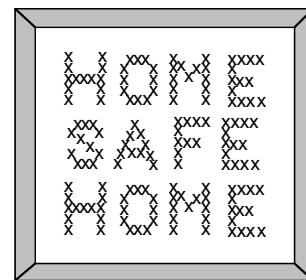


Alternatives

A Washington Toxics Coalition Fact Sheet



Spiders, Ants, Flies, and Cockroaches: Four Common Household Invaders

by Philip Dickey

Except for rats, these four creatures probably generate more fear, loathing, and disgust than any others found in the home. For roaches particularly these reactions are justified, since they do transmit disease and trigger allergies and asthma. Ants and flies, too, can contaminate food.

Our tolerance for creatures with six or more legs in our homes is very low, and because of the strong emotions they stir in us, we are apt to reach automatically for the aerosol bug spray. After all, it's easy, you don't have to get very close to the bugs, and you have the satisfaction of seeing them die. But wait! Pesticides used indoors will deposit on surfaces such as kitchen counters, children's toys, and rugs where children play. Children can ingest the pesticide over time through hand-to-mouth contact. And since spraying doesn't address the cause of the problem, the pests often will come back.

What can you do? This chapter outlines the best preventative strategies and least-toxic control methods available.

Spiders

Spiders probably frighten people more than any other household critter. Their appearance and movements can cause the most composed and rational people to scream or flee. The hysteria spiders induce is unwarranted in most instances. Few species are actually dangerous to humans, and most will scurry away when a human comes near. Spiders are beneficial predators which consume many destructive insects, mites, and other pests. Unlike insects, spiders have eight legs and bodies divided into only two parts.

Most people will not be convinced to tolerate spiders in the home just because they eat flies. I hope to persuade you, however, to remove spiders without killing them whenever possible. If you must kill them, it is easily done without chemicals. Before discussing control in detail, let's look at some of the types of spiders common in Washington.

Identification

The majority of harmless spiders includes garden spiders, which spin large circular webs outdoors, and cobweb spiders, often seen hanging upside down in corners of rooms. The benefits that we realize from spiders' preying on insects far outweigh the low potential health hazard. The only spiders common in Washington that pose any threat to humans are the black widow spiders and the funnel web spiders.

Black widow spiders are fairly common east of the Cascades. The adult female, which is the most dangerous, is usually identified by the famous reddish hourglass-shaped marking on the underside. It is about 1-1/2 inches in diameter with legs spread. Generally speaking, these are shy, retiring spiders which bite only reluctantly. Females may be more aggressive when protecting an egg sac. They may be found in woodpiles, dry crawl spaces, abandoned buildings, rockpiles, or bales of hay. When working in such areas, it is wise to look where you place your hands and to wear gloves and a long-sleeved shirt. Widow spider bites are particularly dangerous to children, the elderly, and sick persons. Bites should be treated by a physician.

The other dangerous spider is the aggressive house spider (or hobo spider), one of the funnel web spiders, which has become established across most of the Pacific Northwest.



The spiders that spin large circular webs outdoors are harmless garden spiders.



Black widow spiders are fairly common east of the Cascades. They are rare on the west side of the mountains unless transported with belongings or freight.

These spiders make a sheet web with a funnel-tube at one end, usually in damp protected spaces such as corners of basements. They wait inside the tube and dash out to bite any prey that becomes entangled in the web. These are large spiders, ranging up to 1-3/4 inches in diameter. They prowl basement or ground floor living spaces at night and may bite intruders with little provocation. The bite is serious enough that it should be treated. Symptoms include a touch sensitivity and severe headache which generally develop in the first several hours following the bite. Funnel web spiders may be confused with the harmless wolf spider, which often wanders into homes in the autumn. For positive identification collect a specimen and send it for identification in a leakproof vial of alcohol (any type) to the Plant Diagnostic Clinic, WSU Puyallup, 7612 Pioneer Way, Puyallup, WA 98371-4998.

