

Wasps, Hornets, Yellowjackets, and Spiders

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Stinging Insects

Yellowjacket, wasp, and hornet stings are a health threat to humans and animals. About 50 people die in the United States each year from allergic reactions to the venom of these insects. However, thousands have significant allergic reactions. Wasp, hornet, and yellowjacket workers foraging away from the nest are seldom aggressive but they often attack people who come too close to their nest. Nests that pose a threat should be treated and eliminated carefully.



Yellowjackets, wasps, and hornets use their stingers to paralyze the insects that they capture to feed their developing larvae. The stingers also are used to defend their colony from intruders. The barbed stinger of a honey bee limits it to one sting but the barbless stingers of yellowjackets hornets and wasps can be used multiple times.

In addition to the pain of the puncture, the injected venom can trigger a local or allergic reaction. Wasp, hornet and yellowjacket stings can be life-threatening to persons who are allergic to the venom. People who develop hives, difficulty breathing or swallowing, wheezing, or similar symptoms of allergic reaction should seek medical attention immediately. Itching, pain, and localized swelling can be somewhat reduced with antihistamines and a cold compress.

(photo: Yellowjacket stinger (apolloxpestcontrol.com))

Local reactions to wasp and hornet stings peak at about 48 hours and usually get better in 5 to 10 days.



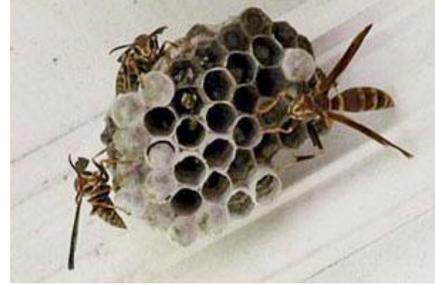
(www.webmd.com)

Paper wasps, hornets, and yellowjackets build nests of a paper-like material made with their salivary secretions and finely chewed wood fragments.



Common paper wasp getting wood fibers for its nest.

The red and brown common paper wasp typically builds an open umbrella-shaped nest in a protected site under an eave or ledge. These red-brown wasps with yellow markings are not as aggressive as yellowjackets or hornets but will respond to control attempts.

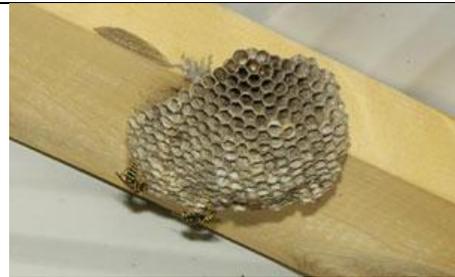


*Open umbrella-shaped nest of the common paper wasp under an eave. New workers will soon emerge from closed cells.
(www.wrbcto.com)*



European paper wasp (ento.psu.edu)

The yellow and black European paper wasp (which resembles a yellowjacket) is relatively new to Kentucky. Its open-faced nest may be built under an eave or in a shelter. Paper wasps can be a problem when they nest over doorways, decks, or places where people are regularly active.



European paper wasp nest (Joseph Berger, Bugwood.org)



Baldfaced hornet (Johnny N. Dell, Bugwood.org)

The black and white baldfaced hornet is far more difficult and dangerous to control than the paper wasps. Its large, enclosed nest usually is attached to a tree, bush, or occasionally, side of a building. It may contain 200 to 400 of these inch-long hornets by late summer. They can respond very aggressively when the nest is approached or disturbed. Nests that are near doorways or foundation shrubbery may need to be treated to eliminate the risk of people being stung.



Typical football-shaped aerial nest.



Yellowjacket (Jon Yuschock, Bugwood.org)

Yellowjackets are stout-bodied yellow and black insects that are often considered the most dangerous of stinging insects. They build underground paper nests, often using abandoned burrows of chipmunks or mice or holes in loose soil around shrubbery or landscape timbers. These stocky yellow and black insects strongly defend their nest against people or pets that might accidentally approach it. Nests may contain several hundred workers by



Underground Yellowjacket nest entrance (Mohammed El Damir, Bugwood.org)

