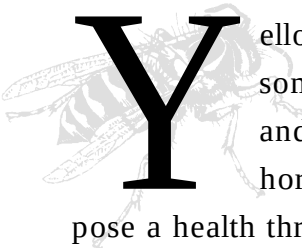
ALABAMA COOPERATIVE Extension SYSTEM

ANR-1134

ALABAMA A&M AND AUBURN UNIVERSITIES

Yellow Jackets, Wasps, and Hornets



Yellow jackets, some wasps, and some hornets can pose a health threat to humans because of their painful sting. These insects have smooth stingers as opposed to the barbed stingers found on bees. The smooth stingers allow them to sting more than once.

When stung, some people experience immediate pain, localized swelling, and redness. Other people may experience a systemic reaction such as respiratory problems, swelling beyond the sting, nausea, anaphylactic shock, or even death in very rare instances. If you experience any of these systemic symptoms, go to a medical facility immediately.

The following are some common yellow jackets, wasps, and hornets you may find and how you can control them.

Yellow Jackets

Yellow jackets (*Vespula* spp.) are about ½ to ¾ inch long and have black and yellow bands on their thoraxes and abdomens. They usually ground nest in areas such as old rodent burrows, beneath landscape timbers and heavy mulch, or in rock walls. They may also be found in the wall voids of homes.

Each year, the yellow jacket nest starts with one fertilized queen. In early spring, the queen emerges from her overwintering site and locates a suitable cavity of some sort to start a nest in. After the nest is constructed, she deposits her first batch of eggs. Once the eggs hatch, the queen forages for food to feed the larvae. The larval diet consists of a wide variety of insects. Yellow jackets are excellent predators of potential pest insects.

The larvae become pupae and then adults. These adults are sterile females. These females take over the job of foraging for food for the next batch of larvae. They also continue building the nest as the queen continues to lay eggs. The colony of yellow jackets can grow to thousands of individuals by the end of summer, peaking in August or September.

At the end of summer, eggs hatch into fertile males and females that mate. The males die shortly after mating. Recently mated females then search for an overwintering site during the fall to protect them during the winter. Next spring, the cycle starts over again.

As the yellow jacket's natural food supply begins to decrease during the fall, they tend to become more of a problem to humans. As the weather cools, we tend to picnic outdoors a little more. Yellow jackets will not hesitate to feed on our picnic foods (hot dogs, hamburgers, and soda) in order to fulfill their dietary needs for protein and carbohydrates. Yellow jackets can also become a problem around dumpsters and trash cans at public facilities.

Control Methods

Locate the nest during the day, if possible, and mark its location. Do your treatment at night. Yellow jackets are similar to people in that they "go home" at night. Do not shine a flashlight directly at the nest because you may startle the yellow jackets.

Use a dust formulation or at least 1 gallon of a liquid insecticide labeled for yellow jacket control. (For more information about insecticides, see Extension publication ANR-500B, *Alabama Pest Management Handbook—Volume 2*.) Gently puff the dust at the nest entrance, or thoroughly drench the nest with a liquid insecticide.

We recommend that you wear full protective clothing including a long-sleeved shirt, long pants, gloves, and a bee veil when attempting control.

Several traps are also available that may help you locate the source of the yellow jackets or simply trap the few that have become a problem. These traps can be purchased at many stores. The instructions may ask you to add a protein source (a meat) during the early summer or a carbohydrate source (fruit juice) during late summer and fall since the yellow jacket's nutritional needs change through the season.

In sensitive areas, such as public facilities or schools, empty and clean trash cans or dumpsters regularly to eliminate food sources. When possible, use trash cans that have lids or are otherwise closed.

Yellow jackets can become very aggressive if disturbed. Call a pest control professional for difficult yellow jacket problems.

European Hornet

The European hornet, *Vespa crabo,* is in the same family as the yellow jacket (family Vespidae). This hornet is large at almost 1½ inches long. It is brownish in color and has orange stripes. The European hornet feeds almost exclusively on live insects and is an excellent predator.

European hornets normally nest in wooded areas in tree hollows. However, nests can also be found in attics and wall voids. The colony may contain between 200 to 400 individuals. The life cycle is similar to that of the yellow jacket.

Although the European hornet is not as aggressive as the yellow jacket, its sting is potent. In addition to their sting, a common complaint about European hornets is that they girdle twigs and branches of trees and shrubs. This girdling can sometimes kill the plants. The hornets use the sap from the plants and plant fibers in constructing their nests.

European hornets become a problem during the summer and fall. At night, they fly to lights on porches, at campsites, and other places people frequent.

Control Methods

Wear full protective clothing as described for yellow jacket control. Locate the nest during the day, and treat at night as described above. The nest may be high in a tree and difficult to treat. In this case, use a pressurized container that can shoot a stream of insecticide. Some containers can spray up to 22 feet away. Use a liquid insecticide containing a pyrethroid such as resmethrin and pyrethins for outside treatment.

