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Wasps &Yellowjackets

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Most wasp species are considered beneficial insects since they kill numerous flies, caterpillars, beetle larvae and other insects which are pests in urban and agricultural ecosystems. However, because of their propensity to nest near urban structures and their stinging ability, most people consider wasps to be a nuisance.

There are some 4,000 species of stinging wasps in the United States alone, and about 15,000 in the world. Most are solitary and inoffensive insects that use their sting to paralyze their insect and other small prey. Some wasps are social insects. That is, they live together in communities where they share food and cooperate in raising young. Other wasps are solitary and do not collaborate in this way. Each female makes a nest of some sort for her own young. She may nest close to others of her species, but except in rare cases she works alone.

In this publication we will discuss only those wasp species that are problems around structures and other places people are likely to frequent.

Wasp Stings

It is reported that at least 200 persons die each year in the United States as a result of anaphylactic shock following the stings of wasps and bees. This figure does not include deaths reported as heart attacks and heat strokes which actually may have resulted from stings. Nor does it include deaths in automobile accidents which may have been caused by wasps in cars.

Social wasps vigorously defend their nests when disturbed. Their powerful venom, a mixture of enzymes and protein, is injected by a needle-like projection from the tail end of the body, usually called simply “the stinger.” The sting may be scarcely perceptible or may cause almost unbearably severe pain. While the pain is usually localized at the site of the puncture, there may be various systemic effects, and some people develop allergies to the venom. Nearly 80 percent of all venom related deaths occur within 1 hour after a sting.

Yet, on the whole, the danger of wasps has been exaggerated. The vast majority, perhaps 90 percent of the known species, are solitary wasps that cause few problems. Their venom is quite different from that of social wasps, and seldom causes more than momentary pain. Also, solitary wasps are not aggressive and usually do not attempt to defend their nests.

Except in a few tropical social wasps, the stinger does not remain in the wound with the poison sac attached, as is the case with honey bee stings. Therefore, a single wasp can sting its victim repeatedly. Since the stinger is a modified ovipositor or egg laying tube, only the females are able to sting.

Social Wasps

Paper Wasps

Paper wasps are the wasps most noticed around homes and other buildings. These are slender, narrow-waisted wasps with long legs. There are three castes--the queen and males, which are produced only in late summer or fall, and infertile female workers. The queen is not discernibly larger

than the workers, as are yellowjacket queens. Paper wasps are 3/4 to 1 inch long and reddish-orange to dark brown or black in color. They often have yellow body markings.

These wasps build nests from wood fiber to form a single comb of hexagonal cells which are oriented downward. These nests are umbrella-shaped and suspended by a single filament. Unlike yellowjacket nests, they are never enclosed in an envelope. These nests are most noticeable on the eaves of houses, but also can be found in attics, garages, storage sheds, barns, shrubbery, trees, grass clumps, logs, under patios and inside pipes used as clothes line poles. The typical mature paper wasp nest contains 20 to 30 adults and rarely more than 200 cells.

Colony founding. Colonies are founded in the spring by inseminated, overwintered females. These foundresses are the late summer daughters of the previous year's queens. They have mated in autumn, then hibernated in groups or singly, secreting themselves in cracks and crevices of old logs, attics and barns. Males never survive the winter, but their sperm do in the sperm sac of the overwintering female. A queen thus has a constant supply of sperm without repeated mating.

In late summer, well before the onset of cold weather, the queen stops laying eggs and adds no new cells to the nest. But eggs, larvae and pupae continue to develop and the adult population continues to grow as more offspring emerge. When egg laying stops the colony begins to show signs of decline and eventually dies off. The following spring, the overwintered, mated queens emerge from hibernation and construct new nests. Paper wasps do not re-use nests from a previous year.