	<p>late summer, making control attempts dangerous.</p>	
 <p><i>European hornet (David Stephens, Bugwood.org)</i></p>	<p>The European hornet is a large (1½-inch-long) brown and orange insect with dark wings. When away from the nest, it will only sting when threatened. However, these hornets will work together to defend their nest against anyone who comes too close. This insect is a woodland species that builds its large paper nest in natural cavities, especially in hollow trees. Often the nests are 6 feet or higher above the ground. Occasionally, the hornets will select a protected, undisturbed spot in a barn, attic, or wall void. An average hornet nest will have 200 to 400 workers by late summer and they can become aggressive if they feel threatened.</p> <p>Because of its intimidating size and appearance, the European hornet is sometimes mistakenly identified as the giant Asian hornet, which does not occur in the US.</p>	 <p><i>European hornet nest</i></p>

Basic Life Cycle

Yellowjackets, wasps, and hornets have similar life cycles. All form annual colonies that with the exception of fertilized queens, die in the fall. The only survivors are mated queens that spend the winter under bark and in other sheltered locations. They emerge in the spring to establish new colonies. Queens select a nesting site, then work alone to build a small paper nest in which they lay a few eggs. The queens will capture and sting insects to feed to the larvae developing in the individual cells of the paper nest. In about a month, sterile female workers will emerge and assume hunting, nest building and brood care duties. The queen stays at the nest and lays eggs. New males and queens are produced in late summer to early fall. Mated queens then move to winter shelter. The workers die during the fall leaving the abandoned nest to disintegrate. While nests are not re-used, other queens may select the site to build their own.

Management

Yellowjackets and hornets defend their nests. Wear protective clothing and be sure people and pets stay out of the danger zone. A full wasp suit, sealed at the wrists, ankles, and collar, should be worn to protect against stings. Nests that are not near doorways or areas where people are active can be left to collapse in the fall. The remnants can be removed and if practical, the structure should be modified to keep it from being used the following season.



(aucklandpestcontrol.wordpress.com)

Insecticide dust formulations can be puffed into nest entryways, especially underground yellowjacket nests, for effective control. Do not block the nest opening so foraging wasps or hornets can be exposed to the treatment when they return. Do not seal openings used by wasps or hornets nesting in attics or wall voids.

Baldfaced hornet nests have a single opening, usually toward the bottom, where the wasps enter and exit. It is critical that the paper envelope of the nest not be broken during treatment or the irritated wasps will scatter in all directions, causing even greater problems.

Aerosol formulations designed to shoot a stream of insecticide from 15 to 20 feet away allows safe treatment from a distance. The insecticides in these products cause quickdown of the target pests; however, some insects may only be partly disabled and can still sting. Do not stand underneath a nest when treating.

In some cases, it may be best to make the insecticide application at night when the colony is less active. Pinpoint the nest opening during the day so you will remember where to direct your treatment after dark. Approach the nest slowly. Shining the beam of your flashlight directly into the nest entrance may startle the wasps. Direct the beam to the side to illuminate the nest indirectly. If possible, place the light on the ground rather than in your hand as wasps tend to fly toward light. As with hornets, yellowjackets are extremely aggressive when the nest is disturbed. European hornets do fly at night.

Wait at least a day following treatment before removing the nest to ensure that all of the wasps are killed. Make a repeat application if hornets continue to be seen.

Foraging yellowjackets and hornets can be a problem in early fall as these insects switch from an insect diet to searching for sugars.

Other Management Options



- **Sanitation**—The best way to reduce the threat of foraging hornets, wasps, and yellowjackets is to minimize attractive food sources. People eating outdoors should keep food and beverages covered. Spills and leftovers should be cleaned up promptly. Trash cans should be equipped with tight-fitting (preferably self-closing) lids. Similar sanitation recommendations should be made to commercial establishments, including ice cream parlors, outdoor cafes, and supermarkets. Whenever possible, trash cans and dumpsters should be located away from serving tables, loading dock doors, and other entrances. Trash cans should be equipped with a plastic liner and emptied and cleaned frequently. Maintaining high levels of sanitation earlier in the summer will make areas less attractive to yellowjackets later in the year. This strategy is especially useful for parks and recreation areas.

- **Avoidance**—Combined with sanitation is the best strategy in most situations. Yellowjackets foraging away from their nests are seldom aggressive and usually will not sting unless provoked. Resist the temptation to “swat” at the wasps. Be careful when drinking from beverage cans which may contain foraging individuals. Avoidance may also be the best advice if a yellowjacket (or hornet) nest is located in a tree or other out of the way location.

