

IPM for Stinging Bees and Wasps



Introduction

Most stinging bees and wasps are beneficial and should be preserved unless they pose a direct hazard to humans. Wasps are predators and scavengers, helping to control pests and recycle organic materials. Some, including the honeybee, are important pollinators essential for the propagation of plants, including many agriculturally important crops.

Despite their many benefits, stinging insects can sometimes pose a hazard and it may become necessary to control them. Insect stings probably injure more people each year than all other venomous animals combined.

There are differences in the potential hazard posed by different species. In general, the species that are social and build large colonies and nests are much more aggressive than solitary species.

Since bee stingers are barbed, the bee is effectively eviscerated when it stings so bees can sting only once. It is important to recognize the differences between species in determining how dangerous the situation is and when taking steps to control the problem.



Photo: Jim Kalisch

Figure 19-1. Yellowjacket wasp

Biology and Identification of Specific Stinging Wasp and Bee Species

Wasps and bees can be classified as solitary or social depending on whether they live alone or in colonies. Solitary species such as cicada killers, carpenter bees, digger wasps, and mud daubers use their stingers to subdue the insects and spiders upon which they prey. These insects are normally quite docile and rarely attack people.

On the other hand, social bees and wasps such as yellowjackets, paper wasps, bumblebees and honeybees use their stingers and venom in a defensive manner. When forced to defend themselves or their nests, they often will attack the intruder in large numbers. To help distinguish between the various bee and wasp species, see Table 19-1.

Social Species

Yellowjackets

Yellowjackets feed on insects, spiders and a variety of food items. They are medium-sized, stout-bodied, and black with bright yellow bands (Figure 19-1). Yellowjackets construct globular paper nests, usually in underground cavities. Favorite nesting sites include rodent burrows, compost piles, wood piles and wall voids. Occasionally, these wasps will build aerial nests in garages, crawl spaces or other enclosed areas. Nests are built of paper made by stripping wood fibers from trees, fences, garden stakes and other wooden structures. The combs are built in tiers and are surrounded by an outer paper covering.

Yellowjackets are highly aggressive wasps and can be a serious threat to people because one wasp can sting a victim repeatedly. When

Table 19-1. Distinguishing Yellowjackets, Wasps, and Bees.

	Appearance	Habits	Nests	Feeding Behavior
Bees	Hairy, stout bodies with thick waists; adults are winged	Noisy flight; sting mainly while defending nest; foraging workers seldom sting	In hives, trees, or buildings	Collect pollen and nectar, feed pollen to young & share food with other adult bees
Wasps	Bodies vary; all winged	Colorful, rapid fliers; solitary & social varieties	Aerial or ground nests; can also be in structures	Scavengers and/or predators
Solitary wasps	Thin- or thick-waisted	Visit flowers & other vegetation; relatively docile	In mud or in holes in ground	Predators; provision nests with prey for young to feed on
Yellowjackets	Stout, colorful	Rapid fliers; aggressive; individuals capable of inflicting multiple stings; social in large vigorously defended colonies	Multi-layered, papery nests mostly in ground, although some aerial or in structures; nests have an outer papery covering called an “envelope”	Mostly beneficial predators but scavenger species can become pestiferous
Paper (umbrella) Wasps	Long bodies with thin waists, long dangling legs	Social; search vegetation for prey; visit flowers for nectar; not particularly aggressive	Single layered, papery nests without an envelope; attached to fences, eaves, boards, branches; shaped like an umbrella	Beneficial predators; feed prey to developing young in nest

Figure 19-2. Disposable yellowjacket trap made from a 2-liter pop bottle.