Control. Aerial nests of paper wasps can be easily controlled with aerosol pyrethroid products containing resmethrin, tetramethrin or permethrin. Products containing propoxur or chlorpyrifos may be used also. Some aerosols will propel the insecticides 10 to 40 feet or more. For best results, treat in the late evening when most wasps have returned to the nest. When spraying, stand well away from the colony and soak the nest thoroughly. Do not remove the nest until all the wasps are dead, which may require up to 2 days. Then the nest should be removed and discarded.

Yellowjackets

Yellowjackets are easily recognized but are often confused with paper wasps. Baldfaced hornets are also yellowjackets, but because people often view them differently, they will be discussed separately.

Worker yellowjackets are strikingly marked with black and yellow bands. The queens are one and one-half to three times larger than the workers and are marked with black and orange bands.

Yellowjackets construct their nests of a paper-like material consisting of wood fiber. Unlike paper wasp nests, they are completely enclosed in an envelope except for the entrance hole. In Texas, nest size may vary from a few inches to 6 feet or larger, and nests may contain up to 45 levels of combs and 20,000 adult workers.

Yellowjackets are primarily ground nesters, but also construct aerial nests. Subterranean nests may be found in gardens, flower beds, pastures, roadside embankments and elsewhere. Aerial nests are typically constructed in trees, under eaves, in wall voids of buildings, in open garages and storage sheds, on porches, in abandoned furniture and in other places that provide protection and are close to food and water. Because of their scavenging behavior, yellowjackets are a menace around parks, camps and suburban sites where people leave open food and discard garbage.

Yellowjackets forage to feed their larvae meat, especially insects and spiders. They also gather nectar, honeydew and other carbohydrates, but they do not store honey as do bees.

Colony founding. Queens over-winter under loose bark, in cracks and crevices and occasionally in attics or similar sheltered locations. They emerge during the early spring and build small paper nests in which they lay eggs. When the eggs hatch, the queen feeds the young larvae for about 18 to 20 days. After the first brood of workers reaches adulthood, the nest may rapidly expand up to a foot long or larger within a few days or weeks. Maximum colony size is attained in August or September. This is followed by the emergence of males and the next year's queens in October and November. These mate and the males die. The inseminated queens seek sheltered locations in which to overwinter. The nest may be abandoned. If so, it
rapidly decomposes and disintegrates during the winter. If the nest is not abandoned and the existing queen(s) and her workers continue to maintain it through the following year, it is termed a perennial colony. Annual nests are not re-used.

Control. If it becomes necessary to destroy a yellowjacket nest, wear protective clothing such as a bee suit or hire a professional pest control operator. A single sting from an alarmed yellowjacket can excite other yellowjackets to attack, resulting in multiple stings. The best time for control is after dark when foraging activity has ceased and most workers are in their nest. Use a red light to locate the nest en-trance, since red light cannot be seen by wasps. Underground colonies are easily killed by pouring an insecticide product containing propoxur into the entrance hole or dusting it with carbaryl 5 percent dust. Workers that return to the nest later are killed by the insecticide. Aerosol insecticides containing resmethrin, tetramethrin, allethrin, propoxur or chlorpyrifos are convenient and effective products for controlling subterranean and aerial colonies. To treat aerial nests, spray directly into and around the entrance hole(s). Aerial nests built in wall voids can be sprayed with propoxur or chlorpyrifos. Two or more applications at 7- to 10-day intervals may be required to obtain complete control. Where the nest is not easily accessible and rapid control is desired, as in wall voids, storage sheds, stored furniture or underground, treat with total release aerosols containing either permeth- rin, tetramethrin, cyfluthrin or resmethrin. To be effective, the nest area should be covered and completely sealed off (preferably with clear plastic sheeting) before treating. Use duct tape on solid surfaces to seal around the edges of the plastic and other openings where the pesticide vapor could escape.
On the ground, the plastic sheeting can be tacked with pieces of U-shaped, 10-inch coat hanger or similar wire, or the edges can be sealed with sand. Be careful not to disturb the nest. Insert the required number of total release aerosol containers (see the label) under the plastic and leave at least 12 inches clearance between the plastic and aerosol container. Wait 15 to 20 minutes before uncovering the nest, or until all the yellowjackets are dead. Remove and discard the nest.

