



Treating Live Trees for Formosan Termites

Dr. Kevin D. Chase
Clemson University
October 30, 2019



BARTLETT
TREE EXPERTS

SCIENTIFIC TREE CARE SINCE 1907

Termite images from: epestsupply.com

SWARMING!

We had 236 entries in this week's caption contest. You folks were buzzing with creativity! I imagine you sitting in your houses, punchline pens in hand – with the outside lights turned off to keep the swarms away!! These were very funny! – Walt

(As always, when we have duplicate entries we pick the earliest sent in.) Here are this week's winner and finalists.

WINNER:

Stuart G. Clark, Lafayette (Punchline lettered into word balloon)

FINALISTS:

Kent Riddle, Denham Springs: "I don't care how bad it gets Marge, we are NOT moving in with your mother!"

Ned Goldberg, Metairie: "Global Swarming!"

Robert Saloom, Baton Rouge: "You fellas are way too late... Our kids have already eaten us out of house and home!"



WALT'S CAPTION CONTEST



Rodney Ratliff, Mandeville: "The bugs are back in town!!"

Mary Thompson, Baton Rouge: "Well, you did say you wanted an open floor plan!"

David Brown, Auburn, AL: "Don't worry. They are like the Legislature. They create chaos for a while and then they are gone for a year."

Michael S. Weinberg, Destrehan: "Look Hon; there's almost as many of them as Democrats running for President!"

Fred Reynolds, Kenner: "Did you pay the last pest control bill?!"

David Delgado, New Orleans: "Remember the movie, The Birds?"

Jay Fox, Madisonville: "The only thing holding it up are the roaches!"





© 2007 Ed Freytag, NOMTRCB

**“Known in China
as the house white
ant”**



<https://arceneauxpest.com/formosan-termite-damage-in-baton-rouge/>



Coptotermes formosanus - Formosan subterranean termite

- Arrived to southeast USA in 1950's
- Readily transports in wood material (e.g., railway ties)
- Causes ~\$300 million annually (Suszkiw 1998)





<https://hiig.com/xterminator-pro/risk-management/map-of-counties-in-the-southeast-u-s-with-confirmed-infestations-of-formosan-subterranean-termites-2/>

'Super termites' have moved into the Midlands. They can eat your home 10 times faster

BY LUCAS DAPRILE



JULY 11, 2018 06:02 PM, UPDATED JULY 12, 2018 12:14 PM



Formosan Subterranean Termites, commonly referred to as "super termites" or by their scientific name *Coptotermes formosanus* ©SCOTT BAUER, USDA AGRICULTURAL RESEARCH SERVICE, BUGWOOD.ORG



The Termite Menace in New Orleans: Did They Cause the Floodwalls to Tumble?