Control

Most spider problems can be solved without chemicals. It is better to learn to live with spiders than to try to eradicate them. The occasional spider found in the house can be removed by placing a glass jar over it, slipping a card underneath, and then carrying it outside. Spiders are fragile and will usually be killed by sweeping with a broom. Indoor spiders can be removed by vacuuming, especially behind and under furniture, in corners and crevices, and in storage areas such as basements or closets.

Spraying outbuildings and woodpiles is usually pointless because the habitat is so perfect for spiders that they will always return unless persistent or repeated pesticide application is used. Keep storage areas neat and uncluttered, with boxes sealed. Vacuum or hose down such areas from time to time. Protect outside woodpiles with a covering to make them less attractive to spiders.

Flies

The term fly refers to the adult form of many types of insects, some of which are considered beneficial because they help control other insect pests. When we talk about flies as house pests, we are referring to only about four kinds of flies which are often found indoors. Those which are attracted to food, garbage, or manure can pose a health hazard because they carry disease organisms, so managing flies in and around the home is important. Since the breeding sites for flies vary with the species, it is important to identify the adult fly in order to find the larval source.

Types of Household Flies

The common house fly is gray and about 1/4 inch long. It may breed in garbage cans, dumpsters, compost piles, or other sources of food waste, and it enters homes through

✓ 15 Steps to Prevent and Reduce Insect Problems

- 1 Keep kitchen free of food scraps and crumbs.
- 2 Wash counters, floors, and stovetops as frequently as possible.
- 3 Store food in airtight containers.
- 4 Wash dishes immediately.
- 5 Rinse bottles and cans before recycling.
- 6 Keep compostable material in sealed containers.
- 7 Fix dripping faucets and leaky pipes.
- 8 Keep counters, dish drainers, and lavatories dry.
- 9 Cover garbage and take it out often.
- 10 Don't leave pet food or water out overnight.
- 11 Make sure garbage cans seal and are free of holes.
- 12 Vacuum floors, baseboards, and crevices regularly.
- 13 Keep drains fresh and free of food scraps.
- 14 Clean kitchen fan.
- 15 Plug cracks.

cracks, holes, and other openings in the exterior walls.

open windows or doors. Somewhat smaller is the drain fly, which breeds in sewage and kitchen drains. The tiny yellow-brown vinegar fly hovers over fruits and vegetables in the kitchen. Another common fly, which is not associated with garbage or manure, is the cluster fly. Larger and darker than the housefly, this is the sluggish flier often found in clusters (hence the name) on windowsills in winter. The larvae are parasites which live inside earthworms, eventually tunnelling out to pupate. The adults frequently fly into homes in autumn and spend the winter there, sheltered from the cold.

Controls

■ Managing wastes

The primary control method for most flies is the proper storage and disposal of kitchen wastes, especially in warm weather. The goal here is to keep stored material as dry as possible and to prevent odors from escaping. Keep your kitchen clean and free of food scraps or overripe fruit. Wash dishes as soon after eating as possible, and keep drains fresh with baking soda and vinegar, followed with hot water. Food wastes should be separated from paper, bottles, and cans, and drained to remove as much liquid as possible. If you are composting, use a system that excludes rodents. Remove meat scraps and transfer the remainder to the composter daily. Use a plastic bowl with a snap-on lid as a temporary container.

If you are putting your food waste in the garbage can, wrap it in absorbent scrap paper to further dry it out before placing it in a bag, preferably taped or tied closed. Use a garbage can with no holes, which has a tight lid with a fastener to prevent its opening if tipped over. Rinse it out from time to time. Apartment dwellers should be sure the building supervisor keeps the dumpster closed and cleans it out periodically. Bottles and cans should be rinsed free of any residue and recycled. Unrinsed beer bottles, in particular, attract large numbers of flies.

Pet feces are another major source of flies. These should be removed regularly from cat boxes and backyards and rinsed down the toilet or buried.

