



Pest e-alerts



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Pasture Damaging Grass-feeding Termites of Southwest Oklahoma

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Spring is termite swarming season in Oklahoma when indigenous wood-destroying termites fly (swarm) in large numbers from their nests to seek food and shelter and form new colonies. Native subterranean termites that infest and damage our homes and wooden structures are found across Oklahoma. However, a seldom noticed, specialized grass-feeding, pasture-damaging termite found in Oklahoma resides in dry southwest grassland and pasture habitats in counties such as Cotton and Tillman. Although it has not been widely reported from central and SW Oklahoma, this desert termite most likely resides in many counties in these areas of the state. Generally, it swarms after a summer rainfall near sunset and dusk.

During OSU Extension meetings in south central and SW Oklahoma, ranchers and homeowners have mentioned observing this termite feeding on forage grasses. It does not attack wooden structures, but instead consumes live and dead stems and leaves, and possibly roots of native and non-native grasses and plants, especially in livestock pastures and along fence lines. When collecting this termite in pastures, it was also found within grass roots and is likely using roots as an additional food source. This unusual termite's scientific name is *Gnathamitermes tubiformans*, and it is a known grass-feeding arid-land termite that does not infest buildings. Some landowners consider it beneficial because its tunneling activities help recycle soil plant nutrients and improve soil aeration and rainfall infiltration. However, livestock owners consider this termite a destructive pest because its feeding reduces available forage and degrades pasture. As livestock grazes on termite-damaged grasses, the weakened forage is sometimes kicked loose or pulled out of the soil to create bare areas that do not readily regrow. Hoof disturbance and compaction of the bare soil helps these areas persist. Then the pasture can become non-intentionally overstocked and the damage is perpetuated. Although this termite builds foraging tubes and mud plastering on the soil surface and over grass and plant stems, the colony also lives below the soil

surface. Colony tunnels have been found at depths of two-to-four feet, making it difficult to control this termite.

To aid in identifying this specialized forage-damaging termite and its activities, the following photographs are provided.



Figure 1. Termite mud tubes built over live grass and the soil surface. As termites eat mud-encased grass stems and leaves the mud tubes become hollow (Cotton County).

