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YELLOWJACKETS (Family Vespidae)

Yellowjackets are wasps in the family Vespidae. There are 325 species in North America. Most are black with yellow, brown or white markings. This family includes the yellowjackets, paper wasps, hornets, potter wasps, and mason wasps. Yellowjackets are social insects. Their colonies consist of three castes: queens, workers (sterile females) and males. The females can sting, while the males cannot.

The four most commonly encountered yellowjacket species in Connecticut are:

1. Common yellowjacket, *Vespula vulgaris* (Linnaeus), range throughout the United States.
2. German yellowjacket, *V. germanica* (Fabricius), range throughout most of the United States except the southernmost states.
3. Eastern yellowjacket, *V. maculifrons* (Buysson), range in eastern United States.
4. Aerial yellowjacket, *Dolichovespula arenaria* (Fabricius), range throughout the United States.

Life Cycle: In the spring, a young inseminated queen builds a small nest made of chewed up wood fiber (cellulose). Nests

can occur beneath the soil surface, in tree cavities, building walls, or any protected cavity or overhang. She makes 30 to 55 cells and then lays a single egg into each cell (Fig. 1). After the eggs hatch, the queen feeds the developing larvae with nectar and insect prey. In approximately 30 days, the first 5 to 7 workers emerge and take over the work of gathering food and enlarging the nest. Subsequently, the queen switches to full-time egg laying.



Fig. 1: German yellowjacket queen building a nest in early spring

Yellowjacket populations increase throughout the summer until they peak at 1,000 to 4,000 individuals, depending on the species (Fig. 2). In the late summer, the social structure of the colony goes into decline as

new queens and males are produced. Mating occurs during nuptial flights. After the flight, the newly fertilized queens seek hiding places to overwinter. All other members of the population die off, either by a heavy frost or other natural causes. In the following spring, young queens establish new independent colonies and the life cycle is repeated as before. Nests are occupied for only one season.



Fig. 2: Mature aerial yellowjacket nest

Food: Yellowjackets are considered beneficial. As predators, they prey on many pest insects including blow flies, house flies and caterpillars. In one study, wasps in one colony collected 225 flies an hour. In another study, two wasps collected 20 grams of imported cabbage worms over three days.

Yellowjackets are not only predators, they are also scavengers. They collect various sweet and protein foods, as well as water, up to a mile from the nest. These insects forage as individuals and, unlike honey bees, do not communicate the location of a food source to other members of the colony. They locate food by means of olfactory or visual cues.

Suggestions on how to avoid attracting yellowjackets and being stung:

1. Keep garbage cans covered with tight-fitting lids, keep garbage cans away from picnic and meeting places, and wash garbage cans regularly.
2. When serving food outdoors, keep food covered when not being eaten.
3. Serve sweetened drinks in covered cups with straws. Check your food and beverage for landed yellowjackets before you eat or drink.
4. Clear away food items immediately after a picnic.
5. Eliminate unwanted water sources in gardens such as dripping faucets. Place birdbaths well away from the house.
6. Avoid going barefoot.
7. Avoid wearing hairsprays, perfumes, colognes, scented suntan lotion or brightly colored clothes outdoors.
8. Exercise care while working around leaf litter at margins of the yard. Nests are sometimes built nearby under the leaves.
9. Mow carefully. Be observant ahead of the mower in case there is a nest in the lawn.
10. Remain calm when a wasp hovers nearby or lands on you. Don't swat the insect. Yellowjackets rarely sting if they are left alone.

Medical treatment:

Yellowjackets do not lose their stingers when they sting, honey bees do. The Connecticut Poison Control has suggested the following for yellowjacket (wasp) and honey bee stings:

First Aid: When the stinger is left behind, as in the case of honey bees, speed of removal is important. Use the edge of a credit card or other stiff card to flick out the stinger or use tweezers if they are available. Then cover the sting with a cold compress. Discomfort will last for an hour or so. Baking soda, meat

tenderizer or other home remedies are less effective than a cold compress. After first aid has been administered, watch for serious allergic reactions. They may be:

- Swelling of the limb
- Breathing difficulty
- Rash or hives all over the body
- A feeling of impending doom

If any of these symptoms are experienced, seek immediate medical attention. The Connecticut Poison Control hot line is 1 (800) 222-1222. **It is advised that those with a history of allergic reaction to bee and/or wasp stings that they keep an EpiPen on hand and replace it every 18 months.**

Control:

Spraying individual yellowjackets will not control additional activity. Yellowjacket traps are commercially available and may provide some temporary control for short outdoor events. In order to fully control a yellowjacket problem, the nest must be located and treated. Common nesting sites include woodland edges, stone walls, shrubbery, trees, the interior and exterior of buildings, leaf litter, debris and lawns. You may expedite locating nests by patiently watching for flight routes. Once a nest has been found, do not disturb the colony. Yellowjackets can become extremely aggressive if disturbed. Mark the nest location with a bright marker so that the nest can be easily found at night. Do not plug the access hole. Never attempt to treat the nest during the day. Treating nests at night is recommended because yellowjackets have very poor night vision and are less active due to cooler night temperatures. Insecticidal dusts of carbaryl (Sevin) or rotenone placed in and around an underground nest entrance can be effective. Aerial nests can be treated with pyrethrum, permethrin, tetramethrin, or

resmethrin formulated as aerosols and baits containing carbaryl (Sevin). ***Read the manufacturers' recommendations carefully before treating the colony.*** Finding yellowjackets flying inside the home during the fall may indicate a nest in a nearby wall cavity. The wasp workers will be attracted to the warmer indoor temperatures as the weather outside cools. For hard to reach nest locations, especially in buildings, consider calling in a pest management professional for assistance.

Summary: Yellowjackets are common wasps found throughout the United States. They are considered beneficial insects and are both predators and scavengers. Wasps can become a problem in the summer months by stinging people. Knowing where nests are located and avoiding attracting yellowjackets can reduce the incidence of stings.