■ Physical controls

Window and door screens are the best barrier to keep flies outside. Essential in the eastern part of the country, screens are not as common here in the Northwest. Anyone with a fly problem should install screens before even thinking of chemical controls. Screens must fit and be free of holes. When a fly does enter, it is best dispensed with the old-fashioned way—with a fly swatter. Every home should have one. They are also useful for mosquitos, crane flies, and moths.

Rolls of sticky flypaper are another traditionally effective way to catch flies, particularly in areas such as back porches, garages, and near garbage cans, where appearance is not important. They are not terribly attractive dangling in the kitchen but can be used there if necessary.

Screens, flyswatters, and flypaper should be adequate to control cluster flies, which are not associated with food waste and are not implicated in disease transmission. For other types of flies, physical controls will be inadequate unless accompanied by the sanitation practices described earlier.

Another effective alternative is to buy or build a fly trap. These devices lure flies with bait and then trap them in a chamber, where they die before they can find their way out. Clever designs confuse the flies by attracting them to sources of light far from the true exit. The type of bait varies according to the species of fly to be caught. Pheromone (sex attractant) traps are also available. Ultraviolet light and electrocution traps are not recommended for outside use because they kill as many beneficial insects as they do flies. They may be appropriate for some commercial uses indoors, but they should not be necessary in homes.

Chemical insecticides, including impregnated hanging strips, should not be needed if the source of the problem is addressed.



The old-fashioned fly swatter is still a great tool.

Ants

Ants are among the most common insects on earth, perhaps numbering as many as 1,000,000,000,000,000. It shouldn't be surprising, then, to see one or two in your house. Small numbers of ants are actually helpful because they clean up bits of organic matter which could serve as food for more problematic insects. In addition, they prey on other insect pests, such as flea larvae. If a line of ants is marching across your kitchen counter, however, something is wrong.

Of the 450 or so species of ants found in North America, about a dozen are major house invaders. One serious invader is the carpenter ant, which can damage the structure of the house. The carpenter ant is a destructive enough pest to warrant an entire discussion itself. Please refer to the following chapter for information on the identification and control of carpenter ants.

Identification

Several species of ants may be found in homes in the Northwest, nesting either inside the house in cupboards or foundations or living outside and invading from time to time. The pharaoh ant is an increasingly troublesome and difficult pest in the Northwest. The first step is to identify the type of ants you have. This can be tricky, since many of them are similar in appearance. Call your Cooperative Extension office, or search the Internet for photographs.

Controls

For ants other than carpenter ants, we suggest a calm approach based on integrated pest management, in which a few ants can be tolerated and total eradication is not expected. Decide for yourself what level of ants is problematic. Elevated levels or invasions of most ants should be dealt with quickly using good sanitation practices and physical controls first. It is important to locate the nest if possible and try to remove or relocate it. Chemical treatment is the last resort. Pharaoh ants are more difficult to control because of their tendency to spread to new colonies. A baiting program in conjunction with good sanitation is the most effective control for pharaoh ants.

■ Sanitation

Any food which is stored in the kitchen should be tightly sealed. Tiny ants can actually get into glass jars if there is no rubber gasket to make a seal, so be sure that all containers have tightly fitting lids. Be sure to sponge off any residue that might have dripped on the outside.

Keep all kitchen surfaces (including the floor) free of food scraps and standing or leaking water. Fix leaky faucets and sponge off dish drainers. Follow all of the steps described earlier for managing food wastes and rinsing containers. If you have a line of ants marching across the kitchen, find what they are going after, but don't remove it until you locate the entry point, seal it, and mop up the ants with soapy water. The best caulking material to use is silicone seal, but even petroleum jelly will work as a short-term fix until you have time to do a better job. If there is a nest behind the crack or cupboard, a chemical control may be needed.

When ants are a problem, food that needs to be left out in the kitchen, such as pet food or organic waste awaiting composting, can be placed in a moat of soapy water in a pie tin.