- **Repellants**—A dilute solution of ammonia and water (approximately 6 fluid ounces of ammonia per gallon of water) sprayed in and around trash cans and sponged onto outdoor tables and food preparation surfaces may help to repel yellowjackets from these areas. Use household ammonia, not bleach.

- **Traps**—Although only of marginal benefit, traps are available which may catch impressive numbers of yellowjackets when properly baited and positioned. Business establishments such as outdoor cafes may find these traps worthwhile when used with other approaches.

Spiders

Hundreds of species of spiders live in Kentucky. These predators are an important part of the food web. Some, such as garden and cellar spiders, construct webs to help entrap their prey. Wolf spiders are free-roaming hunters. Many live in lawns, gardens, and around foundations so they regularly enter homes and buildings as accidental invaders. Only a few species can live indoors for extended periods. Spiders generally will not attempt to bite unless they are held or accidentally trapped against the skin. While they have fangs and venom, most are harmless because their fangs that are too small or weak to puncture human skin. However, bites of some spiders are dangerous.



Black widow spider with its egg sac

Black Widow Spider

Black widow spiders are common in Kentucky. They live in concealed outdoor locations: piles of rocks, piles of firewood, and dark corners of garages, basements, and out-buildings. The female black widow is about 1/2-inch long, shiny black, and usually has a red hourglass mark on the underside of the abdomen. However, the hourglass mark may be reduced to two separate spots. Spiderlings and male spiders are smaller than females and have several red dots on the abdomen's upper side.

Widow spiders belong to the cobweb spider family and spin loosely organized trap webs. The webs are usually found outdoors under objects such as rocks and ground trash or under an overhanging embankment. In good areas, mature females can be found every few feet. When found indoors, they are usually under shelves, appliances or heavy furniture; not out in the open like other cobweb spiders. Black widow spiders are timid and will only bite in response to being injured. People are usually bitten when they reach under furniture or pick up objects under which a spider is hiding.

Black widow venom is a nerve toxin that acts rapidly. The victim suffers painful stiffness of the abdomen and usually a tightness of the chest. Blood pressure and body temperature may rise and sweating, localized swelling, and a feeling of nausea may occur. In about 5% of the bite cases the victim may go into convulsions and die if not given medical attention. First aid for black widow spider bites involves cleansing the wound and applying ice packs to slow absorption of venom. Victims should seek medical attention promptly.



Brown Widow Spider

Many have heard or read about the brown widow spider. It is gray to brown with white and black markings on the top surface of the bulbous abdomen. The “hourglass” marking on the under surface of the abdomen is yellow to orange, and the legs have dark bands. The brown widow is a tropical species that has been found in Florida, Georgia, Texas, and multiple localities in southeastern Louisiana and Mississippi as far north as a county bordering Tennessee. It is not known to occur in Kentucky.



The violin marking on the back of the brown recluse is not always distinct. (www.doyourownpestcontrol.com)

Brown Recluse Spider

The brown recluse spider ranges from a dark cream color to dark brown. The abdomen is darker than the rest of the body. It has a **violin-shaped, dark mark on top of the leg-bearing section of the body** so it is sometimes called the “fiddler or violin” spider. Brown recluse spiders also have 3 pairs of eyes rather than 4 pairs as do most other spiders.

The brown recluse roams at night seeking its prey. During the day, it hides in dark cracks and corners, where it may spin a poorly organized web. This shy spider will try to escape if disturbed but will bite if cornered. Some people are bitten while they sleep because they roll onto a brown recluse spider while it is hunting in the bed. More often the victim is bitten while putting on a shoe or piece of clothing that the spider is using as a hiding place.

The bite of the brown recluse is usually painless until 3 to 8 hours later when it may become red, swollen, and tender. Later, the area around the bite site may develop into an ulcerous sore 1/2-inch or larger diameter. Healing often requires a month or longer, and the victim may be left with a deep scar. Prompt medical attention can reduce the extent of ulceration and other complications that may develop. Persons bitten by a spider which they think is a brown recluse should try to collect the specimen and bring it to a qualified individual for identification. Positive identification by an expert will help the physician decide on the appropriate course of treatment. All spider bites are puncture wounds that may become infected and resemble brown recluse bites.

