



Non-Subterranean Termites¹

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Drywood Termites

Drywood (non-subterranean) termites as well as subterranean termites occur in Florida (Figure 1). Drywood termites infest dry wood and do not require contact with the soil. The subterranean species must nest in the soil in order to survive. Subterranean termites are discussed in a separate fact sheet because signs of infestations and control measures differ drastically.

Drywood termites are social insects that live in colonies. The colonies are composed of kings, queens and soldiers. There is no worker caste as in subterranean colonies. The work is performed by immature termites before they become adults. King and queen termites perform the reproductive functions of the colony. They are light to dark brown and one-third to one inch in length. Soldiers guard the colony against invaders such as ants. They are white and wingless with large brownish heads and jaws. The nymphs (immatures) which are the most numerous caste are white and wingless. The soldiers and immatures remain inside the wood at all times.

Subterranean termites occur throughout the state while drywood termites are more common along coastal areas although they are also found inland.

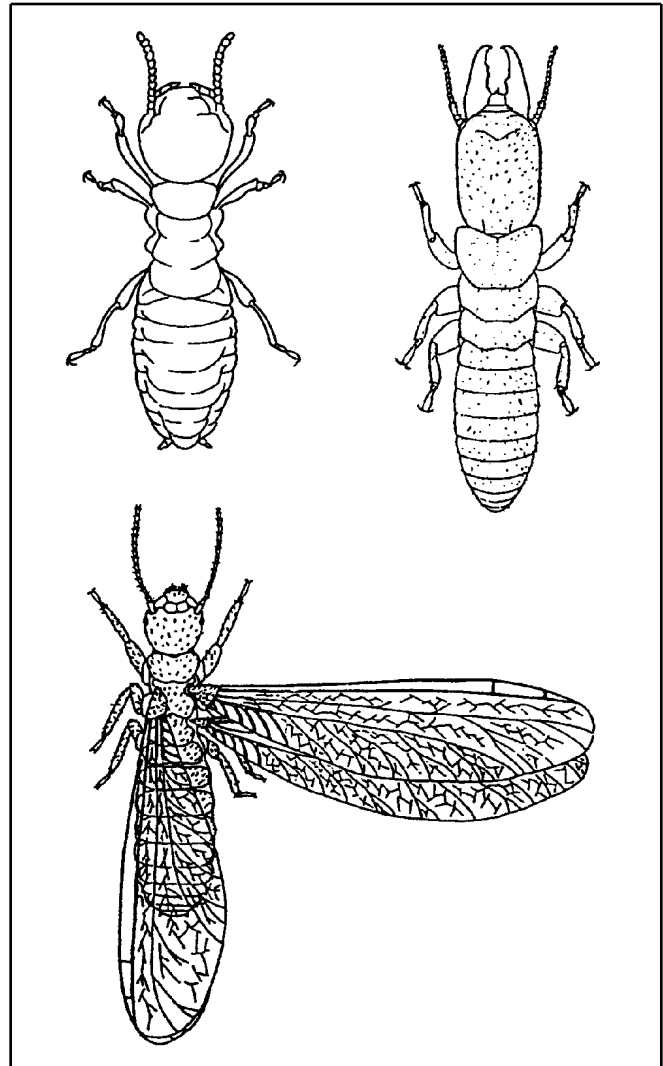


Figure 1. Drywood termite.

1. This document is ENY-211, one of a series of the Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. First published: April 1993. Revised: May 1999. Please visit the EDIS Website at <http://edis.ifas.ufl.edu>. Additional information on these organisms, including many color photographs, is available at the Entomology and Nematology Department WWW site located at <http://www.ifas.ufl.edu/~entweb/entomolo.htm>.
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Termite food consists of cellulose obtained from wood. Protozoa in their digestive tracts convert the cellulose into usable food. Infestations of drywood termites may be found in almost any product containing cellulose. They are most commonly found infesting woodwork in buildings and furniture.

Non-subterranean termites remain hidden within the wood or other material on which they feed, so that those actually doing the feeding are seldom seen. Galleries or tunnels in the wood made by drywood termites cut across the grain of the wood and destroy both soft spring wood and the harder summer growth. Galleries made by the subterranean species follow the grain of the wood and only the soft spring wood is attacked.

