

Prevention and Treatment of Nuisance Honey Bees Around Your Home

Introduction

Honey bees are important pollinators of agricultural crops and plants in natural landscapes. Their annual contribution to U.S. agriculture is about \$20 billion, and most of us appreciate the importance of honey bees and our native pollinators in providing food for our consumption. Of course, many of us also appreciate the sweet taste of honey that comes from their hives.

Honey bees can become a nuisance when they choose to live in hollow trees or other natural places in our yards or within the cavities and hollow spaces in outbuildings and houses. Honey bees sting to defend their nests, and the likelihood of them stinging people and pets dramatically increases when they live close to high-traffic areas around our homes.

Perhaps the most common phone calls about honey bees to MSU Extension offices every year are from frantic homeowners in fear after seeing a large mass of honey bees that has appeared around the home. These phone calls coincide with the spring season when honey bee colonies naturally divide to produce new colonies. Beekeepers call this period the swarm season.

The primary swarm season occurs from March to June, with peak activity in May for north Mississippi and 2 or 3 weeks sooner in the southern part of the state. Not all masses of honey bees that appear around the home have the same tendency to sting. This publication provides some key guidance on the relative risk of being stung from different types of honey bee colonies, describes ways of preventing honey bees from building nests within buildings, and outlines ways of removing or killing unwanted honey bee colonies.

Swarms versus Established Colonies

Colonies of honey bees experience seasonal growth cycles in which they slowly dwindle in size as older bees die during periods when few or no flowers bloom (midsummer and winter). These periods are followed by periods (spring and autumn) of intense flower blooms that support rapid colony growth. Honey bees need abundant amounts of pollen and nectar to feed bee larvae and to produce beeswax to make



Figure 1. MSU veterinary student Blake Campbell prepares to catch a typical swarm of honey bees. The swarm had been on the tree for about 2 days before the photograph was taken. The swarm was basketball-sized, and it hung on a shaded limb under a large tree. The bees were very gentle upon initial approach because they did not have a nest (built from wax combs) to defend. Honey bees are much more prone to sting when protecting a nest. (Photo by J. W. Harris)



Figure 2. A swarm of honey bees clings to a fence post while scouts seek a new cavity where the colony can start a new home. Swarms often land on structures such as mailboxes, bird baths, fences, charcoal grills, and automobiles. Swarms often hang in these locations for 3 to 5 days until they eventually move to a permanent nesting site. (Photo by J. W. Harris)

combs. Both processes are necessary for colony growth. The most explosive growth occurs in the spring, when the total number of flowers and the diversity of blooming plants is highest. A colony starting with 20,000 honey bees in January can grow to more than 60,000 bees by mid-April of a typical spring with good nutrition supporting that growth.

It is the rapid growth of bee colonies that induces them to swarm. A hollow tree may comfortably accommodate a colony with 40,000 bees, and the explosive growth of the spring produces a very crowded colony. It is the crowding of the nest that triggers swarming behavior. The crowded colony decides to split into halves. The old queen loses weight and leaves with about 60 percent of the worker bees to look for a new home, and this unit is called a **swarm**. In preparation to leave, the worker bees make special brood cells that become new queens. Typically, one young queen becomes the new egg-layer within the old nest site after the swarm has left.

Swarms fly relatively short distances from their original home before landing on a structure on which the workers will gather around the queen. Quite often, a swarm collects on a limb of a tree or bush (Figure 1); however, swarms will also land on other structures like mailboxes, picnic tables, bird baths, cooking grills, automobiles, pasture fence posts (Figure 2), and just about anything that might be available to them in or around your yard. One author of this publication (Harris)

once recovered a swarm from the wings of a small airplane in a hangar at an airport.

Swarms tend to land on structures that are at least partially shaded, and it is rare to see them continuously exposed to sunlight during the heat of the day. A typical swarm is the size of a basketball or larger. The swarm hangs on the stopover site for 3 to 5 days. Worker bees from the swarm search the area for a mile or so around the stopover site to find a new cavity in which to nest. Scout bees can communicate these locations to other members of the colony using dances (Figure 3). Workers read the dances of their sisters and investigate potential nest sites. Eventually, the entire colony chooses one of the potential sites and departs to move into the cavity to set up their new home.

