



Indoor / Outdoor Ant Protocol



Understanding Ant Habits and Life Cycle

- There are more than 16,000 identified species and subspecies of ants world-wide, but only a few dozen are considered pests in the United States.
- Ants often enter homes during extreme hot or cold weather in search of food, water and/or shelter.
- All ants are social; the reproductive caste (queen or queens) lays eggs while the worker caste performs all other duties, including providing food for the reproductive caste and caring for the young.
- All worker ants are female; some species can produce queens from existing brood.

Common Pest Ants in the United States

- | | |
|----------------------|--------------------------|
| • Argentine Ants | • Pavement Ants |
| • Black Crazy Ants | • Pharaoh Ants |
| • Carpenter Ants | • Red Imported Fire Ants |
| • Ghost Ants | • Rover Ants |
| • Little Black Ants | • Tawny Crazy Ants |
| • Odorous House Ants | |

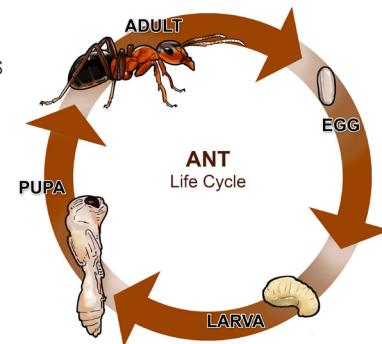
SEE IDENTIFYING CHARACTERISTICS ON PAGES 3-4.

Inspection

- **Correct identification is the most important step in achieving rapid, lasting control.** Even though all ants are social, their behaviors, food preferences and colony structures can vary drastically.
- **Identify nest locations.** Different species are found nesting in different areas, but some key features to look out for are:
 - On the exterior, bark mulch, weed cloth, river rock, areas around drip irrigation lines and sprinklers, bases of trees or within trees, rotting or damaged wood, soil near citrus, crepe myrtle, hibiscus, oleander, and other plants with large aphid/whitefly/scale insect populations. Refer to key outdoor structural hot spots on page 5.
 - On the interior, voids near kitchen and bathroom sinks, under or inside dishwashers, washing machines, around bathtubs, potted plants or any other interior sources of moisture. Refer to key indoor structural hot spots on page 5.

Ant Life Cycle

- Complete metamorphosis in four stages: egg, larva, pupa and adult.



Customer Communication

Setting appropriate expectations and communicating the importance of customer collaboration increases the likelihood of success. Be sure to communicate what to expect before and after the treatment and any conducive conditions that require remediation. Best results are seen when the technician and the customer work together. Below are some key things to communicate to the customer:

- For indoor control specifically, stress the importance of sanitation to your customers. Any type of food or food particles can attract ants. Store food in sealed containers.
- Discuss the removal of plants that can attract ants; or control aphids, whiteflies and other honeydew-producing insects on plants in and around structures.
- Remove any materials or vegetation that is serving as a nesting site to ants, such as piles of old lumber, firewood, railroad ties and other debris. Trim trees and other landscape features that serve as routes ants can use to enter buildings and homes.
- Make sure you inform the customer that depending on environmental conditions, it is normal to see foraging ants for a few days following a treatment. Communicating this before and after treatment is essential to minimize callbacks.



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Pre-Treatment

- Use your inspection results to determine your treatment plan. Treatment should be based on nest location.
- Before performing an exterior treatment:
 - Explain that treatments can be affected by excessive moisture and recommend sprinklers stay turned off until product is dry. For best results, schedule treatments when rain is not expected.
 - Remove all pet belongings, toys and other items from the yard. Some items can be put in plastic bags.
- When performing interior treatments, do not allow product to contact food or food-containing surfaces, feed or water supplies. Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated.
- Make sure the customer understands that all people and pets should remain out of areas (indoors and outdoors) being treated until all surfaces are dry.
- When large areas need to be treated, be sure you have enough material to treat the entire infested area.
- Ensure all equipment is clean and in good working condition to avoid product contamination that could negatively impact results.
- Always read and follow label instructions and make sure you have all of the required PPE prior to treatment.

