

Beyond Picnics

Controlling ants in your home

By Becky Crouse

Your picnic basket has not seen the light of day in years, that red-checked tablecloth is clean and stowed in the linen closet, and you haven't so much as cracked a window to let in that stifling summer air. Why then are there ants in your food, on your floor, in your cupboards, on your counters and everywhere else you dare look? Why, it's worse than that killer bee movie. It's an infestation! Something must be done to stop them, and quickly!

OK, focus, because I'm going to help. Don't call the local, poison-squirting bug buster to solve your ant problem. Conventional insecticides, aside from their health hazards, can also cause a single ant colony to break up into many smaller colonies, creating an even bigger problem. There are, however, several do-it-yourself, least-toxic ways to get rid of ants and eat in peace. As you plan your attack, remember that ants aerate soil, recycle dead animal and vegetable matter, and prey on other insect pests. They are good for the environment (well, the outdoor environment), so control yourself.

Identifying your intruders.

There are thousands of ant species that could be nibbling on your candy bar or peanut butter at this very moment. Pharaoh ants most commonly build nests indoors. They are small, reddish-brown ants that persist through the winter months, and enjoy sweets, but are omnivorous, and will eat just about anything. See the ant identification box to find other common house-invading ants. Identification is key for your management strategy; if you have any questions about the type of ant in your house, call your local cooperative extension office for help with identification.

Control measures.

Any pest control program must include cultural control methods. You can spray the dickens out of the pest with the most toxic chemical you can find, but as long as you provide an environment that your pest finds attractive and a way for it to get in, it will return.

1. **Locate and seal outside points of entry.** Ants usually follow distinct chemical trails that they have left to easily find their way from their point of entry to their food source. Follow the ant trail, identify the points of entry into your home, and seal them out. If you don't have a clear ant trail, place small pieces of cardboard or wax paper with syrup or a high-protein treat (depending on your ant type) out at night. In the morning, there should be a nice, thick ant trail leading to their doorway(s) into your home, and now you can seal them out. Temporary fixes include drawing a solid line with regular chalkboard chalk or putting down lines of cayenne and black



pepper as repellants, or sealing entry points with duct tape, toothpaste or petroleum jelly. Silicone caulk is an excellent permanent sealant.

2. **Locate and remove the food supply.** Clean up and remove the food that is attracting the buggers. Keep kitchen counters, stove tops and floors clean. Store food in glass jars with seals or gaskets and plastic containers with tight-fitting lids. Ants can climb up the threads of screw-top jars and get in if there is no gasket or liner. Place pet food in moats – something as simple as a pie tin filled with plain soapy water with the food bowl placed in the middle can be effective in preventing ant access, but be sure your pet won't drink the soapy water. Put garbage in tightly sealed containers and empty it daily, and thoroughly rinse recyclables. Ants also feed on "honeydew," a sweet substance produced by insects that feed on plant sap, such as aphids and scale. Controlling these insects and cutting branches back from your house may help control your ant problem.
3. **Use soap!** Soapy water, either in a spray bottle or on a sponge, will kill individual ants and erase the chemical trail that the line of ants follows. It also can be used to drench outside nests, killing some ants and forcing the others to relocate.
4. **Flood 'em.** Drive ants out of flowerpots and outdoor nests by flooding them repeatedly.
5. **Try sticky barriers.** They're not pretty, but ants won't cross them. Apply one of the various, commercially available sticky barriers to foundation walls or the legs of tables or plant stands where ant problems are brewing.
6. **Lure them away.** Use a food attractant placed in a dirt-filled, clay flowerpot to lure the ants away from your house; once they've moved in, kill them with boiling hot water. Rather barbaric sounding, but effective all the same.

Least-toxic controls.

The following alternatives are safer than many pesticides, but are not risk free and should be used only when absolutely necessary. Remember, even if you choose to use a chemical, it must be used in combination with cultural controls to permanently eliminate your pests!

Desiccating Dusts. Desiccating dusts, such as diatomaceous earth and pure amorphous silica aerogel, kill ants by causing the insect to lose moisture and die. Diatomaceous earth must be garden/food grade, not the glassified diatomaceous earth used in pool filters, which can cause the lung disease silicosis.

