Yellowjackets

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<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>German Yellowjacket</td>
<td>Paravespula germanica (Linnaeus)</td>
</tr>
<tr>
<td>Eastern Yellowjacket</td>
<td>Paravespula maculifrons (Buysson)</td>
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<tr>
<td>Common Yellowjacket</td>
<td>Paravespula vulgaris (Linnaeus)</td>
</tr>
</tbody>
</table>

Yellowjacket Wasps

Yellowjackets (Family: Vespidae) are predatory wasps that occur throughout North America. The German yellowjacket first appeared in Ohio in 1975 and is now the dominant species in the state; the other species are natives. In the late summer (August–October), their food preferences change from proteins to sweets. At this time, yellowjackets are known to be persistent, unwelcome guests at picnics and other outdoor events, as they fly about scavenging for food, especially sugary foods and drinks. Large numbers of the wasps may be attracted to garbage cans, sweet beverages, fruit, flowery clothing, and perfume. Yellowjackets rarely cause structural damage to buildings, but they may build their nests in attic and wall voids. Their stings are painful and even dangerous if an allergic reaction occurs.

Identification

A typical yellowjacket worker is about ½-inch long with alternating black and yellow bands on the abdomen (the black and yellow patterns on the abdomen help separate various species). Queens are visibly larger, approximately ¾-inch long. The larvae within the nests are white and grub-like. Workers are often confused with honey bees; however honey bees are covered with dense hair and have flattened hairy hind legs used to carry pollen, while yellowjackets have hard, shiny, mostly hairless bodies. Wasps and hornets tend to fold their wings lengthwise while at rest and fly with their legs close to their bodies, while honey bees often fan their wings out slightly while feeding. Mouthparts of yellowjackets are well-developed for capturing and chewing insects with a tongue for sucking nectar, fruit, and other juices.

Life Cycle and Habits

Yellowjackets are social, living in annual colonies containing workers, queens, and males (drones).
Fertilized queens overwinter in hollow logs, under loose bark of dead trees, soil cavities, and other protected places. These queens emerge during the warm days of April and early May. After feeding on nectar and insects, she selects a nest site, often an abandoned mouse or rabbit burrow, but other secluded cavities work. She initially builds a small paper nest in which she deposits her eggs, individually, in brood chambers. The queen feeds the young larvae for about 18 to 20 days, which then pupate and emerge as worker-daughters that assume the tasks of the nest: gathering wood fibers to expand the nest size, foraging for food, caring of the queen and developing larvae, and colony defense. The sole duty of the queen is to lay eggs and expand the colony. Nests quickly reach a population of approximately 4,000 to 5,000 workers with 10,000 to 15,000 cells by August and late September. Adults feed primarily on items high in sugars and carbohydrates (fruits, flower nectar, and tree sap) while the larvae need proteins (insects, meats, fish, etc.). Adult workers chew and condition the captured insects or meat to feed to the larvae. Larvae in return secrete a sugary substance fed upon by the adults. The last generation produces new queens and males called drones that mate upon leaving the nest. The workers, drones, and old queen die at the onset of cold temperatures, while fertilized, new queens seek protected places to overwinter. Abandoned nests typically decompose and disintegrate during the winter or are occasionally reused by another queen.

**Nests**  
Nests are typically built in animal burrows, cavities formed in thick mulch piles, or other protected cavities such as rotted tree trunks, wall voids, and ceilings. Nests are constructed entirely of wood fiber mixed with wasp saliva and are completely enclosed, except for a small opening at the bottom. The nest contains many tiers of combs, sometimes 10 or more. Nests built in the open are usually constructed by bald-faced or yellow hornets, which have similar life cycles and habits of yellowjackets.

**Sting Prevention**  
Yellowjackets primarily sting to protect the nest, but they will also sting away from the nest, if they are threatened or restrained. Unlike honey bees, yellowjackets can sting repeatedly and they will often do so near their nesting site. It is wise to keep screens on doors and windows in good repair. Keep trash cans well covered and clean from spilled food. To reduce problems at picnics or when cooking outdoors, keep food covered and clear dirty dishes immediately. When picnicking, select a site that is well away from uncovered trash cans or dumpsters; sanitation plays a key role in reducing wasp activity. Keep beverages, especially fruit drinks, sodas, and beer, in covered cups or containers with lids. Check open cans before sipping as a wasp may have entered the can in search of sweets! Yellowjackets are also attracted to floral perfumes, hairspray fragrances,
and bright flowery clothing, so be mindful of these factors when going outdoors. They are also alarmed by musk oil-based perfumes, heavy body odor, and bad breath, as these smells appear to remind the wasps of skunk, raccoon, and bears that are predators of wasp nests! Watch where you step, as yellowjackets nests may be at ground level, especially in high grassy areas, and around mulched flower or ornamental plant beds. Be careful not to cut weeds or run the lawnmower over a ground nest, nor disturb a nest in a tree or eaves of the home. Any noise or disturbance can provoke painful stinging. Never swat at a yellowjacket flying near you—simply walk away. However, if you’ve disturbed an entire nest, protect your face and run! Avoid squashing a yellowjacket as an alarm pheromone is released, which alerts other yellowjackets to its location.

