

Home and Horticultural

Bees and Wasps



Bees and wasps are members of the insect order Hymenoptera. They are, for the most part, beneficial to people. Honey bees produce honey and wax and serve as important pollinators. Wasps attack and parasitize many kinds of harmful insects including flies and caterpillars. In spite of their value, bees and wasps can become a nuisance when they move into a building or the vicinity. When this occurs, they can be controlled effectively with insecticides, or by removing the swarm or colony.

There are both solitary and social species of bees and wasps. It is the social species, living in large colonies, that aggressively defend their nests. Solitary species seldom defend their burrows and rarely sting.

The Sting

Only female bees and wasps sting. The various stinging mechanisms are, in fact, modified egg-laying structures. Wasps have stingers without barbs, and they can sting repeatedly. The honey bee has a barbed stinger and can sting only once, leaving the stinger at the site. When stung by a honey bee, a person should carefully remove the stinger by using a scraping action from the side. Any squeezing will force more venom under the skin.

Bee and wasp venom produces lethal or narcotic effects in the insects intended as food. Stinging is also a defense mechanism. While truly “unprovoked” stinging of large animals is considered quite rare, it takes very little provocation to incite some social bees and wasps to attack intruders near their nests.

People who know they are sensitive to stings should take the necessary precautions. Insect sting kits are available with a physician’s prescription.

Bee and Wasp Control

The following precautions should be taken when treating bee or wasp nests.

- Wear protective clothing with a bee veil if possible.
- Make the treatment at night when the insects will be inside the nest.
- Use a flashlight covered with red cellophane for lighting.

- Treat the nests **ONLY** with insecticides labeled for use on bees and wasps.

Social Bees

Honey Bee (*Apis mellifera*)

Honey bee worker
(actual size 1/2”)



The number of honey bee colonies increases by dividing, called swarming. Half or more of the worker bees leave the parent colony, usually taking the old queen with them. The bees cluster on a tree or fence post for a few hours while “scout bees” search for a suitable new home, such as a hollow tree or a space in the wall of a building.

Poorly managed commercial colonies of honey bees issue one or more swarms in the spring or early summer. Swarms are not usually a problem unless they land in an inconvenient place or are molested, and are best left alone. If you need to have them removed, contact your county Extension agent, police or fire department, for a list of beekeepers willing to collect swarms. Because of the low value of the bees and the amount of time it takes to capture a swarm, many beekeepers charge for collecting. An alternative is to pay a pest control operator to kill the bees.

If a swarm does establish itself in a building, it will begin immediately building honeycombs in which to rear young bees and store honey and pollen. If the colony has been in place as long as a month, these combs must be removed after killing the colony. If not removed, fermenting honey, dead bees, and melting wax will cause odor and insect problems. In some cases, the honey and wax may seep through the plaster, forming dark stains on walls and ceilings.

Trapping bees is very complex and can take several weeks. Only experienced beekeepers should attempt to remove live bees from walls.

Before starting control measures, you must know the location of the colony in the wall in relation to the colony entrance. In some cases, the distance is great enough that insecticides applied at the entrance will not reach the bees. Locate the nest by tapping on the wall at night and listening for the area with the loudest buzzing. The bees keep the nest at about 95°F, a temperature high enough to warm the wall beside it, so you may also be able to feel, as well as hear, the nest location.

Either dust or spray formulations of Sevin (carbaryl), can be used within empty spaces or other cavities in the walls, but dusts generally are more effective. If the entrance hole is close to the colony, apply the dust or spray in the entrance. Otherwise, drill a hole near the colony and treat it with insecticide. Afterwards, seal the entrance and all other holes through which bees might enter or leave the wall. A reapplication may be necessary in 10 days to kill emerging young bees.

After all buzzing and flight activity have ceased, or within 2 weeks, the wall must be opened and all dead bees, combs and honey removed. The wax and honey are contaminated and should not be consumed by humans nor left exposed where valuable honey bee colonies nearby could be damaged. Wax and honey should be burned.