Signs of Infestation

There are several ways drywood termite infestations may be noticed. At certain times of the year, during daylight hours, king and queen termites emerge from the colonies. The purpose of these flights is to establish new colonies. Peak swarming periods occur April through August in Florida although they may swarm to a lesser extent during other months. Winged termites can be distinguished from winged ants because termites have a thick waist whereas ants have a distinctly thin or wasp-like waist. The appearance of winged termites in the home is an indication of probable infestation; however, they may come in from outside. Termite wings break off shortly after they swarm and since they are attracted to light at this stage, their discarded wings are often found on window sills.

Drywood termites, unlike subterraneans, excrete pellets of partly digested wood. These pellets are cream to reddish-brown or black. The pellets are 1-2 mm long and are pushed from the galleries and found on surfaces beneath the infested wood. Pellets usually fall into piles as the termites push them out of the infested wood. A sign of advanced infestation is surface blisters. These termites sometimes tunnel close to the surface giving the wood a blistered appearance. Infestations may be detected by tapping the wood every few inches with the handle of a screwdriver. Damaged wood sounds hollow - a papery rustle sound indicates tunnels just beneath the surface.

Preventive Measures

Used lumber, furniture and other wooden articles should be carefully inspected for termite infestations. Drywood termite reproductives may enter a building through the attic or foundation vents, under or directly through shingles or under eaves. All windows, doors and vents, especially those in the attic, should be screened with 20 mesh screen. Paint will give exposed wood protection against termite entry. Before painting all cracks and crevices should be filled with putty or plastic wood. Commercial pressure treated wood cannot be consumed by drywood termites for a much longer period. Certain woods are naturally resistant to termite attacks; among these are heart wood of redwood, bald-cypress, mahogany, and Spanish cedar; however, these woods will become susceptible after several years when subjected to weathering.

Control

Drywood and subterranean termites require completely different control methods; therefore the termites must be correctly identified. If in doubt, take several soldiers, winged specimens or broken-off wings to your County Extension Office.

If detected in the early stages and damage is localized, a drywood termite colony may be controlled by removing and replacing the damaged wood. It is very important to carefully inspect all woodwork of the entire building, especially attics, baseboards, window sills, floor joists, and furniture for termite pellets and/or damaged wood.

Local treatments for drywood termites include wood injection of insecticides or electrocution injection. Wood injections requires a hole to be drilled into termite galleries so insecticide can be injected into the infested wood. Electrocution requires special equipment available to pest control operators. Spray or foam applications to raw wood will prevent drywood termites from entering the wood and may control existing termites, depending on the situation.

If the infestation is too extensive and advanced for local treatment, it will be necessary to tent and fumigate the entire building. Although this method is

very expensive and leaves no residual protection, it is usually the only alternative when many termite colonies are present. Fumigation can only be performed by a licensed pest control operator. Contact several firms for inspections and estimates for treatment.

Florida Dampwood Termite

Colonies are made up of reproductives, soldiers, and workers (nymphs). Reproductives are to 1" long, light to dark brown and have two pairs of wings of equal length with two pigmented veins and no median vein. Soldiers are " long, wingless, dark brown in color, mandibles without teeth and head wider than pronotum, oval-shaped with sides convex. Workers are about " long, wingless and white to cream in color. They nest in damp wood.

Signs of Infestation

Some signs of infestation are small six-sided fecal pellets in dry areas, muddy excrement in wet areas, and hollow-sounding wood with galleries cutting across the grain.

Control

For non-chemical control, construction should be designed to eliminate moisture and water leaks and wood near soil should be treated with a preservative. Remove and replace infested or damaged wood.

To chemically control these termites, treat wood with termiticides registered for wood treatment.

Southern Dampwood Termite

Colonies are made up of reproductives, soldiers, and workers (nymphs). Reproductives are to 1" long, light to dark brown, and have two pair of wings of equal length with three or more pigmented veins and a median vein with numerous cross veins. Soldiers are about 1" long, wingless, brown in color, mandibles with teeth, elongated head, and antennae with the third segment the same size as the second and fourth. Workers are about " long, wingless, and white to cream in color.

The Southern dampwood termite nests in damp wood and attacks both soft springwood and harder summer growth.

Signs of Infestation

Two infestation signs are small hard dry fecal pellets pushed to the outside of wood work, and hollow-sounding wood with galleries cutting across the grain.

Control

For non-chemical control, construction should be designed to eliminate moisture and water leaks, and wood near soil should be treated with a preservative. Remove and replace infested or damaged wood.

To chemically control these termites, treat wood with termiticides registered for wood treatment.

There are no controls recommended for homeowner use.

