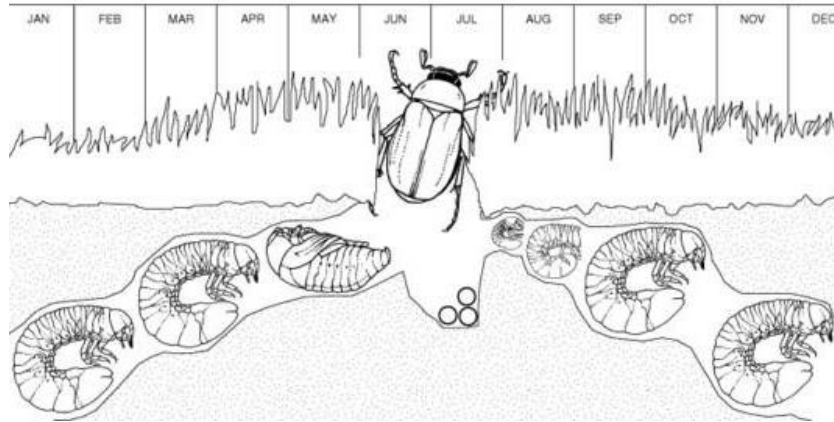


## White Grub Control Options for Homeowners



Masked Chafer Larvae  
 Photo by Jack Kelly Clark, UCANR



Courtesy J. Kalisch, University of Nebraska



Masked Chafer Adult  
 Photo by Jack Kelly Clark, UCANR

### White grub Identification and life cycle:

- Larval form of scarab beetles (i.e. May beetles, June bugs, or masked chafers).
- Translucent white with brown heads and six prominent legs. Their bodies typically curve into a "C"-shape.
- Live in the soil most of the year, emerging as adults to mate and lay eggs in early summer.
- Upon hatching the earliest larval stages of the white grub begin feeding on turfgrass roots.
- By early fall the white grubs are fully developed, reaching up to 1-inch long.
- The grubs stop feeding in late fall and move deeper into the soil to overwinter.

### Problems with grubs:

- Most turf grass damage is seen in late summer, or fall, when grubs are fully developed.
- In California, turf may sustain additional damage from wildlife during September to December, as the animals dig for the large grubs and eat them.

### Grub and wildlife damage management:

- Timing of a preventive grub control treatment is recommended when adult beetles are present.
  - Adult beetles fly at dusk and can be monitored with light traps or porch lights during early summer.
  - Larva can be monitored in late summer and fall by cutting out a section of the grass just below the roots.
- To prevent wildlife damage to turf in the fall and winter, grubs must be targeted in the summer, before the animals become interested. Control methods applied in the late summer or fall may not prevent wildlife digging.
- **Monitoring for grub presence, the timing of control methods, and type of product used are crucial to successful grub control.** Grub damage on lawns can look very similar to drought stress, and wildlife damage can also occur on lawns when skunks and raccoons are looking for other soil insects or earthworms.



Lawn damaged by masked chafer larvae  
 Photo by Jack Kelly Clark, UCANR



Monitoring for white grubs under turf  
 Photo by Jack Kelly Clark, UCANR



Wildlife damage on turf  
 Photo by Alameda County Vector Control Services District

**Biological control options:** The following are biocontrol options for white grub management.

**For best results read and follow all package label directions.**

**1. Beneficial Nematodes:** *Heterorhabditis bacteriophora* and *Steinernema glaseri*

*H. bacteriophora* and *S. glaseri* are microscopic beneficial roundworms that specialize in parasitizing and killing soil dwelling white grubs. Nematodes reproduce inside the grubs and after the infected grubs are killed, they seek out new grubs to infect.



A healthy white grub larva next to a darker one infected with the nematode *H. bacteriophora*.  
Photo by Jack Kelly Clark, UCANR

- Application timing: **June- October**
- How to apply: **Nematodes are live organisms, follow all package label directions to ensure their survival.**
  - Mix with water and use immediately with a hose end sprayer, backpack, pump sprayer or watering can.
  - Monitor for effectiveness: a week or so after application, look for yellow-brown to red- brown infected white grubs in the soil.

**2. GrubGONE! G:** *Bacillus thuringiensis* subsp. *Galleriae* (Btg)

Naturally occurring bacterium that can be applied to the turf and is carried into the soil and rootzone of the grass with irrigation. White grubs will be controlled upon ingesting Btg.

- Application timing: **June- Early August**
- How to apply: **Follow all package label directions.**
  - Apply to moist soil with calibrated granular equipment, such as a drop spreader.

**Chemical control options:** Please see the table below for the active ingredients available for sale in California that are effective against white grubs.

**For each product read and follow all the package label directions.**

Product Name	Active Ingredient	Application Timing	Product Type	Notes
Scotts GrubEX	Chlorantaniliprole	April - Mid July	Preventive	Preventive applications will not be effective after grubs stop feeding (late August - Winter).
BioAdvanced Season Long Grub Control	Imidicloprid	June - July	Preventive	

**Active Ingredients to avoid:** The following active ingredients bind with organic material in the turf and will not move down to where the grubs are feeding. Avoid products with these active ingredients, listed on the front of the packaging.

- lambda-cyhalothrin
- gamma-cyhalothrin
- bifenthrin
- deltamethrin
- cyfluthrin
- permethrin
- zeta-cypermethrin

A special thanks to Andrew M. Sutherland, Ph.D, BCE.

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For more information regarding white grub management please scan the following QR Code.

