



## Formosan Termites: A Chronic Problem in Mississippi

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Subterranean termites are the single greatest economic pest in the United States. They cause billions of dollars in damage each year to homes, historical structures, and commercial buildings. In addition to native subterranean termites (*Reticulitermes* spp.), the introduction of the more aggressive Formosan subterranean termite, *Coptotermes formosanus*, is believed to have significantly increased control costs in infested states. It was introduced to the southeastern U.S. by ships returning with wooden cargo from Japan after World War II. Since its introduction, the Formosan termite has spread via interstate traffic of used railroad ties, lumber, trees, and other wood products throughout the South. It has been reported from various cities in Alabama, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Texas.

The Formosan termite has a similar caste structure to native subterranean termites, consisting of workers (feed, clean and

repair the colony), soldiers (protect the colony), and both primary and secondary reproductives (“kings” and “queens”, responsible for colony proliferation). However, they have several key differences that allow them to infest food resources often underutilized by native species. Some notable differences include: larger colony sizes, slightly larger body size, a higher percentage of soldiers within a colony, the ability to nest above-ground without maintaining a connection to the soil for moisture needs, and dispersal flights of winged reproductives (alates) occur at night (native termites disperse during daylight) and are attracted to lights.

Dispersal flights (Fig. 1) usually occur between mid-February and mid-May for native termites and late-April through mid-June for Formosan termites. Native termite dispersal flights usually occur during the daylight hours, and often during the morning. Formosan termites swarm at night and are strongly attracted to lights. It is not unusual for homeowners to



Figure 1: Winged reproductive (alate) Formosan termite dispersal flight, or swarm, in south Mississippi.

report huge swarms of Formosan termite alates flying around utility lights and near homes. The emergence of termite alates from inside a home, building, tree, or stump is a sure sign of an infestation.

Identification of the pest is the first step in understanding a problem. This is best accomplished through examining the soldiers or alates. Figure 2 shows the difference between the head structure of a native subterranean termite soldier and the invasive Formosan



Figure 2: Native subterranean termite soldier (top) has a rectangular shaped head and FST soldier (bottom) has a teardrop shaped head

termite soldier. Figure 3 shows the difference between native native subterranean alates and Formosan termite alates. Note the color and size difference in the alates.



Figure 3: Winged Formosan termite alates (swarmers) (left). They are much lighter in color and much larger than typical subterranean termites pictured on the right. Size - up to 3/4" inches long

Unlike native subterranean termites, Formosan termites have also been reported to infest living trees. Formosan termite infestations were documented in oak, pine, cypress, cedar, and Crapemyrtle trees throughout Central Park in New Orleans, LA. Living tree infestations are also common in and around Poplarville, MS. This furthers their liability for damage in parks and near homes. For MORE information regarding Formosan termite identification and home and tree inspection, go to [MSUcares.com](http://MSUcares.com) or [LSUAgCenter.com](http://LSUAgCenter.com).

The northern progression of the Formosan termite is thought to be limited to areas south of 35°

north latitude (a demarcation line running approximately east and west through Memphis, TN), due to temperature limitations on egg development (Raina, et al. 2003 ). Unfortunately, the suitable habitat for colony growth and proliferation encompasses all counties in Mississippi. Formosan termite colonies have been reported in 25 counties in Mississippi: Counties highlighted in yellow have reported Formosan termite colony infestations as of August 2009 (Fig. 4).

Preventing the spread of the Formosan termites into interior counties of MS has been a major concern of the United States Department of Agriculture (USDA). In 1998, Operation Full Stop was implemented to reduce the spread and overall numbers of Formosan termites throughout the southeastern U.S., with a goal to reduce the \$1 billion spent each year on control, damage, and repairs. The USDA Agricultural Research Service (ARS) was charged with implementation and monitoring efforts of this program, which are still in effect today. The spread of Formosan termite colonies are often facilitated unknowingly by a landowner through the hauling of wood or wood products. If any wood products or woody plant materials are moved from any of the counties

highlighted in yellow (Fig. 4), great care should be taken to ensure materials are not infested with Formosan termites. The movement and transport of any materials infested with FST has been deemed illegal and is prohibited.



Figure 4: Formosan subterranean termite distribution in Mississippi.

Any infestations thought to be related to Formosan termites should be treated by a professional pest control operator. Landowners may report any new or suspect infestations to the USDA-ARS.

**For additional information contact:**

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