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White Grubs in Turf

The problem

White grub species include northern and southern masked chafers, Asiatic garden beetle, European chafer, May or June beetle, Japanese beetle, green June beetle and Oriental beetle. Injury to turfgrass occurs from larval feeding on the roots, resulting in infested areas first turning yellow, then brown and finally dying. When grub populations are heavy, areas of turf can be easily lifted from the soil. In addition, moles, raccoons, skunks, birds and other vertebrate animals that feed on white grubs can cause severe damage as they forage for the insects in infested turf.

What to look for

Beetle adults differ in size, colour markings and life cycle, but their larval stages are often very similar in appearance. To identify grub larvae, examine the spines on the underside of the abdomen tip, called the raster. The rastral pattern is different for each grub species and is the most common method of identification. In most cases, adult emergence occurs in midsummer, often after significant rainfall or irrigation, followed by mating and egg laying.

The eggs hatch and the small larvae begin feeding on roots with molting from first to second instar occurring in a few weeks. Most of the visible feeding damage is caused by the large third instar larvae. Overwintering occurs in this third instar stage with larvae moving downward during late October or November into the soil profile for protection from cold weather.

The following spring, these larvae will move up to the soil-thatch interface to feed and replenish food reserves lost during the winter months before moving back down and transforming into the pupal stage. For most species, a one-year cycle will be completed with beetles emerging from this pupal stage a short time later.

Envu solutions

The larvae of several beetle species commonly known as white grubs are major pests of turfgrass throughout most of Canada. Integrated management programs that include the strategic use of insecticides should be utilized to control these damaging root feeders. Tetrino® is a broad-spectrum fast-acting insecticide that is effective against problematic white grubs. Insecticide performance can be affected by a number of factors, including application timing and accuracy, amount of thatch, rainfall and/or irrigation following treatment, insect species, insect infestation level and dosage. All of these factors must be considered when treating with Tetrino insecticide to ensure optimal insect control is achieved.

Preventive and early curative control with Tetrino

Tetraniliprole, the active ingredient in Tetrino, is an anthranilic diamide insecticide that interferes with the ryanodine receptors in susceptible insects. This causes feeding to stop once the insect ingests treated planted material. Tetrino has the perfect blend of being fast acting while also offering season-long white grub control.

For season-long white grub control, apply Tetrino during peak adult flight, typically between mid-June and mid-July. Early curative treatments can be effective against second and third instar larvae when applied in August. Optimum control is achieved when applications are made prior to egg hatch of the target pests and when irrigation or rainfall occurs within 24 hours after application to move the active ingredient through the thatch into the soil profile.

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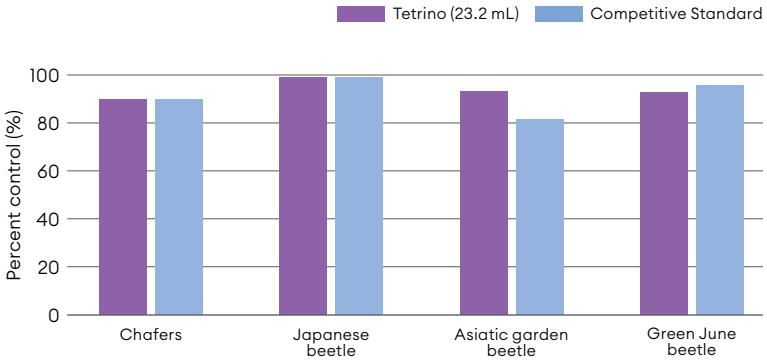
Season-long white grub control

Powerful activity across species

- All treatments applied once
- Treatments rated for efficacy during fall
- All trials occurred between 2016–2018

Trials conducted at Purdue University, University of Kentucky, and NC State University



Typical white grub time profile

Diseases	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black Turfgrass Aetanius												
European Chafer Grub												
Japanese Beetle												

Periods of egg laying Periods of feeding

Product	Application rate	Water volume	Post irrigation amount	Post irrigation amount
Tetrino®	23.2 mL	8 L/100 m²	3–10 mL	Best to irrigate within 24 hours

Stressed turf as a result of white grub activity.

Due to lack of root system, turf easily peels back to reveal white grubs.

Turf damage in area infested with white grubs due to foraging animals such as skunks and raccoons.

Photos: Dr. Rob Golembiewski and Dr. Paul Giordano, Envu

To talk about your specific needs or to learn more about our solutions, please contact an Envu representative.

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