Best Management Practices: White Grubs

White Grubs

Description:
White grubs are immature scarab beetles such as European chafer, masked chafer and Japanese beetle. Adults lay eggs in soil where they hatch into larvae. The larvae, which feed on grass and plant roots, have three instars, the final instar being considered the most damaging and usually present in the soil the longest period of time. Larvae pupate in the soil; the resulting adults are not considered turf pests, but can feed on ornamental leaves or disturb the soil. White grubs have one generation in much of the U.S., but can have multiple generations each year in sub tropical and tropical regions.

Since white grubs feed on grass roots, damage to turf can manifest itself as thinning, yellowing, and eventually death. When white grubs attack turf it feels soft and spongy. Turf may also exhibit scattered, irregular, brown patches that increase in size over time often mirroring the conditions seen during periods of drought. When white grubs feed on turf roots the turf is less able to take up water and nutrients leading to reduced drought tolerance. Most turf damage seen in the spring is a result of fall feeding. Secondary turf damage as a result of white grubs being present is caused by moles, raccoons, armadillos, wild hogs, skunks, and birds. These grub feeding species dig up the turf and further damage it.

Management:
Prior to any treatment the presence of white grubs should be confirmed. Turf that has severe white grub activity can be easily pulled back, like carpet. A one square foot area of turf should be checked in suspected areas of activity. Pull up the turf in these areas and check for grubs. The chart below describes suggested treatment thresholds for different grub species. Treatment may not be needed if fewer than the threshold numbers are found. Healthy turf may be able to withstand higher thresholds, while turf under drought or other stress may have lower thresholds.

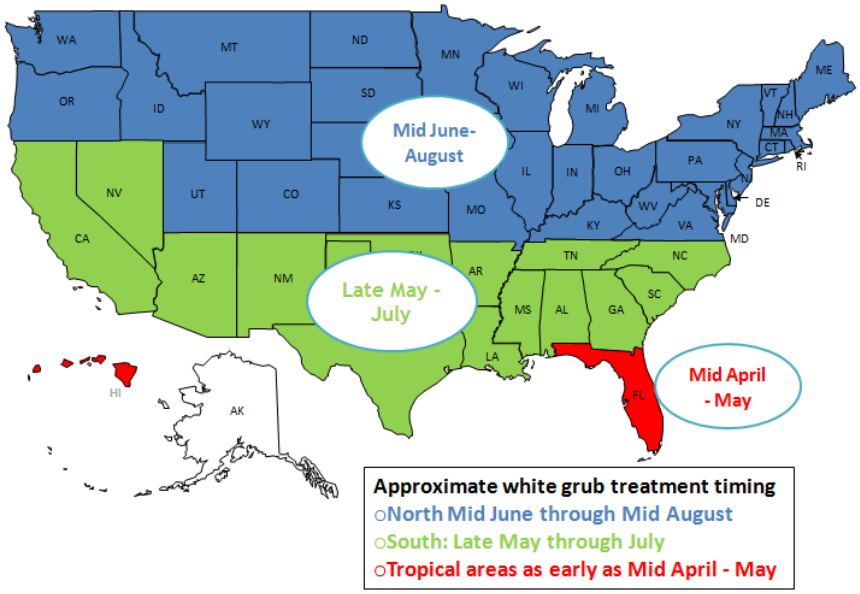
White grub treatment thresholds

Species	**# per Sq. Ft.**
Masked chafer	8 to 10
Japanese beetle	8 to 10
May/June beetle	3 to 5
Black Turfgrass Ataenius	30 to 50

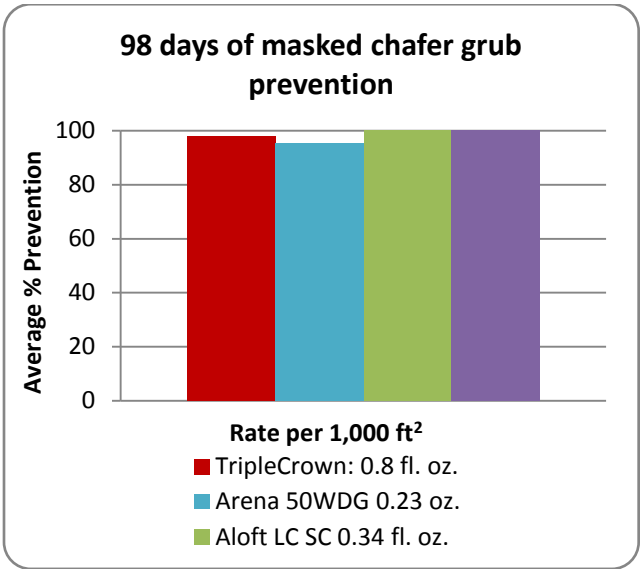
White grub management depends on getting the treatment down to the soil where grubs are feeding. Watering with a ½ inch of water before or preferably after treatment can help get the insecticide down to where grubs are feeding. In dry conditions more water may be needed.

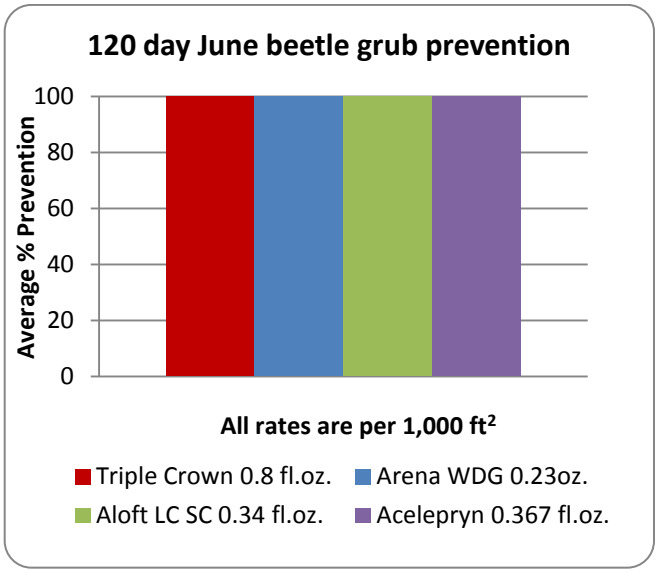
The earlier instar stages are the most susceptible to treatment. For most white grubs this means treatment in mid to late summer or early fall is best. Treatment timing will vary from May in the south to late August in the north. Preventative treatments are recommended:

Approximate preventative white grub application timing



Triple Crown™ T&O Insecticide has shown excellent preventative white grub control comparable to the standards on the market today. Treatment in NC in June resulted in 98 days of control and in OK in May resulted in four months of control. Triple Crown T&O Insecticide should be applied in a single application of 35 fl. oz. per acre or a split application of 25 fl. oz per acre twice, approximately 45 days apart. Using an appropriate volume of water (100+ gallons per acre) will help ensure penetration of the material down to the soil where grubs are active. Watering with 0.25-0.5 inches of water immediately after treatment is recommended. Using lower water volumes is likely to inhibit control.





13BLM013: NC State Application made June 25 in NC

14BLM06aTCWG:OK State Application made May 21 in OK