If the hornets are nesting in a wall void, puff a dust formulation into the void. Do not plug the hole right away. The hornets may try to chew through another place in the wall. A pest control professional may be able to collect the hornets from a wall void, using a vacuum cleaner, or may be able to treat the void with products not available to homeowners. Traps or baits that may work for yellow jackets probably will not work for European hornets because these hornets prey on live insects.

Bald-Faced or White-Faced Hornets

The bald-faced hornet, *Dolichovespula maculata,* commonly nests in trees or shrubs. These hornets belong to the same family, Vespidae, as yellow jackets and European hornets. Bald-faced hornets are black and white and about the same size as yellow jackets. These hornets can build nests up to about 12 inches in diameter. The nests are comprised of cells and a paper envelope made of chewed wood pulp (Figure 1).

Figure 1. Bald-faced hornet nest with characteristic paper envelope around the whole nest

Control Methods

The methods for controlling bald-faced and white-faced hornets are the same as those for controlling the European hornet.

Paper Wasps, Umbrella Wasps, and Red Wasps

These wasps are also in the family Vespidae but are in the genus *Polistes.* These wasps are easily recognizable by the nests they construct. The nests look like inverted umbrellas (Figure 2). The nest cells are visible from below, unlike the bald-faced hornet nest that has a paper envelope wrapping around the whole nest. Nests are built under eaves, fire escapes, decks, and ledges.

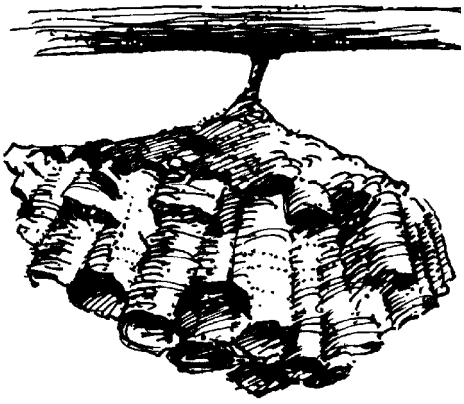


Figure 2. Umbrella wasp, paper wasp, or red wasp nest with characteristic open nest structure and visible nest cells

All the females in the nest have the potential to become the queen. The queen is usually the female who begins laying eggs and constructing the nest first. The other females then become subservient to her. If more than one female begins laying eggs at about the same time, the female who eats the eggs of the other while replacing them with her own eggs becomes the queen.

Control Methods

Since these nests are quite visible, control is easier than with ground-nesting species. Wear full protective clothing, and treat at night, using a pressurized liquid insecticide labeled for wasps and hornets. These products can be purchased at almost any department or grocery store.

Other wasps that homeowners may encounter include mud daubers, digger wasps, and cicada killers. These wasps generally do not warrant any control. They are all excellent predators and are considered beneficial insects.

Mud Daubers

These wasps are in the family Sphecidae. They are bluish black in color, are slender, and are about ½ to ¾ inch long. Mud daubers rarely sting. Their nests are clusters of mud (Figure 3) attached to structures such as the sides of buildings, under decks, on sheds, in attics, and on ceilings. The adult mud dauber collects spiders that she paralyzes and places in the brood chamber. The spiders become food for the emerging larval wasps.

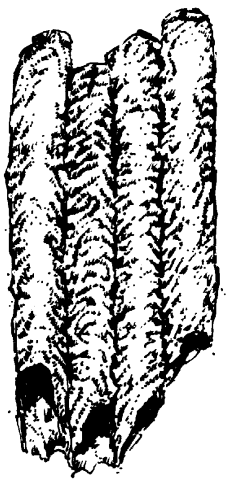


Figure 3. Mud dauber nest (The pipe organ mud dauber is common.)

Check nest chambers for holes before performing any control. If the nest chambers have holes in them, control is not necessary because the adult wasps have already left the nest.

Digger Wasps

These wasps are in the family Scoliidae. They are slender and about ¾ inch long. Digger wasps are easily recognized by their flight and nesting behavior. They fly over the lawn during the day looking for grubs. Because they kill they grubs, they are considered a beneficial insect. When a digger wasp finds a grub, it paralyzes it, digs a chamber in the soil, and lays an egg on the grub. The soil that is dug for the chamber appears on the lawn as a fist-sized mound. There can be a few mounds to hundreds of mounds in a lawn, depending on the severity of the grub problem. The wasp larva that emerges uses the grub as food. These wasps generally do not attack people.

Cicada Killers

These wasps are in the family Sphecidae and are very large. They can be almost 2 inches long. Adults are seen in July and August. They are solitary wasps that use cicadas as food. The wasp paralyzes a cicada, brings it back to the nest, and then the female lays an egg on the cicada. The emerging larva uses the cicada as food.

The cicada killer nest can be a burrow that is about 10 inches deep and 6 inches wide. There may be two cicadas in one nest.

Cicada killers can cause some lawn damage. They are not normally aggressive, but they can pack a potent sting if provoked. If control of these wasps is necessary, follow the procedures described for controlling yellow jackets.

Summary

Home control measures for controlling yellow jackets, wasps, and hornets can be effective, but because these insects can become a safety hazard to humans in certain areas, consider contracting the services of a professional pest control operator who can devise a control program that is right for you.

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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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