



# Paper Wasps and Yellow Jackets

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Jody Green  
Extension Educator

Wasps are beneficial insect predators and biocontrol agents of many insect and arthropod pests, but during the summer months, some species have the potential to be an urban pest.

## Identification of Social Wasps

Social wasps such as paper wasps and yellow jackets, live in large colonies, compared to solitary wasps, which live and forage alone. Bees can be distinguished from wasps by their fuzzy appearance and their diet consists of nectar, pollen and water. Wasps appear hard and shiny with less hair, wings are folded into a narrow strip over the abdomen while at rest and legs dangle as they fly.

Photos unless otherwise noted:  
Jim Karsch, UNL Department of Entomology



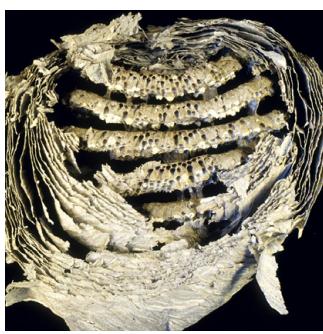
Paper wasps appear smooth and shiny with various patterns of yellow and brown or black



Yellow jackets are bright yellow and black with black antennae



Paper wasp nest



Yellow jacket nest (can be underground)

Wasps become nuisances when nests are constructed in locations where humans frequent. Only females are capable of stinging and most stings occur when they are stepped on, touched or in defense mode. Some people are hypersensitive to wasp venom, and stings can lead to life-threatening anaphylactic shock.

## Nesting Type and Location

The queen overwinters in protective sites, and emerges when the weather warms up. She begins to search for a suitable location to begin construction of her nest. She builds cells using papery pulp made from chewed up wood fibers mixed with saliva, and lays a single egg in each cell. She forages for food during the day, feeding larvae pre-chewed insects. Adult wasps feed on sugary substances such as nectar, plant sap and rotting fruits.

The nest of a paper wasp is a single-layer of downward-facing, exposed cells, resembling an umbrella. These nests are constructed under any horizontal surface, including overhangs of buildings, beams, furniture and limbs. The European paper wasp can also nest in small cavities, such as hollow posts of outdoor furniture, appliances and light fixtures. A yellow jacket nest consists of a series of round combs stacked in tiers, covered in an envelope and are located underground in abandoned rodent burrows, as aerial nests or in wall voids.

## Avoid Attracting Wasps

Many wasps are scavengers and will forage on a wide variety of foods we consume. The best way to prevent wasps is to keep food covered, dispose of trash in a covered container and remove rotting fruit from trees.

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## Finding and Treating the Nest

Locate the nest so it can be avoided or eliminated, in areas where wasps pose a threat to humans. The best time to find the nest is during the day, when foraging behavior can be observed. The best time to treat and control wasps is after dark when temperatures are cooler and all foragers retreat to the nest. Attempting to treat during the day is not advisable because high numbers of active wasps increase the potential for defensive stings.

### IMPORTANT:

- 1. Treat at night.**
- 2. Wear protective clothing that covers the body, face and hands completely.**
- 3. Use a red light (or disguise beam of flashlight with red cellophane) so the wasps cannot detect presence.**

## Chemical Control

There are professional pest management companies that can eliminate wasp nests in a variety of environments and locations. This would be recommended if nests are located in a wall void, extremely high up, or if homeowners are fearful of tackling the job themselves. Professionals have specialized equipment, insecticidal dusts, ladders and training to complete the job during the daytime.

There are many products labeled for stinging insects with different active ingredients. **Some products, available for homeowners, include brands and formulations listed below.**

Synthetic pyrethroids offer quick knockdown in ready-to-use formulations that can be sprayed as far away as 20 feet, adding protection to the user. It is best to treat in early summer when colonies are below peak population numbers and aggressive behavior is not yet evident. Come late summer, adult wasps are plentiful and respond aggressively when competing for sources of sugar (i.e. your watermelon, popsicle, fruit juices and pop).

## Treatment for Wasp Stings

In late August-Sept, the incidents of social insect stings increase, most often when unsuspecting homeowners or service companies mow the lawn and inadvertently disturb a colony of ground-nesting yellow jackets. In the case of minor reactions to a wasp sting, wash and clean the area with soap and water, and then apply a cold compress of ice to relieve the pain and ease any swelling. If the person requires more extensive treatment, a physician may recommend a lotion, cream or antihistamine to reduce irritation and swelling. In the case of anaphylactic shock, seek immediate medical attention and administer EpiPen.

## Tips

- If a wasp accidentally gets into the house, it will likely settle by the window. Use a fly swatter. Do not use wasp spray inside.
- If a wasp enters your vehicle, do not panic. Roll down the window and let it fly out or bring the car to a safe stop and open the door.
- If you cannot locate the nest, do not use an insecticide. Spraying the air, a single wasp, or yourself is not the solution.
- If you find a nest in your wall void, do not seal the hole before treatment. Wasps will find another way out and it will likely be an interior exit/entrance.
- Yellow jacket bait traps may not be effective in controlling large populations.
- If you can avoid the nest and it's not bothering anyone, leave the nest alone. The colony will die after the first hard freeze. Only the fertilized queens overwinter.

BRAND NAME OF WASP INSECTICIDE	Active Ingredient (% Toxicant)
Raid Wasp & Hornet	0.02% Prallethrin 0.05% Cypermethrin
Bonide Wasp & Hornet Killer	0.1% Tetramethrin 0.25% Permethrin 0.50% Piperonyl Butoxide
Bonide's Stinger Wasp & Hornet Foam Ortho Hornet & Wasp Killer	0.20% Tetramethrin 0.20% Sumithrin
Black Flag Wasp, Hornet & Yellow Jacket Killer Hot Shot Wasp & Hornet Spectracide Carpenter Bee & Ground-Nesting Yellow Jacket Killer Foaming Aerosol Spectracide Wasp & Hornet Killer	0.025% Prallethrin 0.01% Lambda-Cyhalothrin
Wilson One Shot Jet Foam Wasp & Hornet Killer	0.05% d-trans Allethrin 0.20% Permethrin