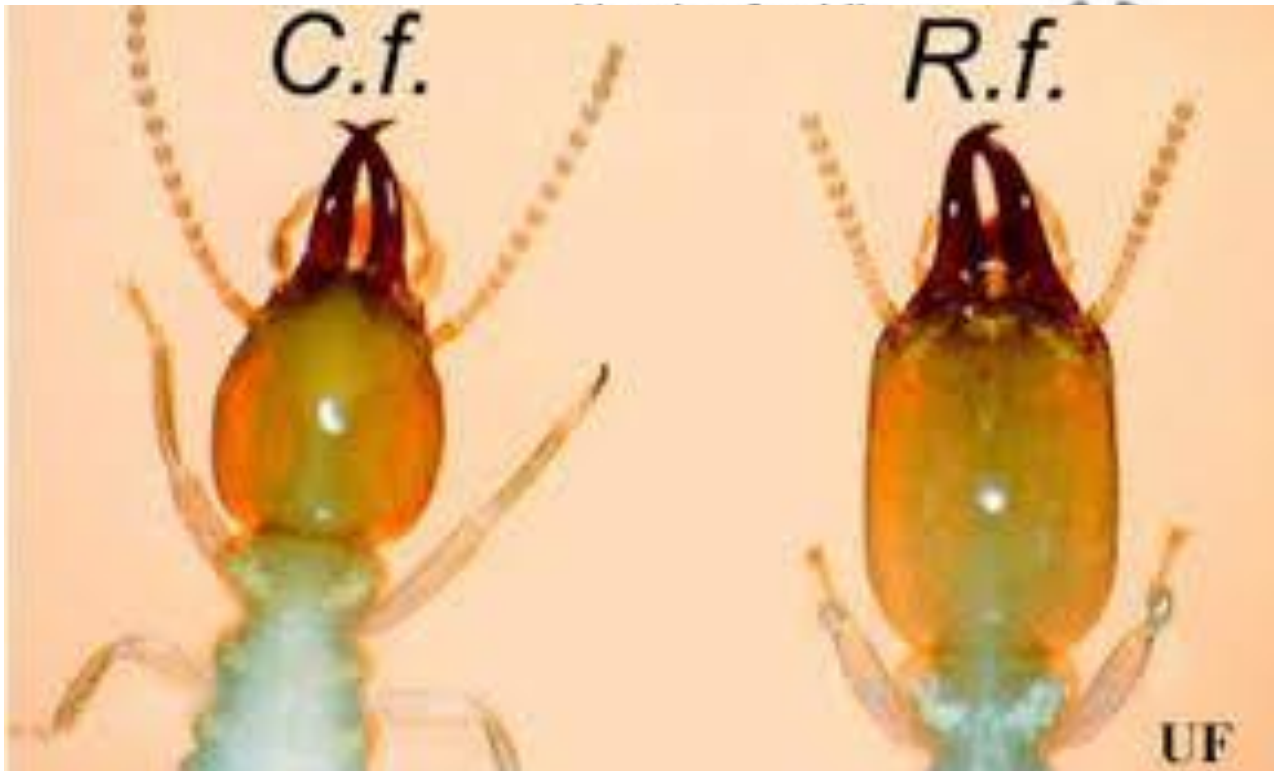
Gregg Henderson



New Orleans will continue to suffer from the assaults imposed by the floods of August and September of 2005 for decades to come. Two devastating gulf water hurricanes, Katrina and Rita, breached the soil levee and concrete floodwall systems that protect the city of New Orleans, Louisiana and points southward. Over 1,800 people lost their lives as water rose up

to 20 ft, trapping residents in their attics in some locations. Many more people lost their homes and businesses, and their lives are in limbo as they remain strewn across the United States in temporary housing provided by the Federal Emergency Management Agency (FEMA). Eighty percent of New Orleans remained flooded for almost a month until 11 October 2005, when New Orleans was

Insect Identification



Wings of swarmers



Subterranean
front edge of wing
with 2 heavy veins
*formosans have hairs
on their wings