Bumble Bees (*Bombus spp.*)

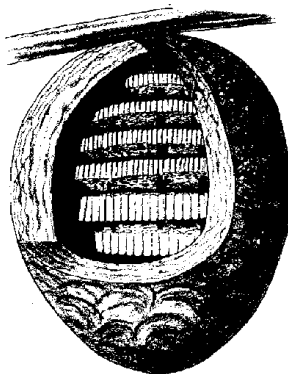
These are large, heavy-bodied social insects that usually nest in the ground. They can become a problem if the nest is established close to a building foundation or when they occasionally nest in insulation material. Most species will defend their colonies aggressively. Treat the nest entrance at night with an insecticide for wasps and hornets.

Social Wasps

Baldfaced Hornet (*Dolichovespula maculata*)



Baldfaced hornet
(actual size 3/4")



Nest of the baldfaced hornet

This hornet is black with white markings. Adults are up to three-fourths of an inch long. These wasps build nests of paper-like material composed of salivary secretions produced by the females. The large gray nest is shaped somewhat like a football and is located in trees and shrubs. A new nest is started in the spring and enlarged as the colony expands until by fall, the nest is at its maximum size.

Only the queens, by hibernating, survive the winter. Meanwhile, the nest is destroyed by birds and other animals who feed on the remaining larvae in the nest. A nest will not be repaired and used again the following year.

When hornets are a nuisance, they can be controlled by using insecticides labeled for wasps and bees. Treat the nest in the late evening or night when the hornets are in the nest and when the temperature is lower. It is best to use a specifically formulated aerosol spray that will propel the pesticide 2 to 3 feet. First, direct the pesticide at the entrance hole at the bottom of the nest. Next, thoroughly soak the remainder of the nest. If necessary, repeat the treatment the next evening. When there is no further sign of activity remove and destroy the nest.

Yellow Jackets (*Vespula spp.*)

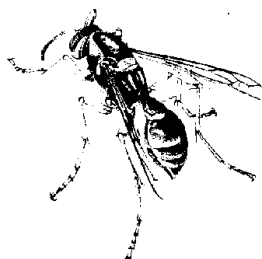


Yellow jacket
(actual size 3/4")

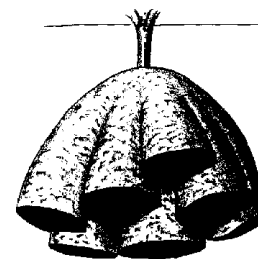
At first glance, or in flight, these insects often are mistaken for honey bees. However, yellow jackets have definite black and yellowish bands on the abdomen.

Yellow jackets usually nest in the ground or near foundations. Homeowners often first encounter yellow jackets while trimming shrubs, mowing or weeding. The nest is also a "paper nest," but it is usually located several inches to a foot underground. Spray the entrance hole directly. Remove the nest when activity has ceased.

Polistes Wasp (*Polistes spp.*)



Poliste
(actual size 3/4")



Typical polistes nest

Polistes wasps are long-legged and slender with a spindle-shaped abdomen. In color they are reddish brown to brown. They often are seen flying up and down the outside of walls on sunny days in the spring and fall. In the spring they are looking for a nesting site, while during the fall they are seeking shelter.

Polistes wasps build "paper nests" that look like a section of honeycomb with only one layer of cells facing downward. These wasps use attics, barns and garages as nesting locations and often the nests are located under the eaves or protective overhang of a building. The adult Polistes abandon their nests

in the fall, and the mated females are the only insects to survive the winter.

Killing a *Polistes* female in fall or early spring will eliminate an entire nest during the summer. Effective control in early summer can be achieved by inspecting under eaves and other protected areas, and removing and destroying nests. In addition, insecticides for bees and wasps are effective on these inverted, open nests.

During the fall and winter months, the hibernating female will sometimes be encountered in the attic, window wells or similar protected areas and can be destroyed.