Treatment of Stings
The key to treating a yellowjacket sting is to act quickly. Put an ice pack on the area for 10 minute increments until the swelling is reduced. An antihistamine can be taken to further reduce swelling and itching and if necessary, aspirin or other common pain relievers can be taken for pain. If you’ve been stung more than ten times, or got stung in the mouth or around the eyes, you should seek medical attention. If you have had an allergic reaction to a yellowjacket sting in the past, or you experience difficulty breathing or swallowing, confusion or slurred speech, tightness in the throat and neck, or weakness leading to fainting, you should immediately seek medical attention at an emergency facility. Persons that have reacted severely in the past should ask their physician for an emergency sting treatment kit.

Control Measures
Traps (Homemade)
Trapping of adult workers often fails to reduce yellowjacket populations to acceptable levels. Yellowjackets have been shown to fly from 300 to 1,000 yards from their nest in search of food. Homemade traps are inexpensive and often as effective as the commercially available traps. A simple way to make a trap is to use a 2-liter soda bottle, cut the top off and turn it upside down, so the neck is inside the body of the bottle as an inverted cone. Add some fruit juice, jelly, syrup, or banana peels to the trap (or fresh meat during the spring), then fill the bottom with 2 inches of water with a few drops of dish soap (to break surface tension). Foraging workers will fly into the trap in search of the bait. They exhaust themselves trying to find an exit, then drown in the water.

Traps (Commercial)
There are several commercial non-toxic bait traps available for yellowjacket wasp control. It is important to know that no trap provides rapid knockdown of yellowjacket populations. For effective use, traps should be placed outdoors two or more days prior to the event. Keep in mind that most commercial traps are not attractive to German yellowjackets, which are the most common nuisances in Ohio.

Insecticides
Many insecticides are labeled for control. “Restricted Use Pesticides” can only be applied by a licensed pesticide applicator or trained service person. Control of social wasps (yellowjackets), although usually not difficult, has its element of risk of being stung. Because most foraging has ceased by sundown, it is best to attempt nest removal at early dawn because they are slow and sluggish after enduring the night’s cooler temperatures. Never shine a flashlight at the entrance of any bee or wasp nest, as they will fly toward the source of light. If applications must be made during the day, the use of protective equipment, such as gloves, hat, bee veil, coveralls, etc., will prevent stings from any foraging wasps. Goggles are recommended as the workers are known to squirt venom at animal eyes. It is highly recommended to hire a professional to kill and remove wasp nests!

Nests Below Ground (Outdoors)
Treat as soon as the sun begins to rise with insecticidal dusts. If using a flashlight, cover the lens with red cellophane paper since light will stimulate yellowjacket wasps to come out of their nests. Dusts should be puffed into the nest immediately followed by a shovelful of moist soil over the entrance hole to prevent escape. Do not cover the nest entrance during daylight treatment as returning workers will
try to protect the immediate area looking for the entrance. Some prefer not to cover the entrance hole either during the day or evening.

**Nests in Wall Voids**

The German yellowjacket frequently builds nests in the walls of structures. Once locating the entrance, quickly insert the plastic wand of an aerosol generator and release 10 to 30 seconds of material into the void. Immediately move away and DO NOT plug the entrance as disturbed wasps may enter the house or building. Disturbed wasps may enter the building even when the entrance is not blocked, so be sure that occupants are well away from the treatment area. An alternative is injecting an insecticide dust (registered for wasp control) into the entrance. A commercial plastic hand duster is the best tool for this type of application. A veil, goggles, and protective clothing must be worn if done during daylight hours.

Nests located on the second level or higher of a dwelling can sometimes be treated from the inside. Locate the actual nest position by listening with your ear to the wall or using a stethoscope. One can make a small hole (⅛-inch through the drywall with an ice pick or drill) and inject directly into the nest. Some may prefer aerosol formulations or dusts.

Sometimes queens may be found overwintering in homes. Fly swatters, pressurized contact sprays, or aerosols labeled for indoor use can be used. Usually, spraying indoors is of little or no benefit.