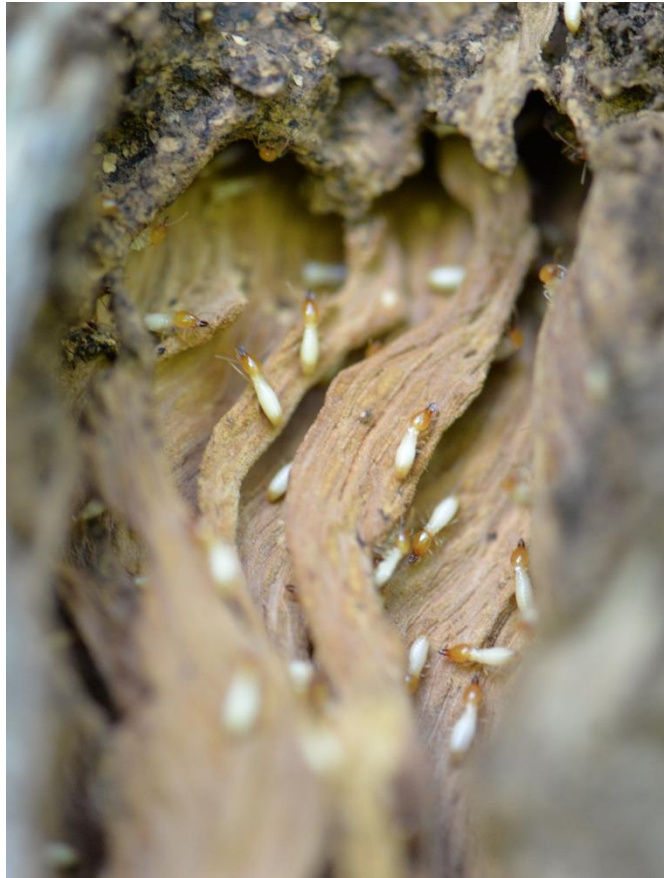


Drywood
front edge of
wing with 3
heavy veins;
crossveins
present

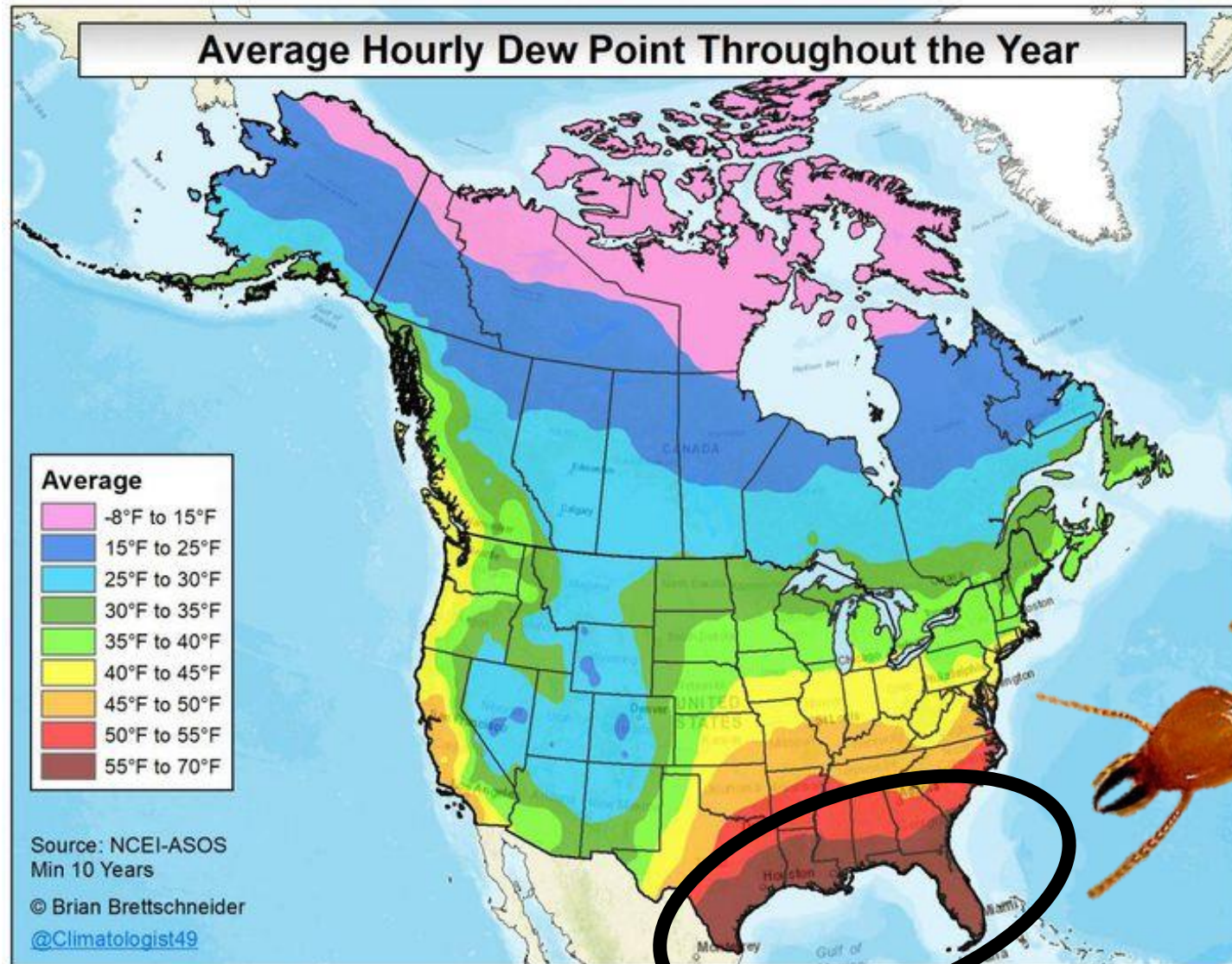


Insect Identification

- Colony ratio of soldiers to workers: 5-10% *C. formosanus* soldiers



Formosan termites are found in humid areas!