Ant Identification: Common House Invaders

Name	Description	Foraging Behavior	U.S. Distribution Bites/Stings
<i>Acrobat</i>	light brown to black, larger than average (2.5-4 mm), nest outside in soil and wood, inside in foam, single queen	sweets and honeydew, can raise heart-shaped abdomen over head, new colonies by mating flights	native TN, AR, throughout US, sting and bite
<i>Argentine</i>	light to dark brown, average size (2.2-2.8 mm), nests outside in ground under boards, stones and concrete, multiple queens	prefers sweets and honeydew from insects, but omnivorous, forage in lines	seen mainly WA, OR, CA, MD, west to IL, TX, AZ, Mexico, HI, S. Amer., Eur, S. Africa, Australia
<i>Crazy</i>	dark brown to black, average size (2.2-3 mm), nests outside in soil, inside in potted plants and wall voids, multiple queens	sweets, kitchen scraps, follows no trail	mainly in AZ and Gulf states, no sting
<i>Ghost</i>	white gaster and legs, black head and thorax, tiny (1.5 mm), nests inside in containers, behind baseboards, outside in soil, multiple queens	sweets and grease, trails hard to see	tropic ant, number one household ant in Southern Florida, seen in HI and CA
<i>Little black</i>	black, tiny (1.5-2 mm), nests outside in soil, inside in wall voids and cabinets, multiple queens	sweets, grease, omnivorous, forages in trails	Northeast, Midwest, TN to TX
<i>Odorous house</i>	brown to black, 2.4-3.2 mm, foragers, nests outside or in wall voids, pungent "rotten coconut" odor when crushed, single queens	prefers sweets and honeydew, but omnivorous, forage in lines	native to US, wide distribution, no sting
<i>Pharaoh</i>	reddish brown, tiny (1.5-2mm), nest inside or in any secluded spot, multiple queens	sweets and omnivorous, found in packages, get under bandages	throughout US
<i>Thief</i>	yellow to dark brown, tiny (1.8-1.8 mm), nests inside walls and kitchen cabinets, outside with other ants	prefers meat and cheese, eats sweets, forage in trails, confused with pharaoh ants	throughout US

SOURCES: Olkowski, Helga, Daar, Shiela, and Olkowski, William, *Common -Sense Pest Control*, Newtown: The Taunton Press, Inc., 1991.

Place the dust in wall voids or cracks and then seal them, or sprinkle powder lightly around the edges of carpeted areas or brush it into the carpet, wait three days, and then vacuum. In cracks, the dusts can be effective for many years, as long as they are kept dry. Once-a-year applications to carpets should suffice. When using either desiccating or boric acid dust, always wear a dust mask and goggles and cover any electronic equipment that could suffer dust damage. Do not use diatomaceous earth if you have lung problems. For a quick fix, sprinkle corn meal around the outside of your home. It will make the ants thirsty, they will go for water, swell up and explode.

Boric Acid. Boric acid can be used as a dust or bait. As a dust, use it as you would the other desiccating dusts — in wall voids and cracks, and in carpets. It should not be placed or used anywhere that children or pets can access. As bait, boric acid is very effective. Foraging ants eat the bait, go back to the nest, regurgitate, share the food, and wipe out the colony. You can buy commercially made baits, such as Drax™, or make your own by mixing one teaspoon of 99% pure boric acid into one-third cup of mint-apple jelly. Place small dabs of bait in areas where you

have seen ant activity and along established ant trails, but do not block the trails. Put out one to three dabs per 25 square feet, checking the baits every 1-3 days, and replacing any that have been eaten or adding a few drops of water to those that have dried out. If you have children or pets that may get into the baits, mix three cups of water with one cup of sugar and four teaspoons of 99% pure boric acid. Wrap three of four jam-sized jars with masking tape, loosely pack them with absorbent cotton and put half a cup of bait into each of the jars. Screw the lids on tightly, pierce them two or three times, and smear the outside of the jars with some of the baited syrup. The ants will eventually swarm to the jars, but don't kill them. They are your distributors and will carry the poison back to the nest. It may take time for you to see the results, but it will work.