■ Physical Controls

Killing individual ants will have little effect unless food sources are removed and entry points are sealed. Once these are done, the remaining ants should be mopped or vacuumed up.

Ants frequently reside in potted plants. They can be removed by taking the pot outside and repeatedly flooding it with water. To keep ants from re-entering the pots,

Using traps and baits



Ant or roach baits usually come in plastic bait stations to protect children and pets. Insects enter through several small openings.

(Drawing by Karen English-Loeb, Cornell University, 1997)

paint a wide band of sticky material below the rim of the dish which sits under the pot. Commercially available products include Stickem,TM Tanglefoot,TM and Sticky Stuff.TM

■ Chemical Controls

If chemical control is needed, commercial bait stations are preferred over spray treatments. There are a number of chemical methods that are frequently referred to as least-toxic. These include diatomaceous earth, silica gel, boric acid, and pyrethrum. While safer than some other insecticides, all of these materials carry enough risk that they should not be used unless necessary. Diatomaceous earth and silica gel are dusts that kill insects by drying them out. Such powders are dangerous to breathe, and if they must be blown into the space between walls, a professional should do the job. These materials last a long time but are slow to take effect. Sometimes pyrethrum is combined with silica gel to give a quick “knockdown” of ants. Best are products with a straw-like dispenser that can accurately place the mixture in cracks and crevices rather than out where people may contact it.

Boric acid is a poison which can be used in cracks and crevices or mixed with sugar and water to make a bait. It should be kept away from any possible contact with crawling children. Insecticidal soap can be used to drench an ant colony outdoors or in a crawl space. More than one treatment may be necessary.

For pharaoh ants a commercial bait using boric acid or methoprene is recommended. Baiting must be done correctly or it will not work and may make the problem worse. Read Extension Bulletin EB1514 on pharaoh ants for precise directions.

Cockroaches

Long the bane of apartment dwellers, cockroaches have established a reputation as one of the most annoying and persistent household insects. Cockroaches can carry disease, contaminate food, and induce allergies. They hide by day in cracks and crevices and feed at night on water and crumbs of food. Once established in a large building, they cannot be controlled completely unless all residents cooperate in the effort simultaneously.

If more palatable food is not available, cockroaches will eat almost anything, including items not normally considered food, such as wallpaper paste, envelope glue, and bar soap. Most prefer warm, moist areas such as kitchens and bathrooms or near washing machines, sinks, and hot water heaters.

Control

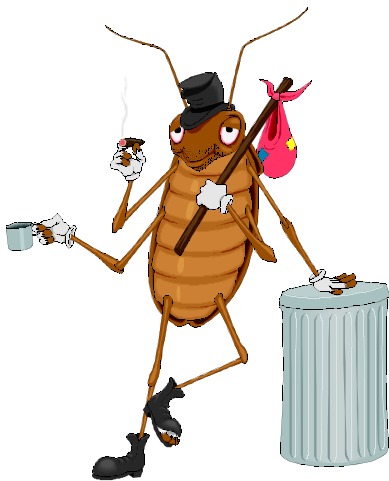
Zero is an appropriate tolerance level for cockroaches. Non-toxic sticky traps placed in strategic locations, especially suspected travel paths, can show if a control strategy is working. The principal means of control is to reduce food, water, and possible harborages to a level where few roaches can survive.

■ Food and Water

Observe all the cleanliness practices listed above for fly and ant control. Pay particular attention to areas where grease accumulates, such as drains, vents, and stoves. Make sure all sweet, starchy, and fatty foods are sealed tight. Wash pastry cloths. Do not leave pet food or water bowls out at night. Fix dripping faucets and any other leaks, and make sure your dish rack drains properly. Damp, dirty mops can also attract roaches.

■ Harborage

If a cockroach harborage is found, wash down and vacuum the area if it is accessible. Plug all small cracks around baseboards, cupboards, pipes, sinks, water heaters, and bathtub fixtures with latex or silicone caulk. Large holes will need to be patched. Seal all potential entry points from outside the home and check door seals and window screens. Air vents should also be screened, particularly those around the stove.