• Signs and symptoms

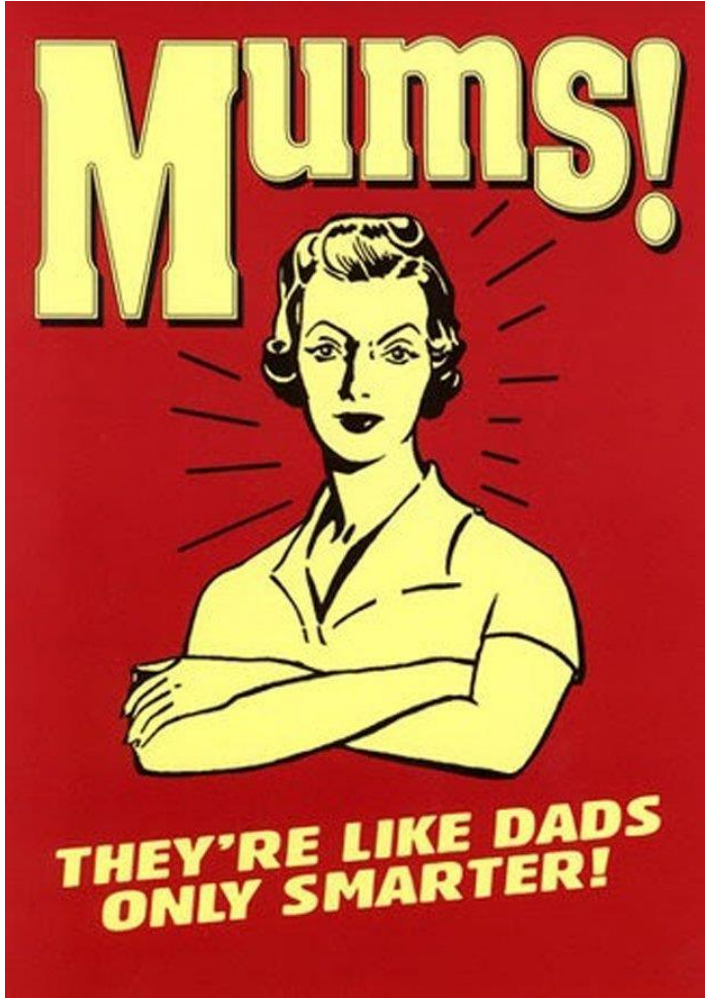




Insect Identification







Can Formosan termites attack living trees?



shutterstock.com • 317936303

Not just urban: The Formosan subterranean termite, *Coptotermes formosanus*, is invading forests in the Southeastern USA

Theodore A. Evans · Brian T. Forschler · Carl C. Trettin



it is known as the Formosan subterranean termite. In the USA it is best known as a pest of buildings in urban areas, however *C. formosanus* also attacks live trees along streets and in urban parks, suggesting it may be able to invade forests in the USA. A survey of 113

Preference of Formosan Subterranean Termites for Blue-Stained Southern Yellow Pine Sapwood

N. S. LITTLE,^{1,2} N. A. BLOUNT,¹ A. J. LONDO,³ S. C. KITCHENS,⁴ T. P. SCHULTZ,⁴
T. E. McCONNELL,⁵ AND J. J. RIGGINS¹

J. Econ. Entomol. 105(5): 1640–1644 (2012); DOI: <http://dx.doi.org/10.1603/EC12081>



• Signs and symptoms



Tree species Formosan termite is likely to be found in



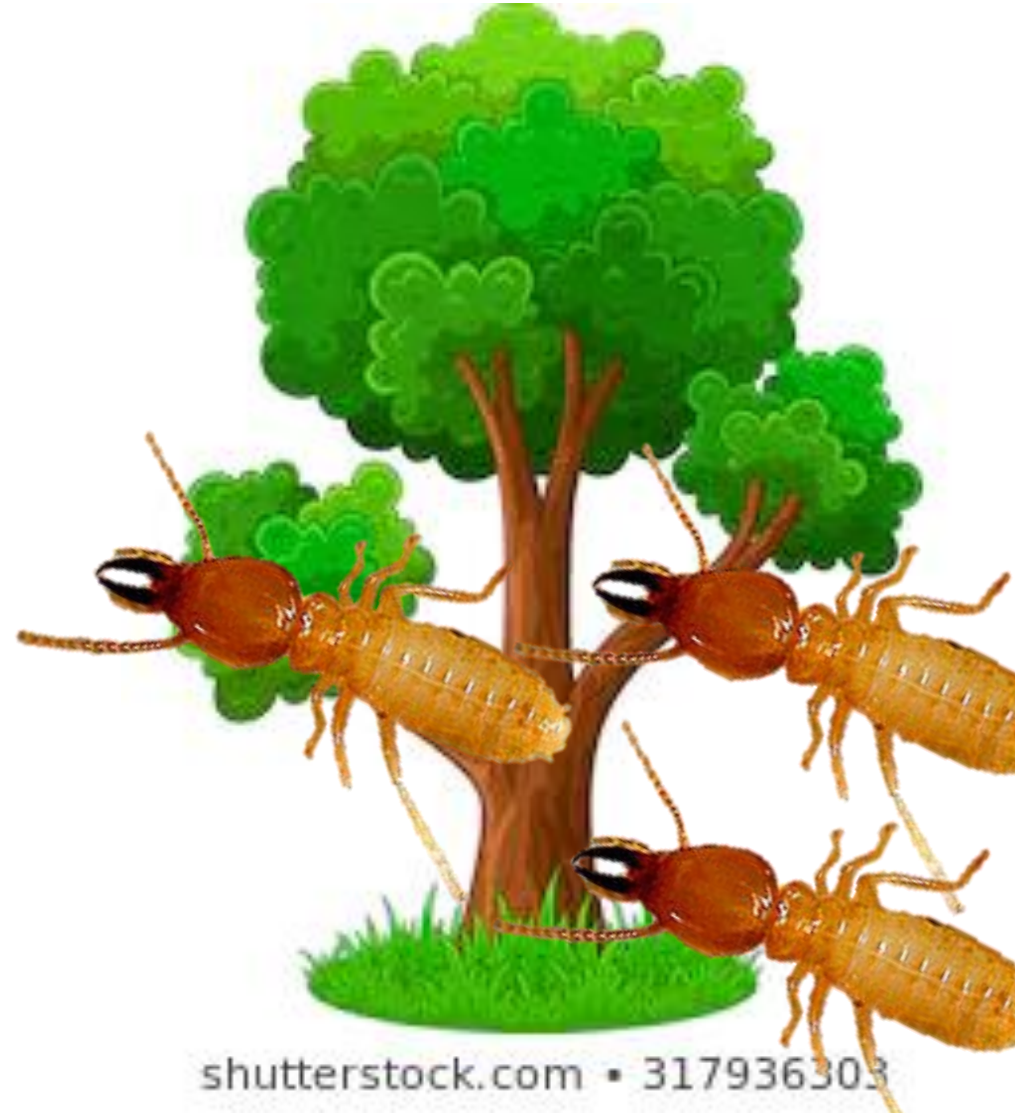
- 1 - *Quercus nigra* – water oak
- 2 - *Carya illinoensis* - pecan
- 4 - *Ulmus americana* – American elm
- 5 - *Liquidambar styraciflua* – Sweet gum
- 6 - all other trees