Treatment / Liquid Applications

- **Treatment for ants that are trailing or nesting on the interior of structures:** Apply Sumari® Insecticide as a spot or crack and crevice application at a dilution rate of 1 oz. per gallon of water. For carpenter ants, apply at a dilution rate of 2 oz. per gallon of water. Key areas include around base boards, doors, window frames, under sinks, around pipes and attic venting.
 - Apply an ant gel bait in discreet areas such as underneath sinks and cabinets, dishwashers, toilets and potted plants.
 - Refer to key indoor structural hot spots on page 5.
- **Treatment for ants that are trailing or nesting on the exterior of structures:** Apply Sumari® Insecticide at a dilution rate of 1 fl. oz. per gallon of water around the perimeter of the structure, including entryways, doors and windows, utility entry points, behind siding, weep holes, eaves, around lights and garbage cans. For carpenter ants and fire ants, apply at a dilution rate of 2 fl. oz. per gallon of water.
 - Away from structures, make broadcast, spot and/or crack and crevice applications anywhere ants are found trailing.
 - Curative or proactive broadcast treatments can be made to yards, lawns, fields, parks, cemeteries and landscaping.
 - Apply an ant gel bait anywhere ants are found foraging. Using a liquid concentrate and gel bait together will provide more thorough control.
 - Refer to key outdoor structural hot spots on page 5.

- **Treatment for ants found only on the exterior:** Use Sumari® Insecticide as a proactive broadcast treatment, spot and/or crack and crevice applications anywhere nests or foraging ants are found. Apply at a dilution rate of 1 oz. per gallon of water directly to nests or around trees where ants are nesting. For carpenter ants and fire ants, apply at a dilution rate of 2 oz. per gallon of water.

Dilution Chart

Use the mixing chart below to achieve desired final volume for ant applications indoor and outdoor:

WATER VOLUME	FLUID OUNCES OF SUMARI® INSECTICIDE TO DILUTE IN WATER (Equivalent To 1 Fl. Oz. Per Gallon)	FLUID OUNCES OF SUMARI® INSECTICIDE TO DILUTE IN WATER (Equivalent To 2 Fl. Oz. Per Gallon)
16 oz. (1 Pint)	1/8 fl. oz.	1/4 fl. oz.
32 oz. (1 Quart)	1/4 fl. oz.	1/2 fl. oz.
64 oz. (1/2 Gallon)	1/2 fl. oz.	1 fl. oz.
96 oz. (3/4 Gallon)	3/4 fl. oz.	1 1/2 fl. oz.
128 oz. (1 Gallon)	1 fl. oz.	2 fl. oz.

Treatment / Baiting Applications

- **Treatment for ants that are nesting on the interior of structures (interior bait treatment only):** Apply baits in spots 1/8 inch in diameter or in lines 1/8 inch by 3 inches in length near ant trails. Apply Sumari® Ant Gel Bait in discreet areas such as underneath sinks and cabinets, dishwashers, toilets and potted plants or anywhere you see ants trailing.
- **Treatment for ants nesting on the exterior of structures:**
 - Bait placement on the interior of the structure should be avoided unless the nest is located on the interior.
 - To bait outdoors, apply Sumari® Ant Gel Bait in spots 1/8 inch in diameter or in lines 1/8 inch by 3 inches in length anywhere you see ants trailing. Common areas include the base of trees, visual trails, weep holes and other entry points around the structure.



Post-Treatment

- Re-inspect if ant activity has not ceased after 3-5 days. Make note of any continued activity or foraging, even if ants aren't found on the interior of a structure. Re-treat any areas with such activity to reduce the likelihood of re-infestation.



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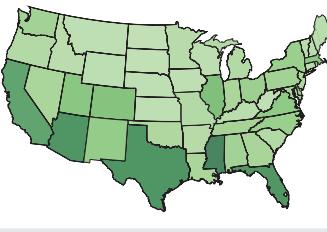
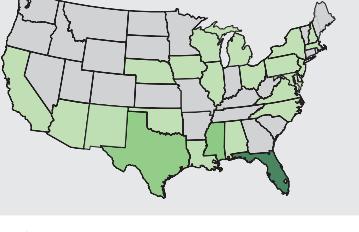
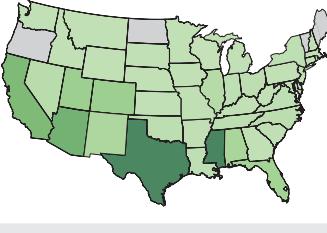
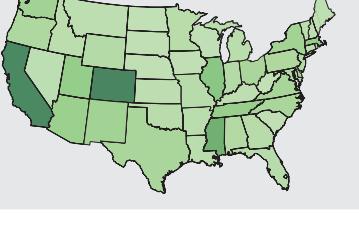
Identifying Ants

Characteristics of common domestic ant species.