A very important distinction to make about masses of honey bees that appear around the home is whether the group is a swarm or has produced comb and built a nest. The defense behavior or tendency to sting hinges on this distinction. A typical swarm without wax combs is extremely gentle and tolerant of people that might walk unwittingly near it. Honey bees sting to defend their nests, which consist of combs containing immature bee larvae and pupae and stored food like honey and pollen. Under normal circumstances, swarms do not build nests during the brief stopover period when looking for a new home; however, exceptions do occur.

Honey bees living on wax combs are many more times likely to sting than those from a swarm. The combs contain immature bees and stored food that need protection from



Figure 3. Worker honey bees eagerly watch the dance of a scout bee that has returned to the swarm surface to direct other bees to a potential nest site. Recruited bees will fly to investigate the potential nest site, and they will return and dance if the site is particularly appealing. Eventually, the swarm decides on one site from several choices. The swarm moves to live in the new cavity, and they will build new combs on which to raise new bees and store food. This dancing bee was photographed on the surface of the swarm shown in Figure 1. (Photo by J. W. Harris)

predators, and an unwitting human who walks by the **established colony living on the comb** will very likely be targeted and stung by bees defending the nest. Non-beekeepers tend to call all bee masses swarms, but this is an important distinction. Swarms are gentle; established hives will sting much more readily to protect their home.

Any group of bees that is living within the walls or other cavities of a house or building should be assumed to be a colony of bees with combs. They are no longer a swarm.

Typically, honey bees build combs within the hollow cavity of a tree or a building. However, sometimes a swarm that is exposed on a tree limb at a stopover site will build combs and start to grow a nest (Figure 4). This is uncommon; however, one of the authors (Harris) usually sees one or two colonies on exposed combs every year in the area around Starkville, Mississippi. Exposed-comb colonies are usually associated with periods of rain that delay a swarm from moving into a new nest site. It is as if the bees relent and build a nest where they are hanging and give up the search for a new cavity. Most of these exposed colonies do not live through the winter because they are vulnerable to attack from predators, and it is difficult for the colony to stay warm during severely cold weather.

There are three general types of bee colonies that a homeowner might encounter: 1) swarms without combs, 2) exposed colonies living on combs, and 3) colonies nesting within the cavities of buildings (such as voids of soffits, columns, walls, subfloors, utility conduits) or within a hollow tree in the yard. **The important point for a homeowner is**



Figure 4. An exposed colony of bees living on a comb nest constructed on a tree limb where they had landed during an initial stopover period to look for a new nest. This colony died because it was unable to stay warm during the cold of early winter. As soon as a swarm of bees has produced combs, the group is now a colony with an established nest. They are more likely to sting intruders than bees hanging on a swarm that does not have comb. (Photo by J. W. Harris)

to understand that swarms without combs are much less likely to sting than either exposed colonies on comb or those that have built combs inside of buildings.

What to Do About a Swarm

A key point is that swarms are temporary and usually leave on their own in a day or two. If a swarm has settled in an out-of-the-way place where the bees can be avoided and left undisturbed for a few days, one approach is to do nothing and hope it will go away on its own. This is one of the rare situations where this approach usually works. Although swarms of bees are generally much less defensive than bees in an established colony, they can be unpredictable. Some swarms (maybe 1 in 50) can be irritable and quite defensive, so people and pets should be kept well away from swarms until they leave the area.

It is possible that a swarm allowed to leave on its own may move to another location on your property where they are not wanted. You should consider this possibility when deciding how to deal with a swarm that has settled in the yard. If your home or outbuildings offer easy access to potential nesting sites, then a "leave them alone until they go away approach" may not be appropriate. In this case, you should consider whether the time and effort spent dealing with the bee swarm might be better spent in sealing and plugging potential access holes. After all, there will be other swarms sending out scouts to find suitable nesting sites.

Control Options for Swarms

What options does a homeowner have for dealing with swarms? As previously mentioned, most swarms will leave within a few days. However, swarms that are resting in a sensitive or high-traffic public area may have to be dealt with immediately.

The quickest and best solution to this type of problem is to contact a local beekeeper who is willing to come capture the swarm. However, this may be much more difficult than you might think. In past years, beekeepers were often happy to capture swarms to get more hives for their businesses. Now, many beekeepers are concerned about the potential for feral swarms of bees to be infested with diseases or mites that they do not want to introduce into their bee yards. Also, there are justifiable concerns about the liability of dealing with a swarm of bees in a heavily trafficked public area. Beekeepers can be liable for injury to people or animals if their actions in removing a swarm causes someone to get hurt.