- In reference to water oak: “Largely due to the hollow cavity that forms as the pith and heartwood decay, this tree is tailor made for the Formosan [termite]”



The Grey



Licensure

State	Requirements to obtain termite license in each state	License Category
SC	Prove two years of verifiable experience in category 7A (Industrial, Institutional, Structural, and Health-Related Pest Control). The two years may be covered by a college degree in a life science.	7A
GA	Prove two years of verifiable experience in WDO category, one year of which can be a college degree that must be approved by the state	30
FL	Prove three years of verifiable experience in the pest control industry before you can test for the WDO certificate. You have to have a certificate in order to get a license. It is possible to hire a certified operator with the WDO category then apply for a license with the FL DOA	Wood Decaying Organism -
LA	Prove four years of verifiable experience within the last six years (in LA or another state). A degree from an accredited four-year college with a major in entomology or 12 credits in entomology and one of experience is also acceptable.	Structural Pest Control - Termite and other WDO Control
TX	Prove three years of verifiable experience in WDO category. All three years may be covered by a college degree in entomology, forestry, landscape architecture, agronomy, environmental science, horticulture, etc.	Structural Pest Control Applicator - Termite Control
NC	License applicants must be certified (see Certified Applicator section) in the phase(s) in which licensing is desired and have two years experience in the appropriate phase(s) of structural pest control. A degree from a recognized college or university with training in entomology, sanitary or public health engineering, or related subjects may substitute for experience in the structural pest control industry.	Structural Pest Control Operator - Phase W
* WDO stands for Wood Decaying Organism		



Licensure – South Carolina

“Dr. Chase, your company’s current Category 3 Turf & Ornamental license will more than suffice.

Regards,

Mike

**Dr. Michael D. Weyman, Deputy Director
Clemson University
Regularly Services – CID”**



Licensure – Louisiana

“The treatment of termites in trees in Louisiana falls under the Commercial Pesticide Applicator Category 3 - Ornamental and Turf Pest Control. A pesticide certification and license in Louisiana is required of persons who treat pests of trees for a fee.

This type of pesticide application is not considered structural pest control and therefore does not require a contract.”

