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TAWNY AND SOUTHERN MOLE CRICKETS
IDENTIFICATION AND CONTROL

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Tawny and southern mole crickets create extensive subsurface tunnels that uproot and desiccate turfgrasses, particularly on sand-based athletic fields and golf courses where it is easy for them to tunnel. They are especially problematic on golf course putting greens where their tunneling can affect playability as well as the quality of mowing. Bermudagrass is the most common grass species targeted by both species, but they can also damage Zoysiagrass, Centipedegrass, and Creeping bentgrass.

Mole crickets (Fig. 1) belong to the insect order Orthoptera (crickets and grasshoppers) and family Gryllotalpidae (mole crickets). Their bodies are well adapted for burrowing through the soil with shovel-like forelegs and their heavily armored thorax, which they use for shaping and packing the soil. Tawny and southern mole cricket adults (Fig. 2) look superficially alike; however, markings on the plate behind the head, also called the prothorax, and the numbers and arrangement of "toes" on the front legs distinguish the two species. The southern mole cricket is a dull, dark brown cricket with four light-colored spots on the pronotum. The tawny mole cricket is slightly larger and has a mottled, brown pronotum. All mole crickets have enlarged, shovel-like front legs for digging. The southern and tawny mole crickets both have two primary toes (dactyls) on the 4th division of the leg (tibia), but the shape of the gap between the dactyls differentiates the two species. Southern mole crickets

Figure 1. Adult mole cricket.

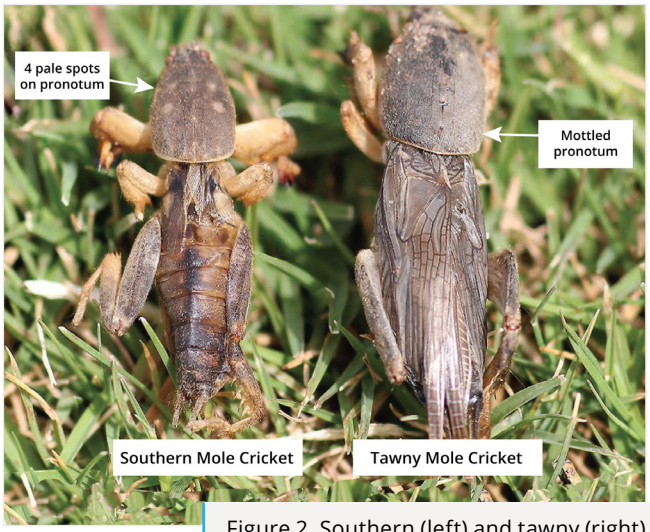

Figure 2. Southern (left) and tawny (right) adult mole crickets.

have a distinct, U-shaped gap between the dactyls (Fig. 3), while the dactyls on the tawny mole cricket nearly touch at the base and form a V (Fig. 4). The less common Northern mole cricket (not pictured) can also be found in Texas and has four primary dactyls on the tibia.

The southern mole cricket is more widely distributed across the state than the tawny mole cricket. Southern mole crickets are established east of a line from Corpus Christi to San Antonio to Fort Worth, and south of I-20 in most of east Texas. The tawny mole cricket is thought to be the Houston area to Louisiana.

MOLE CRICKETS' LIFE CYCLE

Both species of mole crickets go through gradual metamorphosis when developing from eggs, to nymphs, to adults. Adults of both species are approximately 1¼ inches long and 4/10 inch wide, but the tawny mole cricket is often slightly larger and more robust than the southern mole cricket.

The adults of both species mate during dispersal flights that occur just after sunset during the spring months.

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Figure 3. Southern mole cricket dactyls.

Figure 4. Tawny mole cricket dactyls.

The females lay their eggs starting in April in south Texas and starting in June/July in north Texas. Upon hatching, mole cricket nymphs begin feeding on roots, organic matter, other insects, and small organisms. The first instar mole crickets are about ¼ inch long and look much like the adult mole cricket except that their wings are not fully formed. They go through 6 to 8 nymphal stages (instars) and, depending on species, will go through a final molt to the adult stage or remain in the nymph stage for overwintering. Most tawny mole crickets overwinter as adults, and most southern mole crickets overwinter as nymphs. However, both species typically exhibit only one generation per year.

Tawny mole crickets feed primarily on grass roots, while Southern mole crickets feed approximately 80 percent on predators and 20 percent on plants. However, extensive damage from nymphs and adults of both species often occurs at night as they tunnel through roots on their way to the soil surface to feed (Fig. 5). The most severe damage by both species occurs during late summer and early fall, when the nymphs approach maturity. However, treatments during these later stages are difficult, so it is better to treat early while the nymphs are small.

Figure 5. Tunneling damage from adult mole crickets.

FLUSHING THEM OUT

To maximize control, scout and treat for tawny and southern mole crickets from May through July while nymphs are still small. You can scout by flushing the nymphs with a mixture of 1 tablespoon of lemon-scented liquid dish detergent in one gallon of water (Fig. 6). This mixture irritates the nymphs and flushes them to the soil surface for identification and counting.

Products containing the active ingredients bifenthrin, fipronil, indoxacarb, or thiamethoxam are all effective for controlling mole crickets, but other labeled insecticides can also work well when applied in a timely manner. As always, be sure to consult the product label for specific instructions on timing, use rate, and application methods.

Figure 6. Soapy water flush to scout for mole crickets.

Acknowledgment

All photos by Casey Reynolds, Assistant Professor and Extension Turfgrass Specialist