Other Spiders Found in Homes and Buildings

Yellow Sac Spider



Yellow sac spiders may account for more human bites than any other spider. Yellow sac spider silk lair and eggs. (Joseph Berger, Bugwood.org)

The yellow sac spider is common on foliage, under leaf litter, stones, and boards. It lives around and in buildings under the window sills and vinyl siding. While it is an outdoor spider, it can wander indoors and become established. Sac spiders hide in silk tube-like retreats in corners of walls and ceilings during the day and hunt for prey at night. Like the brown recluse, these spiders can come in contact with people as they move about at night. An aggressive spider, this species may account for more human bites than any other species. It will bite repeatedly if kept in contact with the skin. Sac spider venom is toxic to the skin so its bite can resemble that of the brown recluse but usually heals more quickly.

Inspect for sac spiders by looking for sacs in upper corners of rooms, ceilings, behind pictures, on window molding, blinds or curtains. During the day, sac spiders may be inside these sacs so vacuuming is an excellent method of control. Remove and discard vacuum cleaner bags to prevent re-infestation.

Cellar Spider



Cellar spiders have small bodies and long, thin legs. They hang from their irregular cobwebs in damp basements and crawlspaces. They are not known to bite people but large numbers of them can live close together in an extensive tangle of webbing.

Barn Spider



The barn spider is an orb weaver spider, a group that spins flat webs with radiating lines and concentric circles to trap their prey. Their webs are anchored to an overhang, like a porch or seldom-used door. The spider hangs on its web at night and hides in a crevice during the day. They seldom bite but the sticky webs are easy to walk into.

Wolf Spiders



Wolf spiders are common accidental invaders in homes. (www.uky.edu)

Wolf spiders are intimidating because they run fast and some species are relatively large. They rarely bite and it is no more dangerous or painful than a bee sting. Wolf spiders found indoors are often mistaken for brown recluse spiders. However, brown recluse spiders are very secretive and are almost never seen out in the open.

Inspection Tips



(innovativepestcontrol.com)

Thorough inspection of cracks, corners, and other dark, undisturbed areas with a bright flashlight will help determine the location and extent of a spider infestation. Pay particular attention to basements, attics, crawl spaces, closets, under/behind beds and furniture, inside shoes, boxes of stored items, and between hanging clothing. Spiders also may be found living above drop ceilings, behind baseboards, and inside ductwork or registers. Brown recluse spiders can live in utility sheds, woodpiles, and underneath lumber, rocks, and accumulated debris. Protect yourself from bites by wearing work gloves when inspecting inside boxes or when moving stored items.



Brown recluse in sticky trap (horizonpestcontrol.com)

Use glueboards or sticky traps to find where spiders are active and to monitor control efforts. Placed flush along walls and in corners, glueboards and sticky traps are useful monitoring tools and will also capture large numbers of spiders. Brown recluse and black widow spiders also live outdoors in barns, utility sheds, woodpiles, and underneath lumber, rocks, and accumulated debris. To avoid being bitten, wear work gloves when inspecting inside boxes or when moving stored items.

Spider Control

Eliminating a spider infestation involves two basic principles:

- **altering the environment in and around a building to make it less attractive** to spiders; and
- **finding and destroying as many spiders as possible.**

The following measures can be used to control all spiders:

1. Routine, thorough housecleaning is the best way to eliminate spiders and discourage their return. A vacuum cleaner or broom effectively removes spiders, webs, and egg sacs.
2. Spiders prefer quiet, undisturbed areas such as closets, garages, basements, and attics. Reducing clutter in these areas makes them less attractive to spiders.
3. Large numbers of spiders often congregate outdoors around the perimeter of structures. Migration indoors can be reduced by moving firewood, building materials, and debris away from the foundation. Shrubs, vines and tree limbs should be clipped back from the side of the building.
4. Install tight-fitting window screens and door sweeps to exclude spiders and other insects. Inspect and clean behind outdoor window shutters.
5. Consider installing yellow or sodium vapor light bulbs at outside entrances. These lights are less attractive than mercury vapor, fluorescent, or incandescent bulbs to night-flying insects which, in turn, attract spiders.
6. To further reduce spider entry from outdoors, insecticides can be applied as a “barrier treatment” around the base of the foundation. Pay particular attention to door thresholds, garage and crawl space entrances, including foundation vents. Wettable powder or microencapsulated “slow-release” formulations are most effective.