--

Harry Schexnayder

Pesticide and Environmental Programs

Louisiana Department of Agriculture & Forestry

5825 Florida Blvd, Suite 3003

Baton Rouge LA 70806

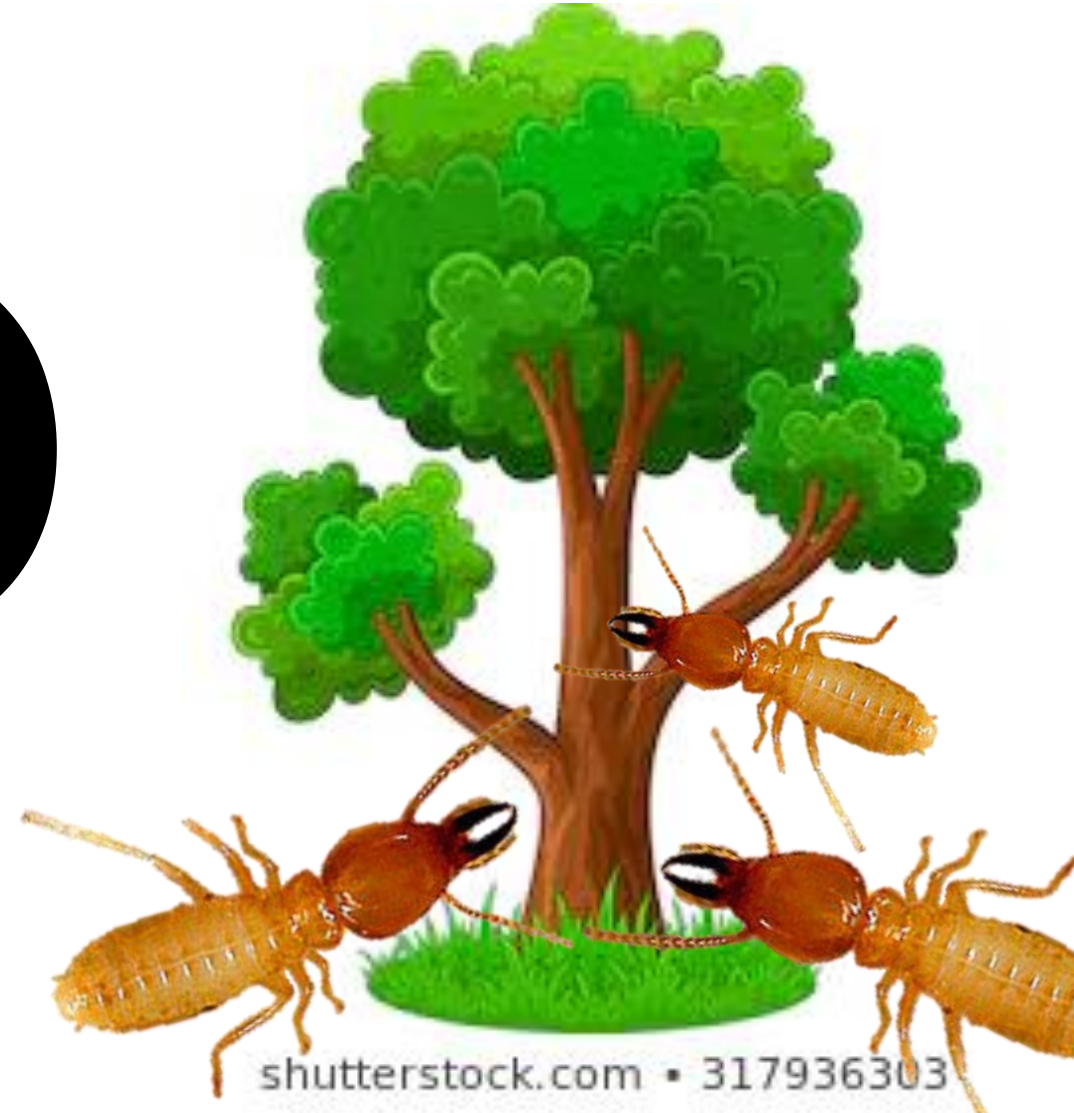
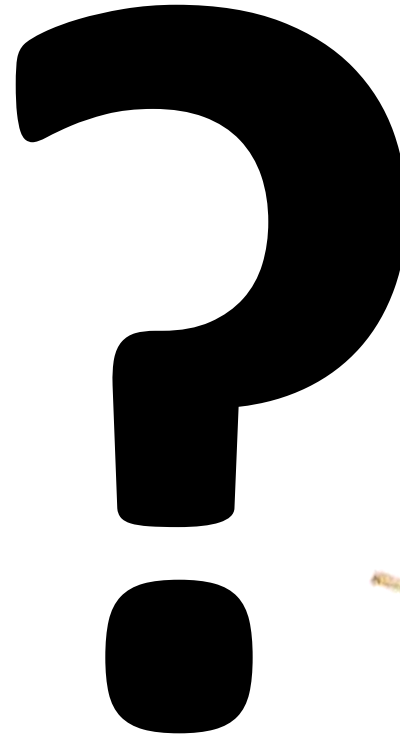
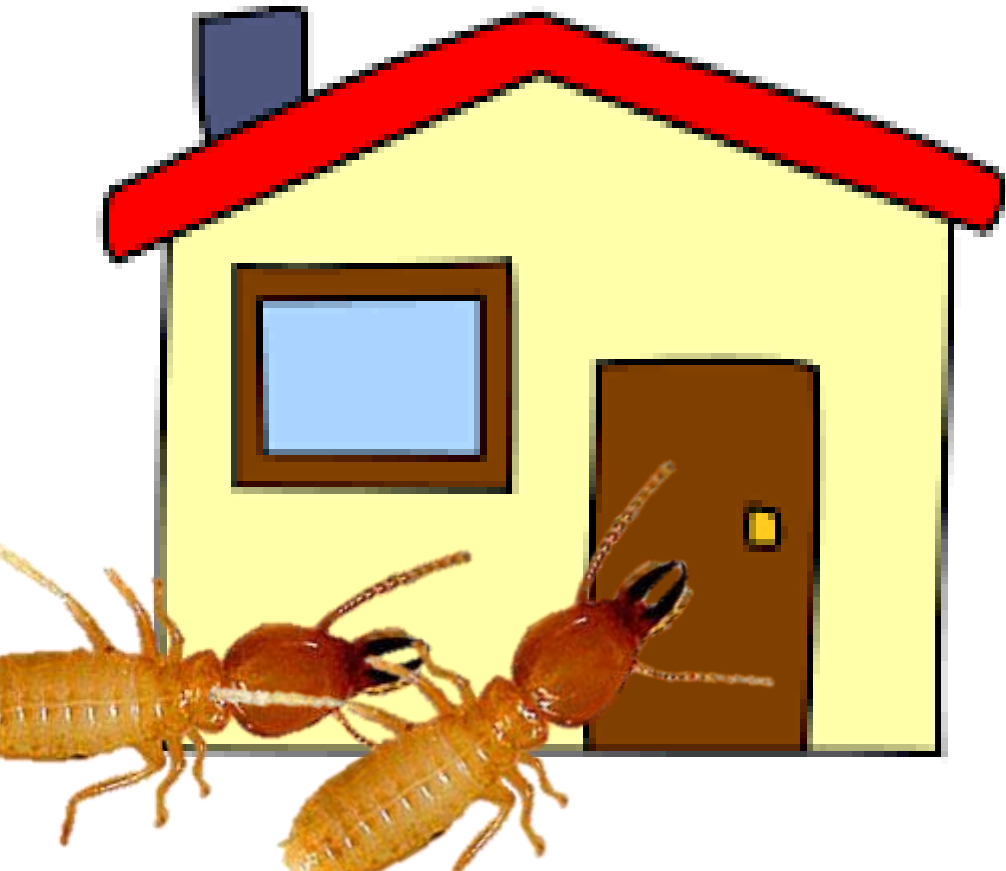
225-925-3763



