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DESERT TERMITES

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Desert termites, *Gnathamitermes tubiformans* (Buckley), occur in southern New Mexico, Texas, Arizona, and northern Mexico. This species constructs fragile tubes and sheetings around the surfaces of herbaceous and woody plants (Fig. 1), litter, dung, fence posts, etc. on which it feeds. The termites do not tunnel into wood, but rather remove only surface materials. The "carton" tubes and sheetings can cover 6 percent or more of the soil surface during May through September on shortgrass rangeland in western Texas. Being readily apparent on over-grazed rangelands or during droughts, the tubes and sheetings cause great concern to ranchers in the Southwest.



Fig. 1. Plant covered with desert termite mud tubings.

IMPORTANCE

Desert termites are more damaging in uncultivated, natural ecosystems than in monocultures. Several activities of termites are significant on rangeland: (1) consumption of standing forage plants that would otherwise be eaten by livestock or wildlife; (2) destruction of valuable pasture plants such as legumes; (3) consumption of dry grass and mulch; resulting in increased moisture evaporation, death of the forage plants, the necessity of range renovation practices, and the potential for accelerated erosion; (4) building mounds that occupy a significant area of ground that would otherwise support forage plants; and (5) modifying soil properties that influence plant growth.

DAMAGE

Workers (Fig. 2) and soldiers of the desert termite are active on the soil surface at night and during cooler periods of the day, particularly following rains. They are most active on the surface from March through September, with few to no termites present above ground from December through February. The termites are not present in the upper one foot of soil when the soil temperature is below 48°F 6-inches below the soil surface (Ueckert et al. 1976).

Desert termites often consume entire above-ground portions of plants. The diet of the desert termite on western Texas shortgrass rangeland consists of red threeawn (*Artistida longiseta*), buffalograss (*Buchloe dactyloides*), and blue grama (*Bouteloua gracilis*). Blue grama is preferred during most of the feeding period. Live grass plants are consumed during spring and early summer, but the importance of grasses as a food source declines during early fall. Consumption of standing dead grasses is low in spring and increases steadily until October. Overall, about 46% of the food items attacked are standing dead grasses, 34% is litter and 16% is live grasses (Allen et al. 1980). During autumn, the desert termite has also been reported to consume leaves of creosotebush (*Larrea tridentata*), fluffgrass (*Erioneuron pulchellum*), pepperweed (*Lepidium lasiocarpum*), and desert marigold (*Baileya multiradiata*).

The desert termite also feeds on livestock dung, forbs, and standing or fallen wood from honey mesquite (*Prosopis glandulosa* var. *glandulosa*) and yucca (*Yucca elata*). They feed on cattle dung after summer rains moisten the soil (Whitford et al. 1982).



Fig. 2. Desert termite worker.

CONTROL

Bodine and Ueckert (1975), working in the same shortgrass community, found no evidence that the desert termite consumed appreciable quantities of grass roots. However, controlling termites increased standing crop of grass by 22 percent and litter accumulation by 50 percent in two years. Spears et al. (1975) reported that control of the desert termites resulted in improved watershed value and soil-water relationship for plants, as well as increasing rainfall infiltration and decreasing erosion when compared to areas where the termites were not controlled.

If dry weather continues and stand loss of grass is occurring, a chemical spot toothed harrow and light disc harrow must be used to break up chimneys and expose developing termites. There are no specific insecticides labeled for desert termite control in pastures, but several insecticides labeled for other insects in pastures may help reduce their population. See the Texas Agricultural Extension Service's publication, "[Managing insect and mite pests of legumes, grasses and forage crops in Texas](#)" B-1401, for more information.

Allen, C.T., D.E. Foster and D.N. Ueckert. 1980. Seasonal food habits of a desert termite, *Gnathamitermes tubiformans*, in west Texas. *Environ. Entomol.* 9:461-466.

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