs.

**Chinch bugs** damage lawns by sucking sap from the leaves and injecting a saliva which further damages

the grass. Their greatest injury is caused in lawns suffering from drought.

These black and white insects can be detected by sinking a bottomless can into the soil and filling it with water. Within a few minutes (5-10) the chinch bugs will float to the top.

Insecticides which are effective against chinch bugs include Diazinon, Sevin, and Oftanol.

**Sod webworms** are caterpillars which live and feed in silk-lined tubes they form in the grass. Clipped grass that fails to green in spring may indicate sod webworm infestation. Also, flocks of starlings or other insect-feeding birds often indicate high populations of sod webworms or other insects. To diagnose these insects, drench the lawn with dilute (2-4%) dishwashing detergent. This irritation will cause them to come to the lawn surface.

Dursban, Sevin, Orthene, Oftanol and Diazinon are effective treatments best applied late in the day, a day or two after mowing.

## INSECTICIDES FOR LAWN AND GARDEN

Here's a roundup of common chemicals used in the lawn, garden, and around the house to control insects. The chemical names are generic.

Chemical	Trade Names	Uses
acephate	Orthene	aphids, webworms
benfenin	Balan	crabgrass, other annual grasses (pre-emergent)
benomyl	Tersan 1991, Benlate	dollar spot, patch diseases
carbaryl	Sevin, Sevimol	grubs, billbugs, webworms, ants
chlorothalonil	Daconil	dollars spot, melting out, rusts, patch diseases
chlorpyrifos	Dursban, Chlorban, Otho-Klor	webworms, aphids, billbugs, ants
DCPA	Dacthal	most weeds (pre-emergent)
dicamba	Banvel*	dandelions, chickweed, other broadleaf weeds (post-emergent)
diazinon	Diazinon, Spectracide	grubs, billbugs, aphids, ants, mole crickets
DSMA, MSMA	Crabgrass Killer, Summer Crabgrass Control, Crabgrass and Nutgrass Killer	crabgrass
isofenphos	Oftanol	grubs, billbugs, webworms, mole crickets
MCP, MCPA	various*	dandelions, chickweed, other broadleaf weeds (post-emergent)
PCNB (pentachloro-nitrobenzene)	Terrachlor, PCNB	dollar spot, patch diseases, melting out
pendimethalin	Scott Weedgrass Control, Pre-M	most weeds (pre-emergent)
2,4-D	various*	dandelions, broadleaf weeds (post-emergent)

\*NOTE: Mixture of 2,4-D, MCP, dicamba, and other post-emergent herbicides are widely sold. Common trade names include Weed-B-Gon, Weeddestroy Triamine, Trimec, and Tri-Ester.

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**Fig. G**

