INSECT REFERENCE

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

Monitor average air temperatures in the springtime. When there are 3 or more consecutive days of 65F, be prepared for grubs to appear within the next 2 -4 weeks.

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)

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 Japanes 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 examine the surface of greens, in clippings in mower baskets, or by applying a 1% soap solution (see Reference “Monitoring for insects with soap flushes”) to the turf surface.

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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MANAGEMENT STRATEGIES:

Follow resistance management guidelines by rotating products as outlined in IPM Template Reference “Insecticide Resistance Management Groups.” Always consult the most recent version of all product labels before use.

TYPE	TIMING/ THRESHOLD	PRACTICE	
Cultural	N/A	Avoid stressed turf through management of irrigation, traffic, black layer, drainage salinity Avoid organic fertilizers To stop animals from digging for grubs, apply Milorganite to turf at labeled rates.	
Biological			
Chemical	Preventive: target grubs w/ applications made late spring/early summer after average air temperatures >65F (18C)	Active Ingredient (Product)	Label signal word
		clothianidin (Arena)*	Caution
		halofenozide (Mach 2)	Caution
		imidacloprid (Merit)	Caution
		imidacloprid + bifenthrin (Allectus)	Caution
		thiamethoxam (Meridian)	Caution
	Curative: target adults once they are detected	Bifenthrin (Talstar)	Caution
		Cyfluthrin (Tempo)	Caution
		Chlorpyrifos (Dursban)	Danger (WP); Caution (liquid)
		Deltamethrin (Deltagard)	Caution
		Lambda cyhalothrin (Scimitar)	Caution
	Curative: target grubs once they are detected	Acephate (Orthene)	Caution
		Clothianidin (Arena)*	Caution
		Imidacloprid (Merit)	Caution
		Thiamethoxam (Meridian)	Caution
		Trichlorfon (Dylox)	Caution (granule); Warning (powder)