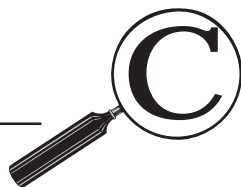
Ants are annoying. Although you want them out of your house, and the thought of making them explode, having them unwittingly regurgitate poison for each other or luring them into your traps of doom has you rubbing your hands together with maniacal glee, they are also beneficial organisms. By all means, save your chocolate bars and potato chips (a person does need to have priorities), but don't get crazy, please.

Olkowski, Helga, Daar, Shiela, and Olkowski, William, *Common -Sense Pest Control*, Newtown: The Taunton Press, Inc., 1991.

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BORIC ACID

Boric acid is a low-toxicity, non-volatile mineral with insecticidal, fungicidal, and herbicidal properties. It has long been embraced as a safer alternative to highly volatile, synthetic chemical pesticides. Boric acid is especially effective when used as part of an ongoing integrated pest management (IPM) program that incorporates sanitation, cultural, mechanical, and biological practices.(3)

Boric acid and its sodium salts, all boron-related compounds, is generally associated with seven active ingredients — boric acid, sodium tetraborate decahydrate (borax decahydrate), sodium tetraborate pentahydrate (borax pentahydrate), sodium tetraborate (anhydrous borax), disodium octaborate tetrahydrate, disodium octaborate (anhydrous), and sodium metaborate. No registered pesticide products contact boric oxide as an active ingredient.(6)

Boric acid was originally registered as a pesticide in the U.S. in 1948. There are currently 189 registered pesticide products on the market containing boric acid or one of its sodium salts as an active ingredient.(5)

While exposure to boric acid has been linked to adverse health effects, experts agree that careful application offers a less hazardous, more effective alternative to many pesticides, without the indoor air problems commonly associated with residential pesticide use

Use and Mode of Action

Boric acid and its salts, borates, have been used in medicine as a bactericide, a fungicide, and an antiseptic since the 1860s.(3) It is used as a wettable powder, liquid (applied as a spray or aerosol), emulsifiable concentrate, granules, powders, dusts, pellets, tablets, paste, bait or crystalline rods, depending upon the circumstances and target pest.(6)

As an insecticide, boric acid acts as a “stomach poison” for ants, cockroaches, silverfish and termites, and is most commonly used in a bait formulation containing a feeding

attractant or as a dry powder. The powder can be injected into cracks and crevices, where it forms a fine layer of dust. Insects travel through the powder, which adheres to their legs. When the insects groom themselves, they ingest the poison, which causes death due to starvation and dehydration 3-10 days later. Boric acid can also abrade the exoskeletons of insects.(5) As long as the material is not allowed to become wet, its continuous presence ensures that hatching insects, which pesticide sprays commonly spare, are exposed and die as well. Many insecticidal formulations contain a desiccant to protect the boric acid from airborne moisture.

These formulations can be effective for more than a year.(3)

When used as an herbicide, boric acid desiccates and/or interrupts photosynthesis in plants, or suppresses algae in swimming pools and sewage systems. As a fungicide, boric acid can be used as a wood preservative that controls decay-producing fungi in lumber and timber products.(5)

In agriculture, boric acid is used as an insecticide, herbicide and fungicide in food crops and orchards (6), and borates have also been utilized as a nutritional supplement for boron-loving crops, such as sugar beets and cabbage.(4)

Boric Acid Toxicity

Boric acid occurs naturally in water, fruits, vegetables and forage crops. It is an essential

nutrient for plants and an essential element for many organisms.(5) The acute toxicity of boric acid in rats is less than that of table salt.(2) It is generally of moderate acute toxicity, and has been placed in Toxicity Category III by the EPA for most acute effects, including oral and dermal toxicity, and eye and skin irritation.(5) Sodium tetraborate (anhydrous borax) products are categorized as Toxicity Category I because of high acute toxicity for eye irritation effects.

There are few allergic responses from skin applications of boric acid. Absorption through skin is negligible unless the skin is broken or burned. Respiratory irritation can occur from chronic inhalation of airborne boric acid or borates. Workers