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Aero-cide Contact Insecticide (Aerosol)		Pyrethrins + d-trans Allethrin + Piperonyl Butoxide + MGK264 - 1.0 + 1.0 + 4.0 + 4.0%		
Structures	Drywood termites	2 hours	None	None
Cytec Crack and Crevice Pressurized Residual (Aerosol)		Cyfluthrin - 0.10%		
Structures	Drywood termites	None	None	None
Use this product with supplied actuator and injection tubes. Inject product into cracks and crevices and void spaces where insects may be harboring, living, and breeding. Locate suspected infestation. Drill pilot holes into insect tunnels, galleries and inaccessible closed voids. This treatment is for localized infestations only.				
Soil/Wood Treatment, Utility Poles/Fence Posts	Drywood termites	None	None	None
Drill pilot holes into insect tunnels and galleries. Inject product. For localized infestations only. Treatment of in-ground service boxes-- treat open holes or drill holes where insects are suspected. Inject product into each hole.				
DeltaDust (Dust)		Deltamethrin - 0.05%		
Structures	Drywood termites	None	None	None
In living areas, make applications in such a manner as to avoid depositions on exposed surfaces or introducing the material into the air. In the home all food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food should be covered or removed. This product is intended for applications with hand or power duster, with a paint brush or by other suitable means, to hiding and runway areas and other places where insects are found. Authorized for use in non-food/feed areas of food/feed plants. This product may be used as a void treatment. Be sure to thoroughly treat service ducts, false floors and ceilings, wall voids, attics and crawl spaces.				
Demon EC (Emulsifiable concentrate)		Cypermethrin - 25.3%		
Wood Impregnation/Wood Injection	Drywood termites	Do not contact until dry	None	3 weeks
Can be used for pressure treatments. For spray, dip, or brush treatments. Wood can be handled after treatment when dry.				
Wood Surfaces	Drywood termites	None	None	None
Demon TC (Emulsifiable concentrate)		Cypermethrin - 25.3%		
Wood/Wood Products/Lumber (structural)	Drywood termites	Do not contact until dry	None	None
Wood Surfaces	Drywood termites	Do not contact until dry	None	None
Use spray at a rate of 1 gallon per 1,000 sq. ft. Don't apply until location of heat pipes, ducts, water and sewer lines, and electrical conduits are known and identified.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Demon WP (Wettable/soluble powder)		Cypermethrin - 40.0%		
General Structures	Drywood termites	Do not contact until dry	None	None
Do not use as a space spray. Use only in well-ventilated areas.				
Commercial Warehouses/Industrial Buildings/Storage Buildings	Drywood termites	Do not contact until dry	None	None
For control of aerial termites in localized areas of infested wood in buildings. Do not use as a space spray. Use only in well-ventilated areas. Do not use in warehouses while raw agricultural commodities for food or feed are being stored. Do not use in warehouses where raw or cured tobacco is stored.				
Utility Poles/Fence Posts, Wood/Wood Products/Lumber (structural)	Drywood termites	None	None	None
For control of aerial termites in localized areas of infested wood in buildings. Do not use as a space spray. Use only in well-ventilated areas. Not labeled for use in food areas of food handling establishments. Authorized by USDA for use in federally inspected meat, poultry, and egg processing and servicing establishments.				
Demon WP Water Soluble Packets (Wettable/soluble powder)		Cypermethrin - 35.6%		
Utility Poles/Fence Posts	Drywood termites	Do not contact until dry	None	None
For termites active inside trees, poles and fence posts.				
Wood/Wood Products/Lumber (structural), Wood Surfaces	Drywood termites	Do not contact until dry	None	None
For control of aerial termites in localized areas of infested wood in structures.				
Dragnet FT (Emulsifiable concentrate)		Permethrin - 36.8%		
Wood/Wood Products/Lumber (structural)	Drywood termites	Do not contact until dry	None	None
This product prevents and controls termite infestations in and around structures and constructions. Apply emulsion to voids and galleries in damaged wood and in spaces between wooden members of a structure and between wood and foundations where wood is vulnerable. Applications may be made to inaccessible areas by drilling and then injecting emulsion with a crack and crevice injector into the damaged wood or void spaces. Do not apply emulsion until location of heat pipes, ducts, water and sewer lines and electrical conduits are known and identified. Do not apply to electrical fixtures, switches or sockets.				
Wood Impregnation/Wood Injection	Drywood termites	Do not contact until dry	None	None

