

Controlling White Grubs on Lawns and Turf

White grubs are immature (larval) stages of June or May beetles. Most grubs mature in a year; others take 2 or 3 years. Grubs damage lawns and turf by feeding on grass roots. Dead or dying patches of grass in spring or fall may be the result of grubs feeding on roots. Moles digging into lawns or flocks of birds feeding on lawns sometimes indicate the presence of grubs. Most lawn grasses are subject to attack by white grubs.

Hard-shelled, brown May or green June beetles emerge primarily from April through June in Alabama, mate, and lay eggs. The grubs soon hatch and begin feeding on grass roots. These smaller grubs are easier to kill with chemicals than when they are larger. This is why treatment in mid-summer or early fall (late July through September) is usually more effective than at other times; most larvae have hatched by this time and are still small. Grubs overwinter deep in the soil and move up the following spring. If they are a "one-year" species, they pupate, and adults emerge that same year. Treatment in damaged areas in late March to mid-April may kill larvae before they pupate, but treatment of smaller grubs is most effective and preferred.

Description

White grubs (Order Coleoptera, Family Scarabaeidae) are ½ to 1½ inches long, have three pairs of legs near the head, and characteristically rest in a C-shaped position. Their heads and rear ends are brown. Green June beetle grubs crawl on their backs with their legs up. Grubs can be identified by the pattern of spines (rasters) on the rear ends. It is important to know the kind of grub in order to know when to treat.

Damage

Grubs damage turf by eating grass roots. Damaged patches of grass feel loose and sometimes can be rolled up like a carpet. But, when the grass is growing rapidly in the summer and is not suffering from drought, infested areas may remain green on top even though the roots are eaten away. These areas do not "green up" in the spring.

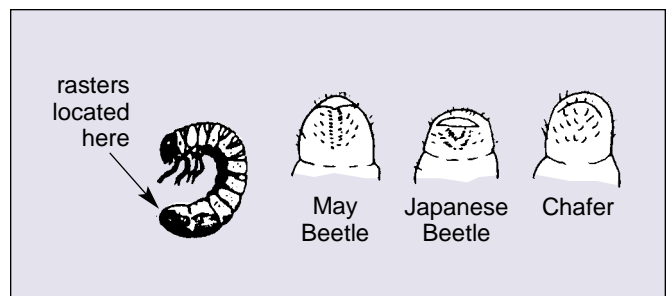
Don't guess about grub damage and treatment! Sometimes damage from cold, drought, nematodes, or maintenance practices resembles grub damage. Use a knife



White grubs in soil.



Green June beetle.



Rastral pattern of common grubs.

or spade to cut several 1-foot square samples, 3 inches deep, from the edge of the damaged areas. Fold the sample back and examine the soil for grubs. Treatment is often required when an average of three to five grubs is found per square foot. Replace the sod carefully and pack it into place. Beetles may reinfest the same areas year after year. Most new generation grubs in Alabama are present in the soil by mid-August and are easier to control at this time because they are smaller.

Control

Be sure to sample for grubs before treating. On large, commercial turf areas such as golf courses, sod farms, and commercial landscapes, grub infestations can be “mapped.” Map areas by sampling extensively with a greens cup cutter. Record on a map the presence or absence of grubs in each sample plug. Treating only mapped areas of grub presence reduces the area treated and, therefore, the amount of pesticide used.

Water grass before treatment if the soil is dry unless prohibited by label. When dry soil conditions exist, watering **before** treatment causes grubs to move nearer the soil surface. Water thoroughly again after treatment is applied.

Japanese beetles. Milky spore products (containing bacteria which infect only Japanese beetle grubs) have produced limited success in controlling grubs in Alabama. Milky spore bacteria **at best** work only on Japanese beetle grubs to suppress populations over time.

Insecticide control of Japanese beetle adults is difficult because of their mobility. Spray formulations of carbaryl (such as Sevin) that are registered for site use are recommended for homeowners and commercial applicators.