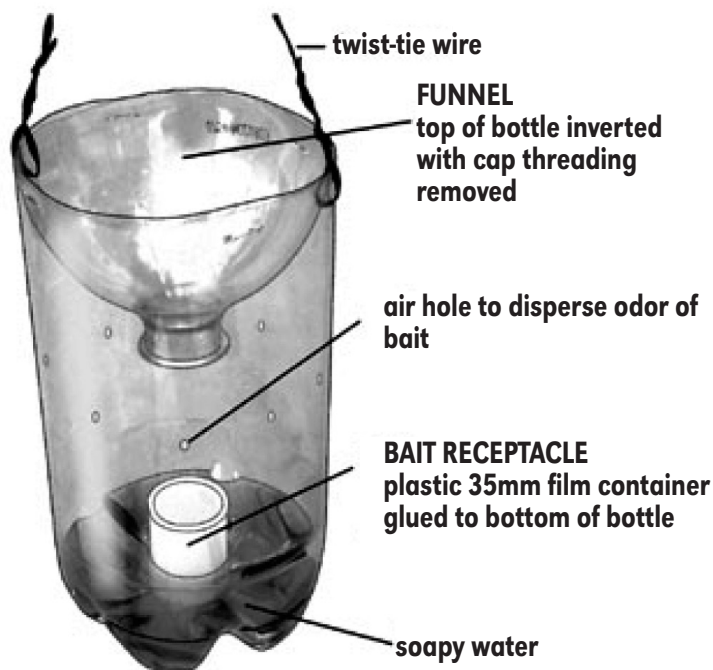




Photo: Jim Kalisch

Figure 19-3. Paper wasps on their nest



Photo: Jim Kalisch

Figure 19-4. Honeybee

yellowjackets are disturbed, give them plenty of room since they are capable of inflicting painful, multiple stings. If yellowjackets become excited and appear about to attack, do not panic. Do not make any sudden movements and retreat slowly and calmly from the area.

Yellowjackets are scavengers and are frequently found foraging in compost piles and garbage receptacles. Their activity can be discouraged in the vicinity of patios, parks, picnic and other recreational areas by covering all foods and disposing of wastes in covered containers. Turning compost piles regularly and placing insecticide-impregnated resin strips in the lids of garbage cans and dumpsters will help reduce the numbers of yellowjackets in these areas. Yellow jackets are highly attracted to over-

ripe fruit. Prompt removal of fallen fruit should help reduce the number of foraging insects.

One strategy to reduce the number of yellowjackets in an area is to employ baited yellowjacket traps (see Figure 19-2). Baits can be made from canned meats, tuna, or pet food, or can be purchased from most stores that carry insecticides. Traps should be hung in sunny locations around the periphery of the area to be protected.

Paper or Umbrella Wasps

Paper wasps are about 1 inch long, have a spindle-shaped body and are marked with a brown and yellow pattern (Figure 19-3). Paper wasps construct umbrella-shaped, single-layered nests with exposed cells. Nests may be built in trees and shrubs but

are frequently found under building overhangs, in attics, barns, garages, and sheds.

Nests are initiated by a single overwintered queen called the foundress. Other fertile females often join the colony later in the season. Colonies may produce up to 200 individuals by summer's end. These wasps are not overly aggressive and usually only pose a threat when their nests are disturbed; however, foraging wasps can cause considerable annoyance as they fly in and about building entrances. Knocking down a nest without an insecticide treatment is usually ineffective since these wasps will rebuild the nest in a short time.

Honeybees

Honeybees (Figure 19-4) may become troublesome when they swarm or build colonies near structures. Honeybees occasionally invade structures to establish a colony, building combs of wax containing honey, pollen and brood in wall spaces. Once established, a colony is difficult to remove because it usually requires structural modification of the building. To be effective, the honey, wax and bees must be removed or the site will remain attractive to other swarms. In addition, ants, carpet beetles, flies and cockroaches may find their way to the comb to feed and reproduce.

Several methods may be used to control honeybees once they are established in a building, but prevention is the best way to avoid the problem. Good maintenance, including painting, repairing or replacing rotted boards or broken brick and caulking, can prevent a colony from getting started. If a colony becomes established, call a local beekeeper who may be interested in remov-

ing the colony. Names of beekeepers can be obtained through your local UNL Extension Office or the Nebraska Department of Agriculture in Lincoln.

If the bees must be destroyed, apply an insecticide dust or spray in the evening when bees have returned to the colony and temperatures are cooler. Pyrethrins are particularly effective because they provide rapid knockdown. In many cases it is difficult to directly contact combs with the insecticide since they are often some distance from the building's point of entry. It is probably best to hire an experienced beekeeper or pest management professional to do the job. **CAUTION:** You should never use honey or wax from honeybee colonies that have been treated with an insecticide. Also, never attempt to kill bees in buildings with liquid petroleum, gasoline, or any other flammable material. The entire structure may be destroyed along with the bees.