The Grey

Turf & Ornamental license for LA and SC

Structural Wood-decaying
Organism License



Trophallaxis - the exchange of food, liquid or other materials between social organisms



Chaindrite



Chaindrite





Treatment

• Fipronil

TERMIDOR® SC TERMITICIDE/ INSECTICIDE

DOG MD
MAXIMUM DEFENSE™ **PLUS**
Flea & Tick Topical

FIPRONIL 9.8%
(S)-METHOPRENE 8.8%

For use ONLY on dogs **23-44 lbs**

Kills fleas, flea eggs, flea larvae, ticks & chewing lice

Fast acting
Long lasting
Waterproof

Kills ticks including those that may transmit Lyme disease

ACTIVE INGREDIENTS:

Fipronil	9.80%
(S)-methoprene	8.80%
OTHER INGREDIENT:	81.40%
TOTAL	100.00%

FRONTLINE® Plus
FOR DOGS

Kills fleas, flea eggs & larvae, ticks & chewing lice

- Fast-acting
- Long-lasting
- Waterproof

Kills ticks, including those that may transmit Lyme disease

For use ONLY on DOGS **23-44 lbs**

ACTIVE INGREDIENTS:

Fipronil:	9.8%
(S)-methoprene:	8.8%
INERT INGREDIENTS:	81.4%
TOTAL:	100%

same active ingredients, same concentrations

Active Ingredient:

fipronil: 5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(1,*R,S*)-(trifluoromethyl)sulfinyl]-1*H*-pyrazole-3-

carbonitrile 9.1%

Other Ingredients: 90.9%

Total: 100.0%

One gallon of Termidor® SC Termiticide/Insecticide contains 0.8 lb of fipronil.