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
This product prevents and controls termite infestations in and around structures and constructions. Application to inaccessible areas may be made by drilling and injection of emulsion using a crack and crevice injector.				
Wood Surfaces	Drywood termites	Do not contact until dry	None	None
This product prevents and controls termite infestations in and around structures and constructions. This product may be used for broadcast treatment of wood for the control of wood infesting insects and nuisance pests outside of a structure.				
Ficam D (Dust)		Bendiocarb - 1.0%		
Structures, Restaurants/Commercial Kitchens	Drywood termites	None	None	None
This product is intended to be applied with a hand or power duster to hiding and runway areas and those places where pests are found. Apply to voids or channels in damaged wooden members of a structure or to cracks, spaces or bearing joints between such members and the foundation.				
Ficam Plus Insecticide (Wettable/soluble powder)		Bendiocarb + Pyrethrins - 29.45 +3.06%		
Structures	Drywood termites	Do not contact until dry	None	None
Apply to voids and channels in damaged wood. Do not apply to humans, their clothing or bedding. Avoid breathing and working in spray mist or dust. With proper spraying, this product does not produce a visible deposit. However, if unevenly applied, or sprayed to run-off, a visible deposit may occur on some dark surfaces. Do not apply in conduits, motor housings, junction boxes, and switch boxes or ther electrical equipment because of possible shock hazard. Do not contaminate fruit, vegetables, or other feed or food crops.				
Food Areas of Food Handling Establishments	Drywood termites	Do not contact until dry	None	None
Application is limited to spot or crack and crevice treatment only. Apply to voids and channels in damaged wood. Do not apply to humans, their clothing or bedding. Avoid breathing and working in spray mist or dust. With proper spraying, this product does not produce a visible deposit. However, if unevenly applied, or sprayed to run-off, a visible deposit may occur on some dark surfaces. Do not apply in conduits, motor housings, junction boxes, and switch boxes or ther electrical equipment because of possible shock hazard. Do not contaminate fruit, vegetables, or other feed or food crops.				
USDA Inspected Facilities	Drywood termites	Do not contact until dry	None	None
This product is authorized for use in non-food areas of Federally inspected Meat and Poultry Plants. Apply to voids and channels in damaged wood. Do not apply to humans, their clothing or bedding. Avoid breathing and working in spray mist or dust. With proper spraying, this product does not produce a visible deposit. However, if unevenly applied, or sprayed to run-off, a visible deposit may occur on some dark surfaces. Do not apply in conduits, motor housings, junction boxes, and switch boxes or ther electrical equipment because of possible shock hazard. Do not contaminate fruit, vegetables, or other feed or food crops.				
FirstLine GT Termite Bait Station (Bait)		Sulfluramid - 0.01%		
Soil/Wood Treatment	Drywood termites	None	None	None

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
For residential structures, use between 3 and 14 stations per unit. For use in and around commercial, industrial, and institutional structures (except schools and daycare centers) use as many stations as needed. Insert stations into soil, mulch, stumps, wood members, slabs, infested trees, or wherever practical. This product is not registered for use in commercial food/feed areas. Not for use in USDA Meat and Poultry Plants.				
Utility Poles/Fence Posts, Wood/Wood Products/Lumber (structural), Wood Surfaces	Drywood termites	None	None	None
For residential structures, use between 3 and 14 stations per unit. For use in and around commercial, industrial, and institutional structures (except schools and daycare centers) use as many stations as needed. Insert stations into soil, mulch, stumps, wood members, slabs, infested trees, or wherever practical. This product is not registered for use in commercial food/feed areas. Not for use in USDA Meat and Poultry Plants.				
Flee Insecticide (Emulsifiable concentrate)		Permethrin - 36.8%		
Wood Impregnation/Wood Injection	Drywood termites	Do not contact until dry	None	None
Application can be made to inaccessible areas by drilling and then injecting emulsion with a crack and crevice injector into the damaged wood or void spaces. Termite carton nests in trees or building voids may be injected.				
Wood Surfaces	Drywood termites	None	None	None
Apply to voids and galleries in damaged wood and in spaces between wooden members of a structure and between wood and foundations where wood is vulnerable. This product is labeled for broadcast treatment of wood for control of wood-infesting insects.				
Kicker (Emulsifiable concentrate)		Pyrethrins + PBO - 6 + 60%		
Structures	Drywood termites	Do not contact until dry	None	None
This product is an EC used as a tank -mix to increase flushing and knockdown of pests and improve control of resistant insects. Can be used with residual insecticides. This product may also be used as a space spray or undiluted ULV treatment. The insecticidal components of this product are classified as food additives and established tolerances will not be exceeded when used as directed. For residual control thoroughly spray surfaces where insects are usually found. This product may be used as a space spray to control crawling and flying insects.				
Food Areas of Food Handling Establishments	Drywood termites	Do not contact until dry	None	None
This product is an EC used as a tank -mix to increase flushing and knockdown of pests and improve control of resistant insects. Can be used with residual insecticides. This product may also be used as a space spray or undiluted ULV treatment. The insecticidal components of this product are classified as food additives and established tolerances will not be exceeded when used as directed. For residual control thoroughly spray surfaces where insects are usually found. This product may be used as a space spray to control crawling and flying insects. This product may be applied as a general surface, space, spot or crack and crevice treatment in both food and non-food areas of food handling establishments. When used as a space spray, vacate the treated area and keep the area closed for at least 30 minutes after treatment. Ventilate the area before reoccupying. Repeat treatment as necessary.				