Bumblebees

Bumblebees are large, robust bees covered with dense black and yellow hairs (Figure 19-5). They commonly reach 1 inch in length. Bumblebees usually are not overly aggressive, but they will sting if molested. Avoid flower beds where adult bumblebees are likely to forage. These bees most commonly become a problem when they establish nests close to a sidewalk or near building foundations.

Solitary Species

Cicada Killers

This is the largest wasp species in Nebraska. They are up to 2 inches long and are boldly marked with yellow stripes on a black body (Figure



Photo: Jim Kalisch

Figure 19-5. Bumblebee on a flower



Photo: Jim Kalisch

Figure 19-6. Cicada Killer

19-6). Cicada killers are most abundant during midsummer when their prey, the cicada, is active. Cicada killers attack, sting and carry paralyzed cicadas back to underground burrows. These burrows can be found near walks, driveways and retaining walls and can usually be identified by the presence of fresh soil around the 1/2-inch entrance hole.

Once the paralyzed cicada has been dragged underground, the wasp deposits an egg on it. Upon hatching, the wasp larva uses the cicada as a source of food. These wasps are normally quite docile and are unlikely to sting unless provoked; however, if nesting activities become a problem, infested areas can be treated with an insecticide.

Mud Daubers

Mud daubers are medium-sized (1-1.5 inches) wasps with the front portion of the abdomen being long and highly constricted, giving them a "thread-waisted" appearance (Figure 19-7). In Nebraska, two common species are the blue mud dauber and the yellow and black mud dauber. Both species feed almost exclusively on spiders. These wasps do not defend their nests and are unlikely to attack people. Mud dauber nests are constructed of mud or clay and often are found attached to the walls or under the eaves of buildings.

When emergence holes are present in nests, the wasps have completed their life cycle and are no longer present. These nests can simply be removed and discarded. Nests without holes should be removed and crushed.



Photo: Jim Kalisch

Figure 19-7. Mud Dauber

The destruction of nests discourages infestations by dermestid beetles and other insect scavengers that could move to other items.

Carpenter Bees

These large, dark-colored bees are similar in size and appearance to bumblebees. They can be distinguished from bumblebees by their hairless abdomen. Carpenter bees make their nests in beams, rafters and other wooden structures. Although extensive tunneling by carpenter bees can cause some damage to timbers, control is rarely necessary. If activity is unusually heavy, frequent painting of infested areas and/or application of insecticides to tunnels under construction will kill the adult bees and prevent further damage.

Digger Wasps

Digger wasps are beneficial. They appear in the morning and fly over turf in search of beetle grubs or the larvae of other insects. These wasps generally do not sting unless handled or molested. If control is desired, treat the lawn with a liquid or granular insecticide. These treatments will also reduce turf insect populations and, therefore, foraging by digger wasps.

Stings

Insect stings are the leading cause of human fatalities from venomous animals, and many of these stings are inflicted by yellowjackets. The people who die from yellowjacket or bee stings are normally individuals experiencing dozens to hundreds of stings, or those who suffer severe allergic reactions to the inflammatory substances in the insect venom. These allergic reactions include soreness and swelling, not only at the site of the sting, but also on other parts of the body that may be distant from the site. Other symptoms include fever, chills, hives, joint and muscle pain, and swelling of the lymph glands and air passageways. In severe cases, the individual may suffer a sudden drop in blood pressure and lose consciousness. Individuals who experience allergic reactions have become sensitized over time by previous stings so this hypersensitivity is found more often in adults than in children.

Ordinary reactions to stings include localized pain, redness, itching and swelling for hours to a day or two after the event.

See Box 19-A for first aid treatment for yellowjacket stings.