Solitary Wasps and Bees

Mud Dauber Wasp (*Sphecidae*)



**Mud dauber
(actual size 1")**



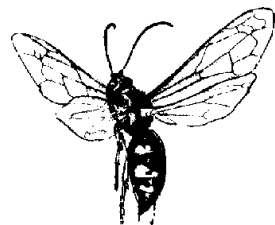
Mud dauber nest

In spring, these wasps emerge from their nests where they have overwintered in the larval stage. After mating, each female builds a mud or clay nest. She will construct the first cell and fill it with about 20 immature spiders which have been paralyzed by her sting. She will lay an egg on one of the spiders, and then cap the cell with clay. Each female builds six to 20 cells. Occasionally, a second nest is constructed in another location.

When the nest is finished, the female leaves it and does not return. The larvae hatch from the eggs, feed on the paralyzed spiders, and in a few days, they spin cocoons and change to pupae. The pupae emerge as adults in about 2 weeks.

One to three generations of mud daubers can develop each year. They are docile and seldom sting unless teased or injured. Control is difficult and exclusion is the best solution. Mud structures should be picked off and destroyed.

Cicada Killers (*Sphecius speciosus*)



**Cicada killer wasp
(actual size 1 1/2")**

In early summer, adult cicada killers come out of their nests where they have overwintered as larvae. After mating, the fertilized female digs a long burrow in the ground at the end of which she digs a large oval cell. Then she hunts for one or two cicadas, paralyzes them, and places them in the cell. She then

lays an egg on one of the cicadas, seals the cell with soil, digs another cell, and repeats the egg laying. A completed nest may contain about 16 cells. When the eggs hatch, the larvae feed on the cicadas.

Carpenter Bee (*Xylocopa virginica*)

Carpenter bees are large (three-fourths to 1 inch long), heavy-bodied insects. Their blue-black metallic bodies have some yellow or orange hair. They resemble bumble bees, but can be distinguished by their shiny, black, hairless abdomens. A bumble bee has a yellow, hairy abdomen and large pollen baskets on its hind legs.

Carpenter bees become a nuisance in the spring as they fly erratically, close to homes or other buildings. Males hover, waiting for the females to emerge from the burrow so they can mate. If the males are disturbed, they may hover or buzz around the head of the person but will not sting. Only females sting and then only if molested.

Aside from being a nuisance, carpenter bees also can cause structural damage when they bore into seasoned woods, especially soft woods such as cedar, redwood, pine and fir. They can damage soft or weathered woods on porches, ceilings, railings, overhead trim, porch furniture, dead tree limbs, fence posts, wooden shingles, wood siding, window sills and wood doors.

The female bees bore circular holes, about one-half inch in diameter, into the wood at right angles to the surface for about an inch. Then they turn sharply, boring with the wood grain for 4 to 6 inches. The female provides this tunnel-nest with "bee bread" (a mixture of pollen and regurgitated nectar), which serves as food for the larvae after the eggs hatch. She makes a cell for each larva and closes each cell with chewed up wood pulp. There may be as many as six to eight cells in the tunnel. Development from egg to adult varies from one to three months. Though adult bees usually emerge in late August, they will not mate until the following spring.

Bees that survive the winter mate in the spring (April to June) and then begin preparation for the next brood. Carpenter bees do not eat the wood they tunnel in, but use these tunnels for rearing the young.

The structural damage caused by one or two carpenter bees is slight. However, these bees cause woodstains by defecating near their tunnels. In addition, this pest will inhabit old tunnels and an infestation can persist year after year.

Carpenter bees rarely attack painted wood, so keep all exposed wood surfaces well painted. Wood stains will not protect them. If painting is not practical, use wood that has been pressure treated with a preservative.

Treat the tunnel entrance after dark when the bees are less active. Aerosols and dusts are available. Do not plug the holes, but allow the bees to pass freely so they come in contact with the insecticide. Treat them in August to kill newly emerging bees. Fill the holes a day or two later to discourage future use.

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-793

March 1992

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