

INSECT REFERENCE

Southern mole cricket, *Scapteriscus borellii*

Tawny mole cricket, *Scapteriscus vicinus*

DESCRIPTION OF INSECT

All stages live in the soil and are rarely seen on the surface.

Immature stage

Nymphs of both species are similar in appearance to adults, but lack wings. Nymphs proceed through 8-10 instars ranging in size from 0.2 to 1.25 inches in length. Each instar is progressively larger with wing buds apparent on later instars.

Color varies from gray to brown. Pronotum (large shield behind head) with distinctive mottling or spots, depending on species and location.

Mature stage

Adults are somewhat cylindrically shaped, light colored crickets 1.26 to 1.38 inches in length.

Adults have two pairs of wings, but only fly at night during two brief flight periods in fall and early spring. Spring flights are generally more extensive than fall flights.

Damaging stage(s)

Both nymphs and adults cause damage

Links to photographs, illustrations of insects

ADULT Tawny Mole Cricket: <http://molecrickets.ifas.ufl.edu/mcri0039.htm>

ADULT Southern Mole Cricket: <http://molecrickets.ifas.ufl.edu/mcri003e.htm>

Predictive models (degree day, plant phenology, threat temperatures, other)

Both species hatch in spring/early summer. TMC hatches slightly earlier (June), SMC hatches slightly later (July) and has a protracted hatch. Egg-laying and hatch timing are affected by soil moisture.

Preventative treatments should be timed to slightly precede or coincide with peak hatch.

Weekly soap flush sampling in June and early July is the best method to determine when hatch is occurring, and the best time to treat.

Life cycle:

Both species have a one-year life cycle throughout most of range. SMC may have more than one generation in southern Florida.

Females lay eggs in underground chambers in spring.

Eggs hatch in approximately 20 days, depending on soil temperature and moisture.

Nymphs are present from June hatching until winter or spring

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Nymphs of TMC become adults in late fall, nymphs of SMC become adults in early spring

Nymphs generally cause no visible damage until mid to late July

Conducive environmental conditions:

warm, wet springs may lead to earlier hatch date

Geographic distribution:

worldwide

DAMAGE CAUSED

Plants attacked:

Roots and stems of warm-season turf on fairways, greens and tees.

Although bermudagrass is most commonly damaged by feeding, mechanical damage from tunneling can occur in any managed turf where appearance or playing surface is of critical importance.

Symptoms of damage:

Small and large tunnels produced by nymphs and adults

The disappearance of grass and a spongy feel under foot

A tilled appearance where larger nymphs have been actively tunneling

Pecking or digging in turf by birds and mammals

Timing of damage:

Visible damage begins to appear in mid to late July and gets progressively worse until the onset of cold weather

Damage from large nymphs and adults begins in early spring as soil temperatures rise.

Damage in spring is usually less severe than that occurring the proceeding summer and fall.

Insects that look similar; Pests that cause similar damage:

Areas with a serious grub infestation may have a similar appearance and a spongy feeling under foot at about the same time as mole cricket damage appears. However, grub infestations are much more common in cool-season grass and much less common in warm season turf. Mole cricket damage mainly limited to sandy soils and warm season turfgrass.

- Some surface-dwelling crickets look similar, but are much darker in coloration and do not have large front feet modified for digging.

MONITORING TECHNIQUES:

Soap flush for nymphs and adults is the most useful of the monitoring technique for mole crickets. Begin weekly soap flushes in the springtime in mid-June and continue monitoring to confirm the presence, distribution and size of the nymphs, and to

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determine the effectiveness of insecticide applications. Mapping of the infestation based on damage noted the previous season is highly recommended to facilitate scouting and determine where treatments are required. Treatments should be applied before new damage occurs. Preventive treatments should be applied prior to egg-hatch (Early June) or at the time of peak hatch (last week of June, first week of July).

THRESHOLDS:

There are no hard and fast thresholds for this pest. Some fairways can tolerate moderate infestations, especially of the SMC. Any damage to greens and tees is more serious, and little damage can be tolerated in these areas.

MANAGEMENT STRATEGIES:

Mapping of previously damaged areas is highly recommended to facilitate scouting and determine where insecticide treatments are required. Always consult the most recent version of all product labels before use.

Follow resistance management guidelines by rotating products as outlined in IPM Template Reference "Insecticide Resistance Management Groups."

Mole cricket management strategies				
TYPE	TIMING/ THRESHOLD	PRACTICE		COMMENTS
Cultural	N/A	<ul style="list-style-type: none"> Map infestations when damage is evident in fall and spring Determine when nymphs are hatching using soapy water flush 		
Biological	Apply when adult stage is detected by damage or with soap flush	Beneficial nematode products based on <i>Steinernema scapterisci</i> . For current suppliers, see http://www.oardc.ohiostate.edu/nematodes/nematode_suppliers.htm		<ul style="list-style-type: none"> Pre and post application irrigation critical Not recommended for heavy infestations
Chemical	Preventative: apply when 1 st small larvae are detected with soap flush	Active Ingredient (Product)	Label signal word	<ul style="list-style-type: none"> Early treatments applied to and around previously damaged areas may be sufficient to control infestation Apply while nymphs are less than ¼ inch long
		Bifenthrin (Talstar)	Caution	
		Cyfluthrin (Tempo)	Caution	
		Deltamethrin (Deltagard)	Caution	
		Fipronil (TopChoice)	Caution	
		Imidacloprid (Merit)	Caution	
	Curative: apply when damage first detected	Acephate (Orthene)	Caution	<ul style="list-style-type: none"> Water before application. Do not water in Avoid rain or irrigation for 24 hrs after application
		Mole cricket bait (several active ingredients)	Caution	
			Caution	