Nest Disturbance

Most bees and wasps that are foraging for food will not sting unless physically threatened in some way, such as being crushed or caught in a tight place. However, if social bees and wasps feel their nest is in danger, they will vigorously defend it. While most bees and wasps will defend their colonies, yellowjackets are more sensitive to nest disturbance and more aggressive in their defense. Disturbing the nests of these insects can result in multiple stings. This can occur when someone accidentally steps on an underground nest opening or disturbs a nest in a shrub or in a building. Sometimes merely coming near a nest, especially if it has been previously disturbed, can provoke an attack.

Bees and wasps nesting underground can detect vibrations of above-ground activities. Thus, mowing lawns or athletic fields can be hazardous, and operators may need to wear protective clothing when mowing during the late summer season when colonies are large. Appropriate clothing should include a bee suit with a protective bee veil or, at the very least, a veil and wrist and ankle cuffs taped or carefully tied to keep the insects out of sleeves and pant legs. A heavy sweatshirt can also be protective.

It can be very frightening to be the victim of multiple bee or wasp stings. The first response may be to run away, but since it is rarely possible to outrun the insects, running will only make the situation worse by exciting the insects even more. The best strategy is to back slowly away from the colony until you are at least 6 to 8 feet away.

Box 19-A. Avoiding and Treating Stings

Children should be taught to stay calm when confronted by a foraging yellowjacket. Impress upon them that sharp, jerky motions will frighten wasps and make them more likely to sting. Stillness or slow, gentle movements, which can be described to children as “moving like the swaying branches of a tree,” will greatly decrease the possibility of being stung. Slowly and carefully brushing off a wasp that has landed on someone or waiting until it flies off is better than hitting or constraining it since aroused wasps will sting. It is important to avoid smashing them because when crushed, they give off a scent that can cause other yellowjackets to attack.

If soft drinks or fruit juices are being consumed on the facility’s grounds where there are many yellowjackets, warn people to look into their cups or cans before each sip because someone can accidentally drink a wasp and get stung in the mouth or throat. Tell them not to panic if they find a wasp taking a drink. They should wait patiently until the wasp leaves by itself and place a napkin or similar barrier over the cup between sips. You can also use a straw for drinking or place the drink in a paper bag and poke a hole through it for the straw. Alternatively, eating and drinking outside can be prohibited during yellowjacket season.

Gardeners or custodians should wear protective clothing when mowing grass where underground nests are suspected.

First Aid for Stings

- If the sting is to the throat or mouth, medical attention must be sought immediately because swelling in these areas can cause suffocation. Dial 911 immediately and give the victim an ice cube to suck.

For hypersensitive individuals

- Anyone who is hypersensitive or is showing respiratory reactions, dizziness, or color changes should be taken to a doctor immediately. Some facilities may also have an emergency kit containing pre-loaded syringes of epinephrine for use with hypersensitive individuals. An antihistamine such as diphenhydramine (e.g., Benadryl) can stop or slow symptoms, but it must be given immediately.
- Keep the affected part down below the level of the victim’s heart.

For all others

- Wash the area around the sting with soap and water and apply an antiseptic. Washing can help remove the protein venom from the wound that will help reduce the pain and swelling from the sting.
- As soon as possible, treat the sting either with ice contained in a cloth or plastic bag, commercially available products for easing the pain of wasp or bee stings, or a paste of meat tenderizer mixed with water. Ice will help reduce the swelling, and the commercial products will relieve pain as well as swelling. Meat tenderizer works by breaking down the venom, thus reducing swelling and pain.
- Antihistamines given every few hours, according to label directions, can also prevent pain and swelling.
- Have the victim rest and do not administer sedatives such as alcohol.

It is important to educate children about the beneficial role of bees and wasps (they are important pollinators or feed on numerous pest insects) and to remind them of ways to avoid being stung. Since problems with bees and wasps, especially yellowjackets, are most common in late summer and fall, teachers should provide this information at the beginning of the fall term. See Box 19-A for tips on avoiding stings.

Detection and Monitoring

If there is a chronic problem with bees or wasps around places where people frequent, such as outdoor play areas, athletic fields, or parks, it is a good idea to inspect the area carefully to locate the nests. Nests can be found in the ground, under eaves, and in wall voids of buildings. Ground nests are frequently (but not

always) located under shrubs, logs, piles of rocks, and other protected sites. Entrance holes sometimes have bare earth around them. Watch for wasps and locate nest openings in the ground or in buildings. They will be most active on warm sunny days.