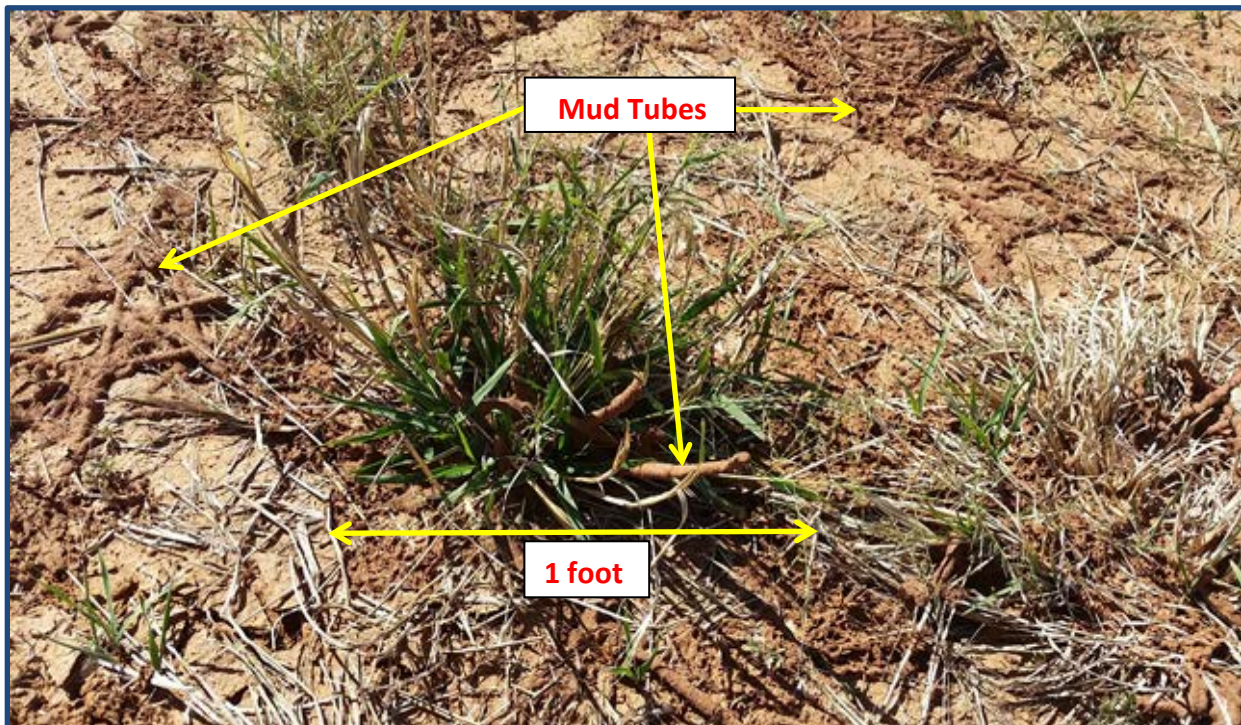


Figure 2. Termite mud tubes extending over the soil surface encasing dead plant litter and covering live grass stems and leaves. Note bare soil areas that do not readily regrow forage. Some bare soil areas are due to clumpy grass growth, some are due to termites (Cotton County).



Figure 3. Grazing livestock may pull out some stems and roots of termite-damaged forage grasses. Reduced forage yield cannot sustain a normal stocking rate (Cotton County).



Figure 4. *Gnathamitermes tubiformans*
Soldier



Figure 5. *Gnathamitermes tubiformans* swarmer (alate; primary reproductive). Note **pale rusty-tan** body color and pale **brownish-grey** non-transparent wings. Photograph courtesy of Texas A&M AgriLife Extension Service and AgriLife Communications, Publication E-258, November 2010. (A. K. McDonald, M. A. Muegge, and C. Sansone)

Termite Management

There are no current insecticide recommendations for control of *G. tubiformans* in Oklahoma pastures. However, general insecticide sprays that can be used to control insects in rangeland and pasture may also reduce termite numbers. Most of these insecticides have 'zero-day' pre-harvest intervals and grazing restrictions. They are listed in the 2017 Extension Agent's Handbook (reference below). Whether the listed insecticides will control *G. tubiformans* has not been field-tested. In a study from 1971 through 1973, researchers at Texas Tech University applied insecticide to pasture that was infested with desert termites, significantly reducing termite populations and demonstrating insecticide sprays can be effective (Bodine and Ueckert 1975). However, the specific insecticide that was used is no longer available and no replacement insecticides have since been recommended. In addition, over-the-top insecticides would not reach deep enough into the soil to eliminate the colony, possibly requiring repeat applications.

Some mechanical control by destroying mud tubes and plastering may be possible using a disc or toothed harrow or other farm device. This would break up termite workings, mechanically destroy termites, and expose survivors to desiccation. Such efforts may only partially solve the problem and probably not destroy termites deep in the soil.

References

OSU Extension Agents Handbook of Insect, Plant Disease, and Weed Control. 2017. Oklahoma Cooperative Extension Service. DASNR, Oklahoma State University. pp 231-234.

Bodine, M. C. and D. N. Ueckert. 1975. Effect of Desert Termites on Herbage and Litter in a Shortgrass Ecosystem in West Texas. *Journal of Range Management* 28(5): 353-358.

All photos except Figure 5 by Cade Morris. To acquire Fact Sheets about Oklahoma termites in general, access <http://osufacts.okstate.edu>. Click on "Insects and Diseases-Topical List", then click on "Integrated Pest Management-Insects" or "Home & Garden" and scroll down to EPP-7308, *Choosing a Pest Management Company to Protect Your Home Against Termites*, or EPP-7312, *Household Pest Control*.

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