Unless you remove sources of food and water, roaches will stick around.

Move debris, firewood, and garbage away from the house. Follow the tips above regarding garbage cans and pet waste. If you live in an apartment, be sure the other residents do the same.

■ Chemical Control

Serious infestations may require an insecticide. One alternative to conventional pesticides is boric acid, which is very effective at killing roaches, though it works slowly. It is poisonous and must be kept away from areas where small children may explore, but it is non-volatile. Boric acid is particularly useful in cracks which cannot easily be plugged.

A number of commercial roach baits are available. Used inside sturdy traps, they are inaccessible to children and pets and can be placed selectively where roach activity is highest. Baits are best used under kitchen sinks, behind stoves and refrigerators, in kitchen and bathroom cabinets, and behind toilets, as shown in the diagram below.

Chemical sprays should not be necessary and should be avoided. ■

Monitoring traps



Sticky traps like the one above can be used to monitor roach problems. Place traps as shown below. These same locations can be used for poison baits once you know where the roaches are hiding.

For More Information

"Spiders" WSU Extension Bulletin EB1548 has good pictures for identification of species.

(<http://cru.cahe.wsu.edu/CEPublications/eb1548/eb1548.html>)

"Solving Nuisance Ant Problems without Pesticides." Journal of Pesticide Reform.

(<http://www.pesticide.org/ants.pdf>)

"Getting to Know Spiders." Journal of Pesticide Reform.

(<http://www.pesticide.org/spiders.pdf>)

"Cockroaches." UC IPM Online. Pests of Homes, Structures, People, and Pets.

(<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7467.html>)

Publications by the Bio-Integral Resource Center, Box 7414, Berkeley, CA 94707 (www.birc.org):

Baiting Cockroaches. 8 pp. \$6

Dust Mites, Cockroaches and Asthma. 15 pp. \$6

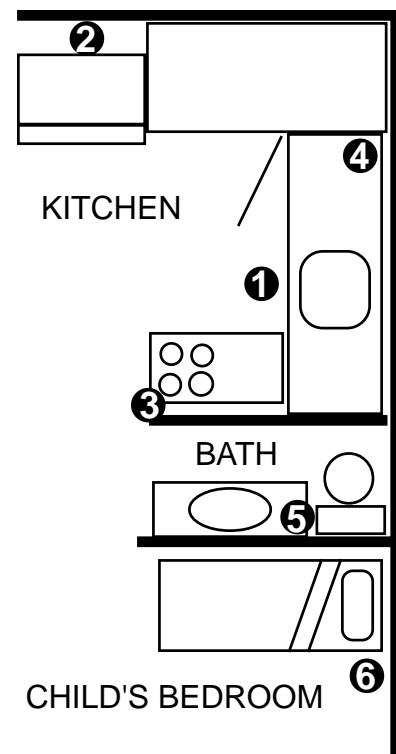
Fabric and Paper Pests. 18 pp. \$6

IPM for Ants. 37 pp. \$15 + \$2 postage and handling.

IPM for Cockroaches. 16 pp. \$6

IPM for Flies. 24 pp. \$8.00 + \$2 postage and handling

Where to place traps



Disposal of Household Insecticides

Household insecticides in aerosol or other form should be disposed of as hazardous waste if the containers are not empty. Do not keep unwanted pesticides around the home any longer than necessary. If you have any question about how or where to dispose of a product, contact your local household hazardous waste agency. In the Seattle/King County area, call the Hazards Line at 206-296-4692 for more information.

The Washington Toxics Coalition is a non-profit organization dedicated to protecting public health and the environment by preventing pollution. Please write or phone for information: WTC, 4649 Sunnyside Ave N, Suite 540, Seattle, WA 98103. Phone: 206-632-1545. Visit our Internet Web site at www.watoxics.org.

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