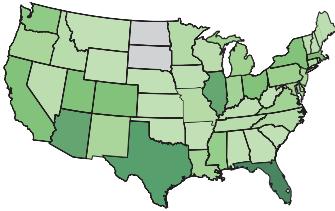
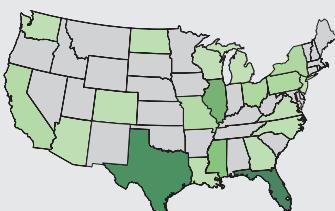
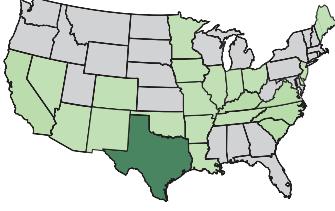
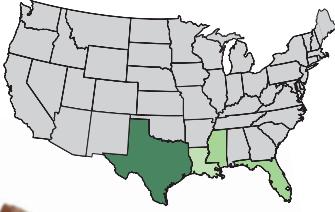
RANGE KEY:



Data Sources: iNaturalist & iDigiBio

ANT SPECIES	CHARACTERISTICS	DISTRIBUTION AND NESTING HABITS	RANGE
ARGENTINE ANT <i>Linepithema humile</i>  SIZE: 1/8-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/8" long • One node • 12-segmented antennae, with no club • Workers are light to dark brown • Emits a musty odor when crushed 	<ul style="list-style-type: none"> • An invasive species from South America that has established itself throughout the coastal and southern United States • Particularly abundant in California • Forage indoors in search of food and water, but seldom establish colonies inside of homes or buildings 	
BLACK CRAZY ANT <i>Paratrechina longicornis</i>  SIZE: 1/8-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/8" long • One node • 12-segmented antennae, with no club • The body has long, coarse, scattered, grayish or whitish hair-like projections • Workers are black • Extraordinarily long antennae 	<ul style="list-style-type: none"> • Black crazy ants are possibly the most broadly distributed ant species globally • Nest both indoors and outdoors • They have high moisture requirements and will often trail indoors in search of water • Erratic and rapid movement, and habit of not following dedicated trails 	
CARPENTER ANT <i>Carpenterus spp.</i>  SIZE: 1/4 TO 1/2-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/4" to 1/2" long • One node • 12-segmented antennae, with no club • The thorax is evenly rounded • Workers vary in color, but are often black or bi-colored red and black 	<ul style="list-style-type: none"> • Found throughout the United States • Typically, the nests they construct indoors are satellites of a larger, parent nest located outside; several satellite nests can be associated with a single parent nest 	
HOST ANT <i>Tapinoma melanocephalum</i>  SIZE: 1/16-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/16" long • One node, flattened and hidden from view • 12-segmented antennae, with no club • Workers have a dark head and thorax with translucent abdomen and legs 	<ul style="list-style-type: none"> • One of the most broadly distributed ant species globally • It is well established in Florida and Hawaii, and its range is expanding into Texas • It is highly adaptable in its nesting habits; it nests readily outdoors or indoors 	
LITTLE BLACK ANT <i>Monomorium minimum</i>  SIZE: 1/16-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/16" long • Two nodes • 12-segmented antennae, with 3-segmented club • Workers are shiny black to brownish black 	<ul style="list-style-type: none"> • Native to North America, it is found in northern and eastern sections of the United States and southward to the Pacific Coast • It is common in the southern half of California and in the San Francisco Bay area • Nests are located in soil, rotten wood, woodwork or masonry of houses and are an occasional house invader 	
ODOROUS HOUSE ANT <i>Tapinoma sessile</i>  SIZE: 1/8-INCH IN LENGTH	<ul style="list-style-type: none"> • 1/8" long • One node, flattened and hidden from view • 12-segmented antennae, with no club • Workers are black to brownish black • When crushed, emit an odor described as rotten coconut or blue cheese 	<ul style="list-style-type: none"> • Native to North America, one of the most widespread ant species • Nest indoors and outdoors (potentially numerous satellite nests) 	

Characteristics of common domestic ant species.