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
USDA Inspected Facilities	Drywood termites	Do not contact until dry	None	None
This product is an EC used as a tank -mix to increase flushing and knockdown of pests and improve control of resistant insects. Can be used with residual insecticides. This product may also be used as a space spray or undiluted ULV treatment. The insecticidal components of this product are classified as food additives and established tolerances will not be exceeded when used as directed. For residual control thoroughly spray surfaces where insects are usually found. This product may be used as a space spray to control crawling and flying insects. The use of this product as a space spray must be confined to time periods when the plant is not in operation.				
Optem Cyfluthrin CS (Prescription Treatment) (Microcapsulated suspension)		Cyfluthrin - 6.0%		
Structures	Drywood termites	Do not contact until dry	None	None
Localized treatment. Locate suspected infestation. Drill holes into insect tunnels, galleries and inaccessible closed voids. Inject 5-10 seconds per hole.				
Food Processing (non-food/feed areas)	Drywood termites	Do not contact until dry	None	None
Localized treatment. Locate suspected infestation. Drill holes into insect tunnels, galleries and inaccessible closed voids. Inject 5-10 seconds per hole. Not for use in USDA meat and poultry plants.				
Prelude (Emulsifiable concentrate)		Permethrin - 25.6%		
Wood/Wood Products/Lumber (structural)	Drywood termites	Do not contact until dry	None	None
For soil or wood treatment to control termites and wood boring beetles.				
Tri-die Pressurized Silica + Pyrethrin Dust (Aerosol)		Pyrethrins + Piperonyl Butoxide + Amorphous Silica Dioxide - 0.6 + 4.8 + 8.0%		
Structures	Drywood termites	None	None	None
Spot treat for localized infestation. Drill holes into galleries and inject product. Use with the supplied actuator and tubes to inject product where insects may be harboring, living and breeding.				
Food Areas of Food Handling Establishments	Drywood termites	None	None	None
Spot treat for localized infestation. Drill holes into galleries and inject product. Application of this product in the food areas of food-handling establishments other than as a crack and crevice treatment are not permitted. Use with the supplied actuator and tubes to inject product where insects may be harboring, living and breeding.				
Vikane (Fumigant)		Sulfuryl Fluoride - 99.8%		
Structures	Drywood termites	None	None	None

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
<p>For use in dwellings (including mobile homes), buildings, construction materials, furnishings, and vehicles including automobiles, buses, surface ships, rail cars, and recreational vehicles (but not including aircraft). When fumigating, observe local, state and federal rules and regulations including such things as use of chloropicrin, clearing devices, positive pressure self-contained breathing apparatus, security requirements, and placement of warning signs. Remove all edible items from the structure before fumigation if they cannot be adequately sealed to prevent exposure to treatment. Do not re-enter treated areas for 8 hours after aeration by ventilation with fans or detection of <5 ppm with an Interscan or Miran detector.</p>				
Wood/Wood Products/Lumber (structural)	Drywood termites	None	None	None
<p>For use in dwellings (including mobile homes), buildings, construction materials, furnishings, and vehicles including automobiles, buses, surface ships, rail cars, and recreational vehicles (but not including aircraft).When fumigating, observe local stae, and federal rules and regulations including such things as use of chloropicrin, clearing devices, positive pressure self-contained breathing apparatus, security requirements and placement of warning signs.Do not re-enter treated areas until aerated and ventilated with fans for at least 8 hours or Interscan or Miran detector has a reading of <5 ppm.</p>				