EPA Reg. No. 7969-210

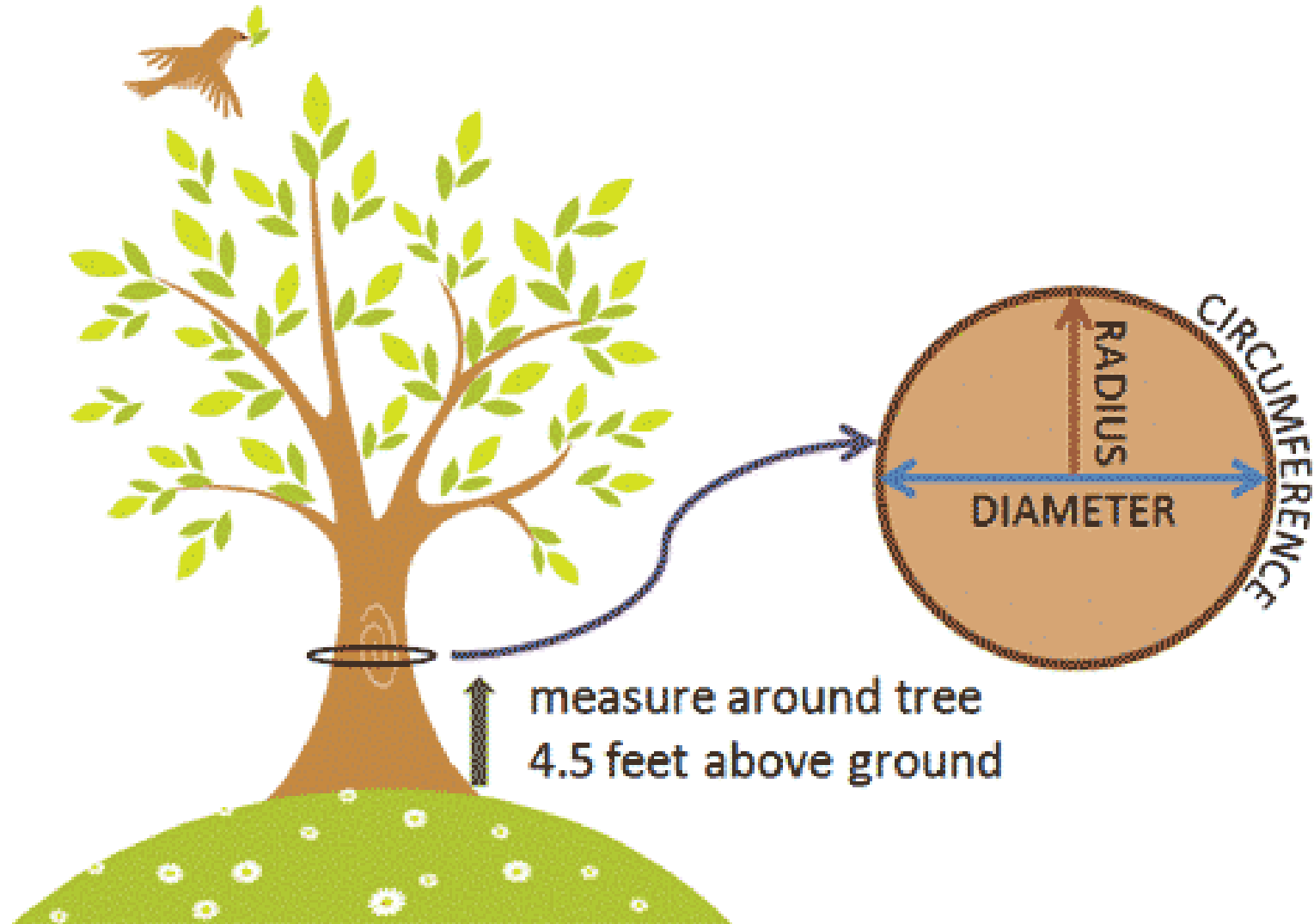
EPA Est. No.

Treatment

- **Active Ingredient: Fipronil**
 - Soil drench 0.06% (.8 oz / gallon H2O)
 - Foliar application 0.06% (.8 oz / gallon H2O)



Treatment



4 gallons per 10 linear feet measured as the circumference

Treatment

- Is a foaming agent required?
 - 0.125% (1.6 oz / gallon H₂O)



Efficacy

- Can provide multiple years of protection **BUT** needs to be monitored





Monitoring