Hornets

The baldfaced hornet is the only "hornet" reported in Texas. It is actually a member of the yellowjacket family. Baldfaced hornets are large (up to 3/4 inch long) and black with white markings, particularly on the front of the head. They construct an inverted, pear-shaped, enclosed paper carton nest which can be up to 3 feet long. The grayish to brownish nest has two to four
horizontally arranged combs and an entrance hole at the bottom. Nests usually hang in trees, but may be attached to the sides of buildings. A mature colony may contain from 200 to 400 adults. Their sting can be intensely painful.

When attempting to control baldfaced hornets, always wear protective clothing such as a bee suit or hire a professional pest control operator because the hornets are likely to attack. Sprays containing

propoxur, dichlorvos or chlorpyrifos should be directed into the nest opening. The entire nest should be soaked. Insecticide products containing synergized pyre-thrins and a
rapidly volatilizing organic solvent, such as Wasp Freeze®, can be extremely useful; in addition, hornet and wasp sprays
containing pyrethroids such as tetramethrin and permethrin are effective. Hornet nests high in trees or in other remote locations where they pose no threat to humans should be left unharmed.

Solitary Wasps

Cicada Killers

This large insect is 1 inches long, rusty red on the head, thorax and wings and striped with black and yellow on the abdomen. These wasps are a nuisance in landscapes during times of the year when cicadas are present in shade trees. Cicada killer wasps appear formidable because of their size and behavior. Male cicada killers cannot sting, but will buzz very near
humans. Females will not sting unless handled, but sometimes painfully sting people who are working on lawns or step on their nests bare-footed. Female cicada killers dig galleries in lawns, gardens or flower beds, where they lay eggs and provision the young larvae with paralyzed cicadas. This nesting activity may damage lawns or vegetable gardens. Control is rarely warranted
for this otherwise beneficial insect. When control is necessary, sprinkle about 1 tablespoon of carbaryl dust into the burrow and tamp the en-trance shut with your foot.

Mud Daubers

These wasps build small, tube-like nests of mud under eaves, in attics and under the roofs of storage buildings. As they develop in the mud tubes, the young larvae are generally fed spiders, including the poisonous brown recluse. Adult mud daubers are 3/4 to 1 inch long and vary in color from dull black with bright yellow markings to blackish or iridescent blue-black. They
have longer, more slender waists than most other wasps. If necessary, mud daubers can be controlled by soaking the nest and its immediate vicinity with a carbaryl, propoxur or diazinon spray. Aerosols containing synergized pyrethrins, resmethrin, permethrin or propoxur also are available. Or, mud dauber nests can be simply removed by hand with a putty knife, as the attending female will not defend her nest. Even when insecticides are used, it is a good idea to scrape the nest away and dispose of it to prevent other insects from being attracted to it.

Importance of Sanitation

The proper management of garbage denies scavenging yellowjacket workers a ready source of food for developing larvae. Therefore, yellow-jacket populations can be reduced by removing garbage frequently and keeping tight lids on all trash receptacles. To further reduce both yellowjacket and fly problems, attach a dichlorvos-impregnated resin strip (Vapona® or No-pest Strip®) inside the garbage can lid.

Poison bait formulations have been developed to control scavenging yellowjackets, but these are neither commercially available nor known to be effective against Texas species. Although a commercial trap is available, this is not an effective control technique for the homeowner.

Insecticide label clearances are subject to change and changes may have occurred since this publication was printed. The pesticide user is always responsible for the effects of pesticides on his own

property, as well as problems caused by drift from his property to that of others.

ALWAYS READ AND FOLLOW CAREFULLY THE INSTRUCTIONS ON THE PESTICIDE LABEL.

For more information on insecticide products used to control wasps and yellowjackets, refer to B-1373, "Home and Landscape Pests," available from your county Extension office.

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