White Grub
in lawns

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FIG. 1

Type Pest: chewing insect (*Phyllophaga* sp.)

Type Metamorphous: complete (egg, larva, pupa, adult stages)

Other Common Names

- Adult stages are variously known as June beetles, June bugs, and May beetles

Period of Primary Occurrence: late April through June

- In Galveston County, adults emerge from the soil in late April, May and June, usually after a period of significant rainfall
- During these major flight periods, large numbers of adults can be seen at night flying around street lights and lights at homes
- There is one generation per year in Texas
- Larvae are typically present throughout the year

Identifying Characteristics of Insect Pest

EGG STAGE
- Females lay 30 – 40 eggs in soil at depths of 2 – 5"
- Eggs hatch in about 3 – 4 weeks and the larvae begin feeding on grass roots

LARVAL STAGE (Fig. 2)
- C-shaped and up to 1" long when full size
- Cream-colored bodies with brown head capsule
- Three pairs of legs with one pair on each of the first three segments behind the head
- Larvae go through three developmental stages (instars), increasing in size with each instar
- The third instar is the fully-grown white grub that causes extensive damage by feeding on grass roots in the fall and early spring

PUPAL STAGE
- The last larval stage remains in the soil from fall through spring
- In spring and early summer, white grubs pupate 3 – 6" deep in the soil
- Adults emerge from pupae in about 3 weeks

FIG. 2

FIG. 3

FIG. 4

ADULT STAGE (Fig. 4)
- Adults are beetles, approximately ½" long and ¼" wide
- Light brown with a reddish tinge just behind the head
- Soft spikes on legs aid females digging into soil to deposit eggs
- Attracted to lighting and feed on ripe or decaying fruit

Description / Symptoms: Lawn grass
- *Phyllophaga crinita* is common in Texas lawns, particularly Bermudagrass and St. Augustinegrass
- White grub damage can be detected by the presence of irregular-shaped areas of weakened or dying grass in the lawn
- Less severely damaged turf lacks vigor and is more vulnerable to invasion by weeds
- Feeding of large numbers of grubs causes lawns to turn yellow and die
- Severely damaged grass can be "rolled up" like a carpet
  (Figs. 6, 7 & 8 show such a lawn sample submitted to the Galveston County Extension Office)
- Grubs also feed on the roots of weeds, vegetables and ornamentals

Best Management Practices (BMP)

CULTURAL CONTROL
- Preventive measures to help reduce impact by insect pest:
  – Remove heavy thatch buildup (greater than ½")
  – Avoid overuse of chemicals that may reduce beneficial insects and stress lawn grass
  – Use a mulching mower

DETERMINING NEED FOR GRUB TREATMENT
To confirm whether you need to treat for grubs, examine several soil sections at least 3 – 4" across and 4" deep (sample sandy soils to greater depths). A good rule of thumb is to examine several soil plugs (up to one square foot per 1000 square feet of turf) from widely scattered parts of the lawn. Take care to include areas at the edges of suspected grub damage. Finding more than five white grubs per square foot justifies treatment, although some lawns with even higher numbers of grubs may show no damage

BIOLOGICAL CONTROL
Several non-chemical treatments are available for controlling white grubs. Beneficial nematodes within the genera Steinernema and Heterorhabditis are tiny worms that attack white grubs and other soil inhabiting insects. These microscopic worms can be purchased through garden supply catalogs. Commercial nematode products are usually designed to be mixed with water and applied to lawns using a hose-end or hand-held sprayer. Recent research shows that under good conditions, commercially available nematodes can reduce white grub populations by 50% or more

CHEMICAL CONTROL
Insecticides containing imidacloprid as an active ingredient are recommended for white grub control. Imidacloprid is most effective against small- and medium-sized grubs but may kill some grubs larger than 1.2" long. Imidacloprid trade names include Bayer Advanced Lawn Season Long Grub Control and Scott's Grub-Ex

- Imidacloprid is systemic insecticide preferred for its extended protection (four months or more). Water thoroughly to get the product down to white grubs. For dry soil conditions, water thoroughly the day before the application

- Ideally, insecticides should be applied within six weeks of egg-laying since treatments for young larvae are much more effective than later applications against older larvae. In the Galveston-Houston region, apply insecticides for white grubs in early to mid-June

FIG. 5

FIG. 6

FIG. 7

FIG. 8

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas AgriLife Extension Service is implied.

Use pesticides only according to the directions on the label. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. If the information does not agree with current labeling, follow the label instructions. The label is the law.

Always remember to read and heed six of the most important words on the label:
"KEEP OUT OF REACH OF CHILDREN"

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