Management Options

Since yellowjackets are some of the most aggressive stinging insects,

Box 19-B. Tips on trapping yellowjackets and other wasps in a Homemade Cone-Type Fly Trap

Yellowjackets can be caught in a cone-type fly trap (Chapter 11, IPM for Flies, includes bait recipes and plans for making such a trap). The following tips will help improve yellowjacket trapping:

- Use this trapping method where no one can gain access to the traps. Mix the fly bait according to the instructions in Chapter 11 of this manual.
- Set up the flytrap with the fly bait in the area where the yellowjackets are a nuisance.
- If after a day or two in one spot the trap is still attracting only flies, move it to a new spot around the perimeter of the nuisance area.
- If your trap doesn't catch yellowjackets, try switching to a sweet bait such as fruit punch, jam, or grenadine. A recent study suggests Mountain Dew is attractive to yellowjackets.

NOTE: To avoid being stung, you should replenish the fly bait or move the trap in the cool parts of the day — early morning or late evening. To kill everything in the trap before emptying, put the trap into a large plastic garbage bag and seal the bag. Place the bag in direct sunlight for several hours or in a freezer overnight. You can also tie the bag loosely to the exhaust pipe of a gasoline engine and run the engine for a minute or two.

we will focus on their management here. The objective of a yellowjacket management program should be to reduce human encounters but not to eliminate them from the entire area since most are beneficial predators. The two most productive and least environmentally destructive ways to do this are to modify the habitat to reduce access to food in the vicinity of human activities and to use physical controls such as trapping and nest removal.

Area-wide poison-baiting should be used only as a last resort when other methods have failed, and stings are frequent.

Physical Controls

Habitat Modification

Garbage cans around structures should have removable domed tops with vertical spring-loaded swinging doors. The cans should be emptied frequently enough to prevent the contents from impeding the closure of the lid. The lids and cans should be periodically cleaned of food wastes. Disposable liners can be used and replaced when soiled or damaged.

When these practices are not followed, garbage cans become a food source for all the yellowjackets in the area. With a large number of wasps around the cans, people become afraid to get close enough to place

garbage all the way inside, and spilled food attracts more wasps.

Dumpsters should be cleaned frequently by washing them with a strong stream of water. If the dumpster service company has a cleaning clause in their contract, make sure it is enforced.

To limit yellowjacket infestations inside buildings, repair windows and screens and caulk holes in siding. Building inspections for wasps can be done at the same time as inspections for other pests such as rats, mice, termites, etc.

Trapping

Trapping with a sturdy trap and attractive bait can significantly reduce yellowjacket numbers if a sufficient number of traps are used. There is a variety of traps on the market. In general, cone-type traps are more useful for long-term (many weeks) trapping because it takes longer for the wasps to find their way out of the trap. In some places, unbaited yellow sticky traps (like those used to catch whiteflies) affixed to fences near underground nests have provided sufficient control to protect people from stings.

When traps are full, they can either be placed in a freezer for a day to kill the yellowjackets or enclosed in a heavy-duty plastic garbage bag and placed in the direct sun for several hours. A third way of killing the wasps is by submerging the traps in a bucket of soapy water until the wasps drown.

A homemade, cone-type flytrap can be used to catch yellowjackets simply by using the captured flies inside the trap as bait (see Chapter 11 for a discussion on how to catch flies). The

yellowjackets enter the trap to get the flies and become trapped themselves (see Box 19-B for tips for this kind of trapping). You can also try using baits such as dog food, ham, fish, and other meat scraps, or, toward the end of the warm weather, sugar syrups, fermenting fruit, and jelly.

Take care to place traps out of the everyone's reach as much as possible; however, the traps should be placed near the nest if it can be found, and/or near the area where the yellowjackets are troublesome. In schools or child care centers, teachers can be instructed to make a short presentation on the purpose of the traps to satisfy the curiosity that students will undoubtedly have. Show students the traps, explain how they work, and try to impress upon them the importance of the traps in maintaining the safety of the playground.

The traps should be out only during the period that wasps are a problem, usually late summer and early fall. When the traps are taken down for the year, they should be cleaned with soap and water and stored.