Hand collecting beetles may not be the most effective method of control but can be used in areas where beetles are less numerous. Japanese beetles are pests in parts of northern and east central Alabama. Japanese beetle adult flights peak most years in June.

Japanese beetle traps in home landscapes may do more harm than good. Beetle presence on plants attracts more beetles. Beetles that are attracted into the area may not make it to traps. Planting less susceptible plants, such as boxwood, dogwood, holly, or lilac, may be an alternative.

Precautions

DO NOT use pesticides on plants other than those listed on the label. Site and/or use directions may change. **ALWAYS FOLLOW LABEL DIRECTIONS.**

Commercial Turf Use

Insecticide	Rate	Comments
ethoprop MOCAP 10G	50 lb./A.	DO NOT apply Mocap to wet turf: turf “burn” may occur. Irrigate according to label directions. Mocap is a RESTRICTED USE pesticide.
bendiocarb TURCAM 76W TURCAM 2.5G	2 oz./1,000 sq. ft. 1.9-3.7 lb./1,000 sq. ft.	Irrigate before treatment if dry conditions exist; after, according to label. Turcam is a RESTRICTED USE pesticide.
diazinon various formulations	See label for recommended rates	See label for application and irrigation directions. Diazinon is BANNED for golf course and sod farm use.
fonofos CRUSADE 5G	80 lb./A. or 1.8 lb./1,000 sq. ft.	Do not prewater before Crusade application. Do not mow treated turf before irrigation or rainfall. For golf course and sod farm use only.
imidacloprid MERIT 75WP MERIT .5G	6.4 oz./A. or 3 level teaspoons/ 1,000 sq. ft. 60 lb./A. or 1.4 lb./1,000 sq. ft.	See label for species controlled. Make application prior to egg hatch of target pest; this means you must identify grub or beetle species present. MERIT is NOT for sod farm use.
isazophos TRIUMPH 4E	1.5 fl. oz./1,000 sq. ft.	See label for specific sites and use restrictions. Triumph is a RESTRICTED USE pesticide.
isofenphos OFTANOL 5G OFTANOL 2	40 lb./A. 1 gal./A.	Oftanol works better in some areas than others. Use only in areas where it has never been used and discontinue use after 2 or 3 years.
trichlorfon DYLOX/PROXOL 80SP DYLOX 6.2G	3 oz./1,000 sq. ft. 3 lb./1,000 sq. ft.	See label for use directions. Not for use on sod or turf. Used for commercial seed production or research purposes.
For Green June beetle control ONLY:		
carbaryl SEVIN	See label for recommended rates	Check product label before purchase for registered site uses. Green June beetle grubs surface to die; the smell may be a major nuisance.
acephate ORTHENE TT&O	3 lb./A.	Follow directions for mole cricket treatment for green June beetle control. Do not irrigate after treatment.

Homeowner Use On Lawns

Insecticide	Comments
diazinon various product names and formulations	See label for use rates. Water before treatment if dry conditions exist. This moves grubs nearer soil surface. Water after treatment to remove insecticide from leaf surface. Spread granular products evenly.
isofenphos OFTANOL 1.5G	Use 3 pounds per 1,000 square feet. Apply no later than late March for spring grub control or apply in late July through mid-August for fall grub control. May not be as effective in some areas after 2 years' use.
For green June beetle grub control ONLY:	
carbaryl SEVIN—various formulations registered for lawn use	See label directions for use for green June beetle control. Green June beetle grubs come out of the ground to die; decaying grubs may be a major nuisance.

Key: EC = emulsifiable concentrate; G = granular; S = sprayable; WP = wettable powder.



ANR-177

Patricia P. Cobb, *Extension Entomologist*, Professor, Entomology, Auburn University

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency and the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply any pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

UPS, 8M24, **Reprinted May 1998**, ANR-177