BUG BIZ
Pest Management and Insect Identification Series
LSU AgCenter Research · Extension · Teaching

Cryptotermes brevis, West Indian Drywood Termite

(Blattodea: Kalotermitidae)

Paula Castillo, Forest Huval, Chris Carlton, T.E. Reagan

Description

The West Indian drywood termite is an invasive species that feeds on softwood and hardwood timber. Drywood termites are social insects that live in colonies within single pieces of wood. Colonies comprise three well defined castes: reproductives (king, queen, alate females and unmated males), soldiers, and immature reproductives, also called pseudergates or false workers. Members of the reproductive caste are medium brown in color and larger in size than non-reproductives (soldiers and pseudergates), ranging from slightly less than 1/3 of an inch (9 mm) in length when they lack wings, to almost 1/2 of an inch (11 mm) when winged (unmated alates). Soldiers are pale yellow in color, about 1/6 to 1/5 of an inch (4 to 5 mm) long, with a characteristic plug-like head that is deeply wrinkled and nearly black. The mandibles are short compared to other species of drywood termites, and the overall shape of the head is adapted to plug openings that can be used as entry points for ants or other insects into the interior of the nest. Pseudergates are usually the same size or smaller than soldiers, but they lack dark coloration. Reproductives and soldiers are necessary for identification of this species due to anatomical features not present in members of other castes. *Cryptotermes brevis* is similar to other drywood termite species in possessing cylindrical bodies, short legs, well-developed mandibles, bead-like antennae, and well-developed tarsal claws that allow them to grip wood surfaces.

Castes of the West Indian drywood termite (Rudolf H. Scheffrahn, University of Florida, Bugwood.org, Creative commons 3.0).

Life Cycle

In Louisiana, large swarms of winged reproductives can be observed during dusk during late June and July. After a brief flight, male and female alates go to the ground and remove their wings. When a male encounters a female, he follows her as she looks for openings in wood that may be suitable for starting a

colony. This choice is important because these termites live and feed within the same piece of wood. After mating, the queen lays eggs that incubate for about six months before tiny immature termites hatch. This process is continuously repeated over time, increasing the colony size. The first soldiers may appear after two or three years. New reproductives appear after about five years when the colony reaches maturity. Depending on the size of the piece of wood where the nest is located, a mature colony may survive up to 10 years, and will probably contain more than 1,000 individuals. When new alate reproductives reach maturity, they fly away, mate and initiate new colonies elsewhere.

Close-up of head of a soldier of Cryptotermes brevis (Pest and Diseases Image Library, Bugwood.org, Creative commons 3.0).

Ecological Significance and Pest Status

This species is native to Pacific-coastal desert regions of South America, north of Chile and Peru. From there it has dispersed worldwide through human activities, reaching most tropical regions of the world including tropical South America from Panama to the United States in North America, several Caribbean islands, South Africa, Australia and Madagascar.

Cryptotermes brevis is widely distributed in the U.S. and is a serious pest of man-made structures, including structural timber in buildings, wooden boats, furniture, out buildings, etc. Losses caused by this termite species are estimated to be around $120 million in the U.S. In Louisiana, they are the second most destructive wood pest after subterranean termites. Infestations are noticeable when wood begins to soften, blister or when hexagonal fecal pellets can be observed around small diameter (1/25 of an inch) "kick-out" holes present in infested wood that indicate the location of the nest. When infestations are older than five years, alate reproductives can be found in or around the infested wood during mating season.

The hexagonal frass (fecal pellets) of Cryptotermes brevis found in infested areas (Rudolf H. Scheffrahn, University of Florida, Bugwood.org, Creative commons 3.0).

Control

Cryptotermes brevis infestations can be prevented or minimized by utilizing commercially available insecticides labeled for drywood termites, as well as with good integrated pest management practices. Entrance of alate reproductives into structural wood and furniture may be prevented through the use of proper construction techniques. Tight joints, wide roof overhangs and good sealing to keep wood dry, along with the use of protective coats of paint or varnish, are widely utilized practices.

When a large infestation is suspected, a whole-structure treatment with fumigants or heat may be necessary to eradicate all termites. Alternatively,

Wood damaged by Cryptotermes brevis (Rudolf H. Scheffrahn, University of Florida, Bugwood.org, Creative commons 3.0).

when an infestation is small and localized, or spot treatments are preferred, injecting insecticide formulations of liquid, dust or foam into the infested wood has proven effective. In addition, non-chemical options can be utilized, such as localized heat or cold treatments, as well as the use of high-voltage electricity to electrocute termites inside the wood.

If major damage has been done to structural wood or furniture, replacement and/or disposal may be inevitable to avoid further damage. The first and most important step in controlling infestations of wood damaging pests is correct identification of the causal organism. Entomologists with the LSU AgCenter or other trained specialists can assist with the correct identification of wood damaging insect pests.

References

Evans, T. 2010. Invasive termites, pp 519-553 in Biology of termites: a modern synthesis (David Bignell, Yves Roisin, and Nathan Lo, Editors), Springer, The Netherlands.

Gordon, J.M., R.H. Scheffrahn, and N.Y. Su. 2020. West Indian Powderpost Drywood Termite, *Cryptotermes brevis* (Walker) (Insecta: Isoptera: Kalotermitidae). University of Florida EENY-79. https://edis.ifas.ufl.edu/pdf/IN/IN23600.pdf (accessed 11 January 2022).

Messenger, M.T. 2004. The termite species of Louisiana: An identification guide. New Orleans Mosquito and Termite control board bulletin No. 04-04, Third Edition.

New Orleans Mosquito, Termite, and Rodent Control Board. 2022. Termite Control. https://www.nola.gov/mosquito/termite-control/ (accessed 11 January 2022).

Rust, M.K., and N.Y. Su. 2012. Managing social insects of urban importance. Annual Review of Entomology 57: 355-375.

Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: https://bit.ly/36c4awm.

Visit our website: www.LSUAgCenter.com

Matt Lee, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

PUB 3882 (online) 6/23

Visit our website: www.LSUAgCenter.com