Nest Removal

A nest can be destroyed through physical removal (vacuuming) or by using a pesticide (see "Chemical Controls"). Either way, care is essential because any disturbance around a nest can cause multiple stings. It is best to have a professional pest management professional or other person experienced with these techniques remove the nest, and it should be done at night when wasps are in their nests. When illumination is needed, use a flashlight with the lens covered with red acetate film so it will not attract wasps. Adequate protective clothing (see Box 19-C) and proper procedure can minimize problems and stings. People who

Box 19-C. Protective Clothing for Nest Destruction

It is important to wear protective clothing when removing wasp nests. Complete body coverage is essential because yellowjackets and other wasps can find even the smallest exposed area. Use clothing made for beekeepers. This includes:

1. A bee veil or hood that either contains its own hat or can be fitted over a light-weight pith helmet or other brimmed hat that holds the veil away from the head. A metal-screen face plate that extends around the head is a desirable feature. Check the veil carefully for tears before each use.
2. A bee suit or loose-fitting, heavy-fabric coverall with long sleeves. This is worn over regular pants and a long-sleeved shirt to provide extra protection from stings.
3. Sturdy high-topped boots with pant legs secured over the boots with duct tape to prevent wasps from getting into trousers.
4. Gloves with extra-long arm coverings so sleeves can be taped over them to protect the wrists.

Box 19-D. How to Destroy Nests Using Pesticides

Application of pesticides to bee or wasp nests should be made in the evening or early in the morning, and the pest management professional should always wear protective clothing (see Box 19-C).

Aerial Nests

1. If necessary, use a pole-pruner to trim branches away from the nest. Be extremely careful if you do this.
2. Using a ladder, climb near enough to the nest to squirt a half-second blast (no more is necessary) of aerosol pyrethrins (0.3 percent or 0.5 percent) around the nest entrance hole to kill the guard wasps.
3. Cover the nest with a large, heavy-duty, black plastic garbage bag and cut off the branch from which the nest is hanging or cut the nest off the branch.
4. On a sunny day, twist the top of the plastic bag, fold the twist over and secure with a twist tie. Leave the bag in the sun for 2 or 3 hours to kill the wasps. On a cool or cloudy day, you may need to use insecticide to kill the wasps. Gather the top of the plastic bag together, insert the nozzle of the aerosol pyrethrins (0.3 percent or 0.5 percent), and squirt in another half-second blast. Do not over-treat. This small amount of pyrethrins is enough to kill the wasps.
5. Dispose of the bag in the garbage.

are sensitive to wasp stings should not attempt control procedures.

Vacuumping

We do not recommend vacuuming out entire nests unless it is done by a professional experienced in handling stinging insects.

Vacuumping can be particularly effective where nests occur in wall voids, in emergencies where nests have already been disturbed, and in environmentally sensitive areas where nests should not be treated with insecticides. Use a lightweight, powerful vacuum with a removable bag. Before the bag is completely full of wasps, vacuum up 2 tablespoons of cornstarch to incapacitate the insects. Leaving the motor running, detach the hose from the canister to reveal the opening in the vacuum bag. Stuff this opening with newspaper, paper towels, or a rag. With the motor still running, open the canister and tape over the bag opening with duct tape. With the motor off, take out the bag and place it inside a cardboard box. Seal the box and place it in a freezer at least overnight.

Before vacuuming an underground nest, check for secondary entrance holes (these can be identified by the wasps flying in and out) in a 40 to 50 foot area around the main opening. If these secondary entrances are not covered with a good quantity of soil before vacuuming begins, they will provide outlets for angry wasps.

Vacuumping the nest is a job for two people, both covered with protective clothing. While one person operates the vacuum, the other excavates the nest with a trowel. The vacuum operator does not actually insert the hose into the nest; instead, the wand is positioned 3 or 4 inches away from

the nest opening to suck in yellow-jackets as they fly in and out. When no more wasps are seen entering or leaving, the underground nest structure should be dug out, placed in a plastic garbage bag, and set in the sun for several hours.

