SP150

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# The Eastern Subterranean Termite [1]

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The eastern subterranean termite (EST) is the most damaging urban pest, costing more than $1 billion annually for control and repair to damaged structures. Difficulty in controlling termites is largely due to their social nature (i.e., they live in colonies). The colony usually is located in the soil and comprises three castes: workers, soldiers and reproductives. Aerial infestations with no ground connection are also known to occur if adequate food and moisture are available. All castes must be present for colony survival.

Current control methods focus on the use of a chemical barrier to exclude termites from an area. This does not kill the colony, however. Toxic baits are being developed that will eliminate colonies with significantly less pesticide.

- **Workers** (Plate 1). They have chewing mouthparts and cause all the damage in wooden structures. Workers are completely cream-colored, soft-bodied and blind. This caste cannot be used for identification.
- **Group of workers** (Plate 2). Workers are the most numerous of the three castes. Colonies have been estimated to contain from 60,000 to 5 million workers, covering an area of 25,000 square feet, with a foraging distance of 230 feet. Workers forage for food, tend eggs, young and reproductives, and build tubes.
- **Soldiers** (Plate 3). They have rectangular, brownish heads and cream-colored abdomens. They comprise only 1 percent to 3 percent of the foraging termite population. Soldiers preserved in 70 percent rubbing alcohol are useful in identification.
- **Soldier mandibles** (Plate 4). These are smooth, protrude from the front of the soldiers' heads and are specialized to defend the colony. The position of the mandibles makes it impossible for soldiers to feed themselves. They are fed by workers.
- **Alates** (Plate 5). These are winged reproductive termites. Eastern subterranean termite alates are day swarmers and appear from late January to early February. After swarming, they drop their wings and look for a nesting site. Termite alates are often confused with ants. Ants have thin waists, and termites have broad waists.

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- **De-alated reproductives** (Plate 6). After swarming, alates break off their wings and search for a place to begin a colony. Wingless termite reproductives have broad waists, long antennae and wing stubs. They burrow into the ground or rotten wood, where the queen begins laying eggs. After a swarm, de-alated reproductives often are found on the floor or near windows.

- **Tubes** (Plate 7). Termite tubes are made of mud and carton. Carton is composed of partially chewed wood, feces and soil packed together. Termites use carton to make nests and to create the characteristic tubes they use to travel from place to place. Tubes serve to maintain the high humidity required for survival and to protect termites from predators.

- **Feces** (Plate 8). Fecal material produced by the EST usually is incorporated into carton tubes. Feces are more moist than drywood termite pellets and contain lignin, the relatively indigestible portion of wood.

- **Typical entry into a structure** (Plate 9). This occurs around pipes or other utilities that penetrate the concrete slab of a structure. The chemical barrier around these areas is most easily broken. Workers use carton tubes to gain entry and to create a "highway" in which they travel to and from the nest to forage.

- **Wood damage by EST** (Plate 10). Workers feed along the grain in the soft portion of the wood and create galleries lined with muddy fecal material. A large colony can eat about a pound of wood a day. Termites can eat anything containing cellulose, the main component of wood.