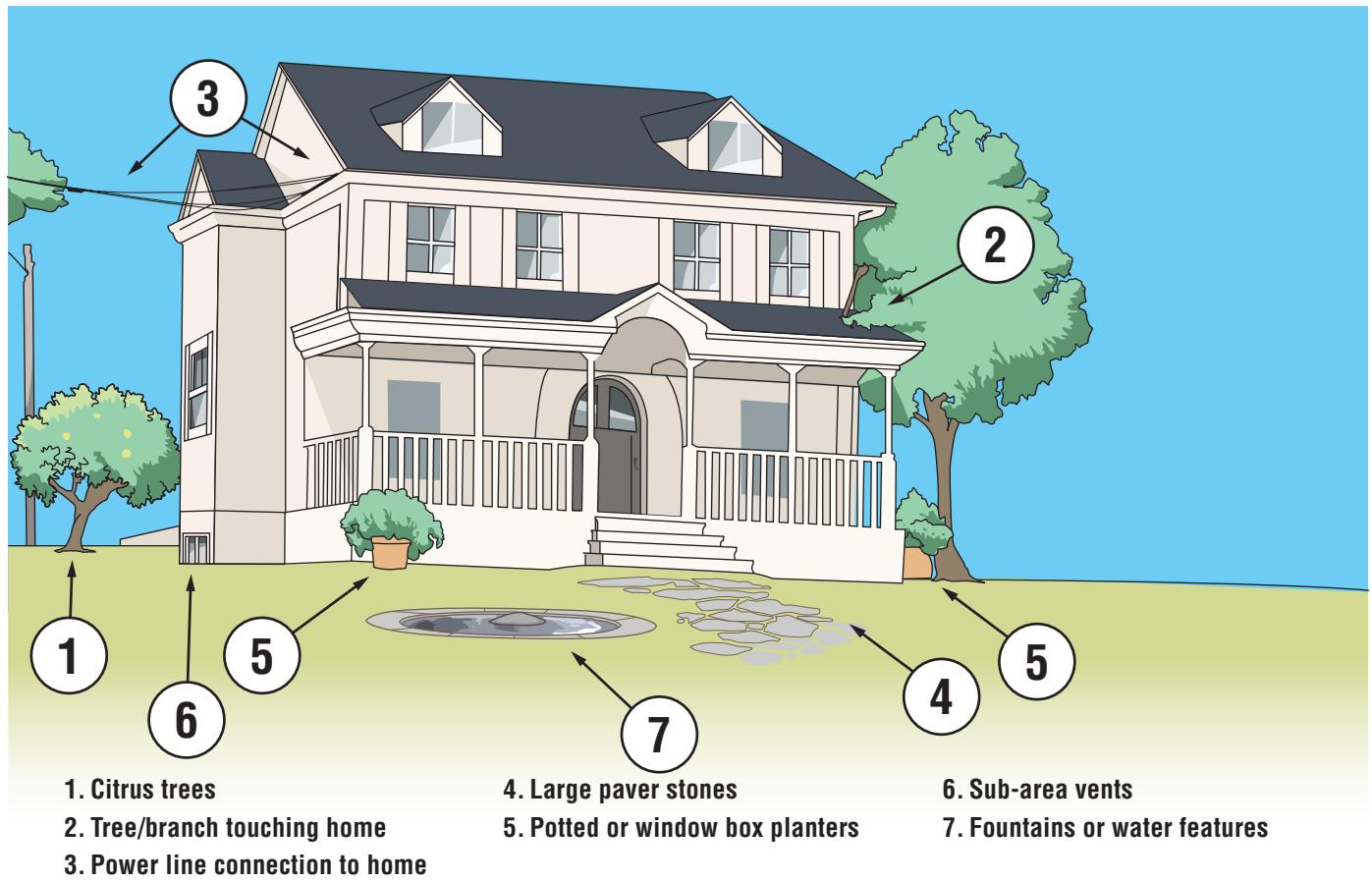
ANT SPECIES	CHARACTERISTICS	DISTRIBUTION AND NESTING HABITS	RANGE
PAVEMENT ANT <i>Tetramorium spp.</i> 	<ul style="list-style-type: none"> • 1/8" long • Two nodes • 12-segmented antennae, with 3-segmented club • Pronotum has a pair of spines • Workers are dark brown to black • Head and thorax are sculpted with numerous parallel grooves 	<ul style="list-style-type: none"> • One of the most encountered ants in the United States • First introduced from Europe and has become well established in urban areas in the northern United States and parts of Canada • A common indoor pest in the eastern United States and outdoor pest in the western United States 	
PHARAOH ANT <i>Monomorium pharaonis</i> 	<ul style="list-style-type: none"> • 1/16" long • Two nodes • 12-segmented antennae, with 3 segmented club • Workers are yellowish light brown to reddish • The tip of the abdomen is darkened 	<ul style="list-style-type: none"> • Found throughout the United States, they are renowned for their ability to nest in almost any available small cavity once inside structures • They are rarely found outdoors except in the most humid environments; disturbed nests will "bud," a behavior which sees a group of queens, workers and brood split off and form a satellite colony elsewhere in the structure 	
RED IMPORTED FIRE ANT <i>Solenopsis invicta</i> 	<ul style="list-style-type: none"> • 1/8" to 1/4" long • Two nodes • 10-segmented antennae, with 2-segmented club • Mandible has four distinct teeth • Workers have a reddish head and thorax with a brown/black abdomen 	<ul style="list-style-type: none"> • Native to South America • Found in Puerto Rico, and southern and western states from Maryland to southern California • Nest in soil and rarely found indoors; build distinctive dome-shaped mounds 	
ROVER ANT <i>Brachymyrmex spp.</i> 	<ul style="list-style-type: none"> • 1/16" long • One node, flattened and angled up at the thorax • 9-segmented antennae, with no club • Workers are dark brown to black • Antennae, tarsi, and mandibles may appear paler 	<ul style="list-style-type: none"> • An invasive species from Argentina and Paraguay that is established in the Gulf States and in some urban areas of Arizona and Nevada • Nests are formed in soil in both natural and disturbed areas; nests are also formed within man-made structures 	
TAWNY CRAZY ANT <i>Nylanderia fulva</i> 	<ul style="list-style-type: none"> • 1/8" long • One node • 12-segmented antennae, with no club and a long scape • Workers are reddish brown • The thorax and abdomen are smooth and shiny 	<ul style="list-style-type: none"> • Native to Brazil • Extremely problematic pest ant among states that border the Gulf of Mexico, particularly Florida and Texas • Colonies contain many queens, nesting sites and may number in the millions to tens of millions 	



