



Tawny Mole Cricket: *Scapteriscus vicinus* Shortwinged Mole Cricket: *Scapteriscus abbreviatus*

Biology & Lifecycle: Adults and larger nymphs chew on stems of seedlings and smaller plants at the soil surface. The tawny mole cricket has one generation each year and overwinters as adults, which lay eggs in April through early June. Nymphs grow slowly through the summer months and start becoming adults in September. The shortwinged mole cricket is almost restricted to coastal areas. Most eggs are laid in late spring through early summer. Females of both species lay clutches of eggs in underground egg chambers.

Environmental Factors: Tawny and shortwinged mole crickets are present year-around, with adults and large nymphs overwintering but inactivated by cold temperatures and drought (they burrow deeper underground). Irrigation during drought allows them to be active. Flooding forces them to migrate to higher ground.

Adult: Adults are large, about 1¼ inches, with wings longer than body (tawny mole cricket **(Figure 3)**) or very much shorter than body (shortwinged mole cricket **(Figure 1)**). Both adults and nymphs have enlarged and toothed forelegs for digging; expanded femurs (base of the hind legs) for jumping, although only nymphs jump. All species have soft bodies, with the middle body section protected by a hardened cover (pronotum).

Immature: Nymphs range from less than 1/8 inch at hatching to about 1 inch several months later, resembling the adults but without trace of wings in the first 4 instars and with small wing buds in later instars. The number of molts varies from 6 to 9 **(Figure 5)**.

Host range: Both species attack seedlings of eggplant, sweet pepper, tobacco, tomato and cabbage.

Economic Importance: Mole crickets cause more damage to turf and pasture grasses than tomato and pepper because of the use of soil fumigants.

Damage: Mole crickets kill plants by girdling and severing small plants at the soil surface **(Figure 4)**. Severed plants may be pulled below ground to be consumed. Both the tawny and shortwinged and a third pest mole cricket species, southern mole cricket, disturb roots and desiccate plants by tunneling as well.

Monitoring:

Scouting: Galleries (tunnels just under the soil surface, like miniature mole galleries) are evidence of presence. Dead plants are evidence of activity. Mole crickets may be flushed from the soil by flooding a small area with a 0.5% soap solution. No thresholds have been developed.

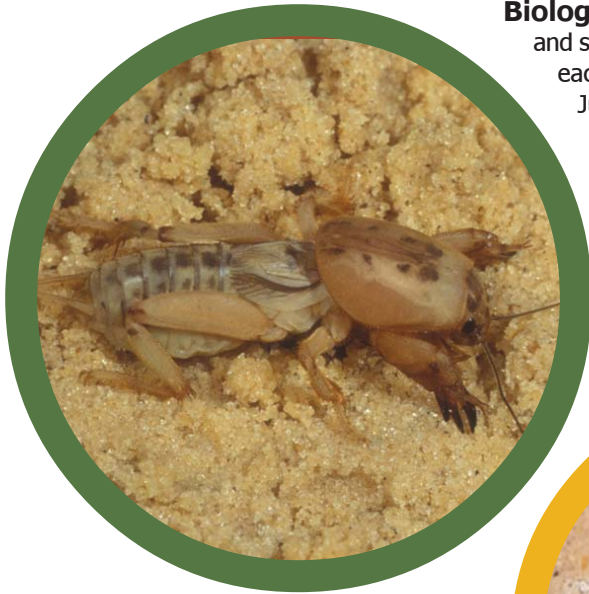


Figure 1. Shortwinged mole cricket adult. Photograph by: Lyle Buss.

Figure 2. Shortwinged mole cricket eggs are buried in chambers in the soil. Photograph by: Lyle Buss.

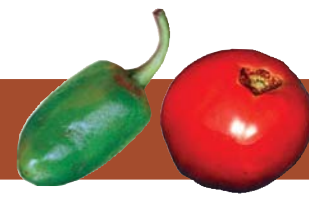
Figure 3. Tawny mole cricket adult. Photograph by: Lyle Buss.

Actual Size:

Adult
about 1¼ inch



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CULTURAL CONTROLS:

Transplants: Use larger transplants with larger stems.

Field Manipulations: Mole crickets can quickly invade fields cleared of crickets with fumigation or other methods. Therefore, locate fields away from sources of mole crickets (such as bahiagrass or bermudagrass pastures) and plant in large blocks with proportionally little edge.

CHEMICAL CONTROLS:

- The use of broad spectrum soil fumigants under plastic film kills mole crickets in the planting bed; however, crickets survive in the untreated area between rows and can re-invade the treated planting beds. Commercial baits can be applied between beds to control residual crickets.

RESISTANCE MANAGEMENT:

- Integrating chemical and biological controls, including both parasitoids and nematodes, reduces the reliance on chemicals for management.

NATURAL ENEMIES:

- Buy and apply the beneficial nematode *Steinernema scapterisci* in spring or fall. Populations of this nematode should establish permanently (but will be destroyed in strips where soil is fumigated). It is harmless to non-target organisms and is exempt from EPA regulations.
- Encourage a population of the beneficial wasp *Larra bicolor* F. by planting suitable nectar source plants for the adult wasps. The wasp lays eggs on pest mole crickets, and the wasp grubs that hatch from the eggs kill the mole crickets. UF/IFAS is distributing these wasps to all Florida counties [see <http://molecrickets.ifas.ufl.edu/mcri0007.htm>].
- The parasitoid *Ormia depleta* was imported from Brazil and distributed to many southern counties. It is attracted to the calls of male mole crickets and has resulted in reduced mole cricket injury in southern Florida.

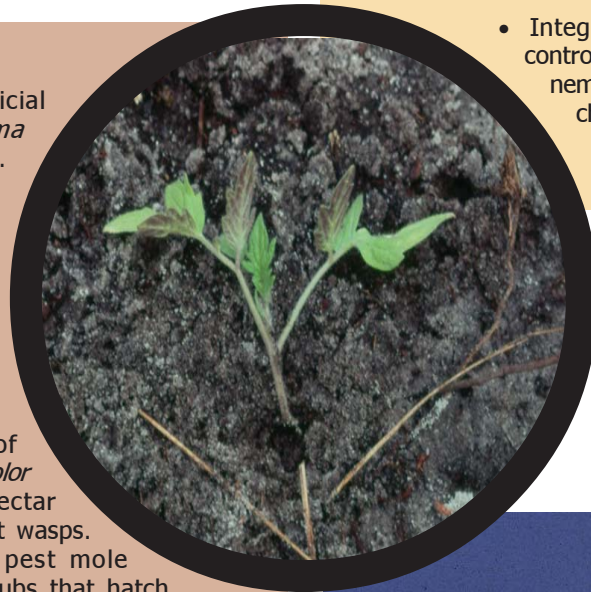


Figure 4. Seedling severed at soil surface by mole cricket feeding. Photograph by: David Schuster.

Figure 5. Short winged mole cricket life cycle. Photograph by: James Castner.



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