Chemical Controls

If non-chemical methods alone prove insufficient to solve the problem, then integrating a pesticide into your management program may be warranted. Pesticides must be used in accordance with their EPA-approved label directions. Applicators that the facility hires must be certified to apply pesticides and should always wear protective clothing during applications. All labels and Material Safety Data Sheets (MSDS) for the pesticide products authorized for use in the IPM program should be maintained on file. Do not apply these materials when buildings are occupied. They should never be applied where they might wash into the sanitary sewer or into outside storm drains.

When an insecticide is considered necessary for the control of bees, yellowjackets, or other wasps, the best approach is to confine it to the nest itself. Anyone applying insecticides should use special clothing that protects against the chemical as well as against bees and wasps. This should include a respirator, goggles, coveralls, and rubber gloves, as well as a bee suit with a veil (see also Box 19-C). Apply insecticides in the evening or very early morning when bees or wasps are in their nests and cool temperatures reduce the insects' ability to move around. Of the main insecticides registered for use against bees or wasps, the following are most appropriate for use in sensitive environments.

Ground Nests

1. Check the area 40 to 50 feet around the nest before treating. If another entrance is found, use a half-second blast of aerosol pyrethrins (0.3 percent or 0.5 percent) to kill the guard wasps, stuff the hole with newspaper or paper towels, and cover it with soil.
2. Use a half-second blast of the aerosol pyrethrins to kill the guards at the main entrance.
3. Using a 4-way tip on the aerosol, spray inside the entrance hole for 5-10 seconds. Do not over-treat. Stuff the hole with newspaper or paper towels but do not cover it with soil.
4. After waiting a few minutes, remove the paper from the entrance hole. Use a bulb duster to apply silica aerogel plus pyrethrins to the interior of the cavity and the nest. A few pumps should apply sufficient material. If the nest is located some distance back from the ground opening, attach a length of PVC tubing to the bulb duster to extend its reach.
5. Insert a piece of coarse steel wool or copper mesh that has been treated with a light dusting of silica aerogel plus pyrethrins into the entrance hole. Any wasps trying to get in or out will chew on the steel wool and be killed by the insecticide.

Nests in Wall Voids

Wasp or bee colonies in wall voids can be eliminated using the same procedure detailed above for ground nests.

After removing the colony, make any necessary structural changes to prevent wasps from reinfesting the structure.

Pyrethrins Aerosol

Pyrethrins can be used to quickly knock down guard wasps at the nest entrance (See Figure 19-8) and to kill wasps in an aerial nest once the nest has been cut down and is inside a plastic bag. Only very small amounts of this material are necessary to kill the wasps and there is no need to use more (consult Box 19-D for the specific procedures for poisoning nests).

Silica Aerogel and Pyrethrins

Silica aerogel combined with pyrethrins is an effective insecticidal dust that can be used to destroy an underground nest or a nest in a wall void after the guard wasps have been killed (see Box 19-D). Silica aerogel is made essentially from sand and works by abrading the outer waxy coating on insect bodies. Once this coating is gone, the insects cannot retain water and die of dehydration.

Products with Components that “Freeze” Wasps

In emergency situations when nests must be destroyed in the daytime, it is helpful to carry one of these products as a safety precaution. These aerosol products are designed to project their spray a distance of 10 to 20 feet and contain highly evaporative substances that “freeze” or stun the wasps.



Photo: Erin Bauer

Figure 19-8. Pyrethrins can quickly knock down wasps at a nest entrance.

Do Not Use Gasoline

Many people pour gasoline into underground nest holes. This is a fire hazard, contaminates the soil, and prevents growth of vegetation for some time. It is a very dangerous procedure.

Avoid Area-Wide Poisoning

Mass poisoning is seldom, if ever, necessary, and is expensive due to the labor involved in the frequent mixing and replacement of bait. The effectiveness of bait mixtures is also questionable, since the baits experience considerable competition from other food sources attractive to scavenging yellowjackets.

Resources

For additional information on management practices and pesticide recommendations for controlling stinging wasps and bees, see the publications available from UNL Extension on-line at: <http://www.ianrpubs.unl.edu>.

Educational resource guides on wasps and bees are available at: <http://lancaster.unl.edu/pest/bees.shtml>.