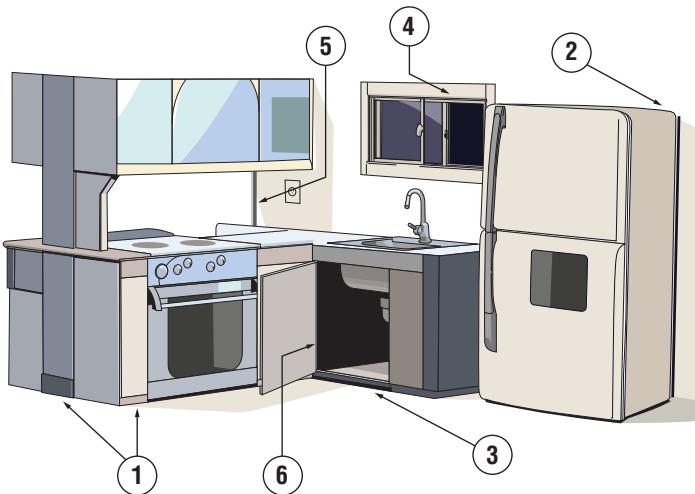
STRUCTURAL HOT SPOTS



Key Structural Hot Spots: Outdoor Residential



Key Structural Hot Spots: Indoor Residential



- 1. Baseboards
- 2. Behind Refrigerators
- 3. Under Cabinets
- 4. Entry Points (Windows, Doors)
- 5. Wall Voids
- 6. Under Kitchen Sinks



Indoor / Outdoor Ant Protocol

Featured Product Solutions



Sumari® Insecticide

- Kills and controls ants, including multi-queen species, for up to three months
- Contains NyGuard® IGR insect growth regulator
- Dual modes of action
- For indoor and outdoor use, including outdoor broadcast
- No signal word
- Apply as an outdoor broadcast treatment up to four times per year at the low rate
- Convenient all-in-one product



Sumari® Ant Gel Bait

- Kills ants (excluding fire ants and carpenter ants)
- Easy to use
- Effective for up to 90 days (excluding fire, harvester, carpenter & pharaoh ants)



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