

# Black turfgrass ataenius

## *Ataenius spretulus*

### DESCRIPTION OF INSECT

#### *Immature stage:*

Small (less than 1/4 inch maximum length) white to transparent grub with 6 legs, light brown head.

Frequently lies in “C” shaped position

Lives in soil; feeds on roots

#### *Mature stage:*

Small (1/4 inch long), hard-bodied black beetle with short antennae and striations on wings

Frequently found walking on surface of greens, especially on warm and sunny days

3 pair of legs

The color of ataenius beetles may be reddish brown for the first day or two after they emerge from their pupae in the soil. After this, they remain black for the duration of their lives.

#### *Damaging stage(s):*

Grubs only

#### *Predictive models*

Grubs generally become active at threat temperatures of 60° F or higher. [Threat temperatures](#) can be used to trigger preventive treatments. See the article, “[Threat temperatures](#)” for more information.

#### *Life cycle:*

Eggs are laid in the soil by adult beetles.

Grubs hatch from the eggs and spend their entire lives in the soil. They live 4 – 8 weeks, depending on soil temperatures.

Once grubs reach their maximum size, they form pupae in the soil. Soon afterwards, adult beetles emerge and crawl to the surface of the turf, where they begin to look for mates.

In warmer climates, there can be 2 or more generations of ataenius per year. In cooler climates, there is only one generation per year.

#### *Conducive environmental conditions:*

Average air temperatures >65F (18C)

High organic matter in soil (>2% on greens; >6% on other turf)



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Location near livestock operation (horses, chickens, cows, etc). Ataenius are dung beetles and are drawn to the odor of manure and to high organic matter environments

Use of organic fertilizers

Damage will develop more rapidly when turf is stressed due to:

- High soil salts (salinity)
- Compaction or traffic
- Heat or drought

*Geographic distribution:*

Most of North America. Related insects cause problems on golf course turf in other regions of the world.

### **DAMAGE CAUSED:**

*Plants attacked:*

All varieties of turf are attacked, but damage develops only on cool season turf. This is due to the relatively shallow root system of cool-season turf, which cannot withstand sustained feeding by ataenius grubs.

Animals damage due to birds, reptiles or mammals searching for grubs and adults of the ataenius can occur on any turf type.

*Symptoms of damage:*

Initial symptoms are small areas of thin, yellowing or wilting turf. As grub feeding continues, affected patches grow in size and turf eventually dies. Turf can be easily picked up by hand, due to destruction of the root system.

*Timing of damage:*

Late spring, summer and early fall, as long as average air temperatures are greater than 65F (18C)

*Insects that look similar; Pests that cause similar damage:*

Adult black turfgrass ataenius can be confused with:

- Ground beetles: ground beetles differ in their size (usually larger), their long, thin antennae and their rapid running movements
- Aphodius beetles: these closely related beetles have a similar size and shape, but are lighter colored — usually light to dark brown.

Larval (grub) black turfgrass ataenius can be confused with:

- Newly hatched larvae of other white grub species including Japanese beetle, chafers, Oriental beetle, Asiatic beetle or May/June beetles). Although these grubs will eventually become much larger than ataenius grubs, when they are first hatched, they are difficult to distinguish from ataenius.

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#### **MONITORING TECHNIQUES:**

Adults: Adult beetles can be detected by examining the surface of greens, in clippings in mower baskets, or by conducting [soap flushes](#)

Larvae (grubs): The only way to locate grubs is to cut or peel away the turf surface. Grubs usually reside near the thatch/soil interface. Grubs are typically found in areas showing signs of damage and/or areas that were infested in previous years. Other areas to start looking include locations where animals have been digging for insects, wet and poorly draining areas, areas where turf is stressed for other reasons.

#### **THRESHOLDS:**

There are no generally accepted threshold levels. On greens, a few ataenius grubs per square foot can cause damage on cool-season turf. On higher mown turf, higher densities can be tolerated.

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### BLACK TURFGRASS ATAENIUS MANAGEMENT STRATEGIES:

TYPE	TIMING/ THRESHOLD	PRACTICE
Cultural	N/A	<p>Avoid stressed turf through management of irrigation, traffic, black layer, drainage salinity</p> <p>Avoid organic fertilizers</p> <p>To stop animals from digging for grubs, apply Milorganite to turf at labeled rates.</p>
Biological		N/A
Chemical	Preventive: target grubs w/ applications made late spring/early summer after average air temperatures >65F (18C)	<ul style="list-style-type: none"> <li>• Follow resistance management guidelines by rotating products as outlined in “<a href="#">Insecticide Mode of Action Classification Scheme</a>” Consult <a href="#">North Carolina State “Pest control for Professional Turfgrass Managers</a> for pest control options</li> <li>• Always consult the most recent version of all product labels before use.</li> </ul>
	Curative: target adults once they are detected	