In addition, swarms do not always settle in easy-to-reach locations, and many are simply more trouble than they are worth from the beekeeper's perspective. Still, some beekeepers are willing to capture swarms, and this is

certainly an option worth considering by a homeowner. A beekeeper who is willing to undertake the task will have the necessary knowledge and protective equipment. County Extension offices, local police, and fire departments sometimes maintain lists of local beekeepers who are willing to capture swarms.

Additionally, social media platforms like Facebook have beekeeping groups with members who will respond to capture swarms. There are several such groups in our state:

- Mississippi Beekeepers Association
- Mississippi Gulf Coast Beekeepers Association
- Red Creek Beekeeper Association
- Southwest Mississippi Beekeepers Association
- Northeast Mississippi Beekeepers
- Central Mississippi Beekeepers
- Mississippi Beekeepers
- Beekeepers of South Mississippi

You can ask to join such a group and then report your situation and request assistance. It helps beekeepers to decide on how to respond if you provide a cell phone photo of the swarm with a description of its location (for example, how high above the ground is it hanging). Quite often, beekeepers will respond quickly to such a request.

Another option is to call a local pest control company and have it destroy the bees. Nobody likes to kill honey bees, but sometimes it must be done. It may take a few phone calls to find a company that does this type of work, but those that do will have the appropriate protective equipment and insecticides and will usually be able to respond quickly. Some companies claim that killing nuisance honey bees is illegal, but this is not true. There are no federal or state laws protecting nuisance honey bees. It is just a strategy for the company to avoid telling a homeowner that they do not want to deal with bee problems.

Preventing Honey Bees from Nesting in Buildings

As with many potential problems, prevention is the best approach to honey bee nesting issues. However, expense and effort needed to “bee-proof” your home will depend on the quality of construction and age of the home. Older homes tend to be more porous than newer homes (Figure 5). The key to preventing the problem is understanding that honey bees want to live in protected cavities that they can access through a small opening. While they prefer entrance holes several inches in diameter, honey bees will use openings as small as one-fourth of an inch. These small openings



Figure 5. Here are several established honey bee colonies in cavities of a single house. A. Older homes tend to have more access ports for bees because of natural decay and settling of wooden structures that allows cracks and crevices to form. B. Staining of the wood identifies the entrance bees used to get behind the siding of the house to their colony in the hollow wall behind the façade. C and D. A colony of bees used this entrance to the tall, hollow columns of the porch. (Photos by J. W. Harris)

are commonly left around utility and plumbing conduits that enter the house (Figure 6), so just about any home can have places where honey bees can enter and gain access to cavities in walls, in soffits, or behind chimneys.

Prevent honey bees from nesting in your house by inspecting the outside of the structure to identify all potential access points to cavities. The openings can then be sealed with expandable foams or caulk, depending on the location of the holes. Additionally, some carpentry may need to be altered or improved. Areas of rotting wood that sags and allows access to voids will need to be repaired and sealed properly to prevent bee entry. This might be expensive; however, having to deal with an established colony of honey bees in your wall can also be quite expensive and much more of a headache than taking preventive measures.

Here are a few tips to consider when thinking about ways to prevent honey bees from becoming established in your home or outbuildings. First, it is a good idea to do a walk around the home at least weekly during the peak of swarm season (April to May) to intercept any colonies of bees that are attempting to become established in structures. It is better to find them early and eliminate the problem before the colonies become well established and grow large. However, before the swarm season, it is best to bee-proof your property as much as possible:

1. Check the screens on the vents of soffit covers to make sure that the mesh size is smaller than one-fourth inch. Replace if mesh size is larger. Number 8 hardware cloth is an excellent choice for replacement (mesh size is one-eighth inch).
2. Seal all spaces around conduits and pipes with insulating foam or caulk.
3. **Do not attempt to seal areas around the main power lines that enter your home. Avoid the risk of electrocution.** You may need to consult the power company for help if you find entry points around power lines and the external fuse boxes.
4. Be sure to close the flue in your fireplace because swarms will sometimes enter through the tops of chimneys. With the flue closed, bees are less likely to enter the interior of the home.
5. Cover or seal the hole on your water meter. Honey bees often move into the case that surrounds a water meter, even if it is embedded in the ground. Sometimes the solution is as easy as blocking the hole with duct tape or inserting a small stone to block the hole.
6. Sewer vents and heater vents can also be places that allow entry. These are more difficult to examine without getting on the roof, but they should be examined for proper sealing.

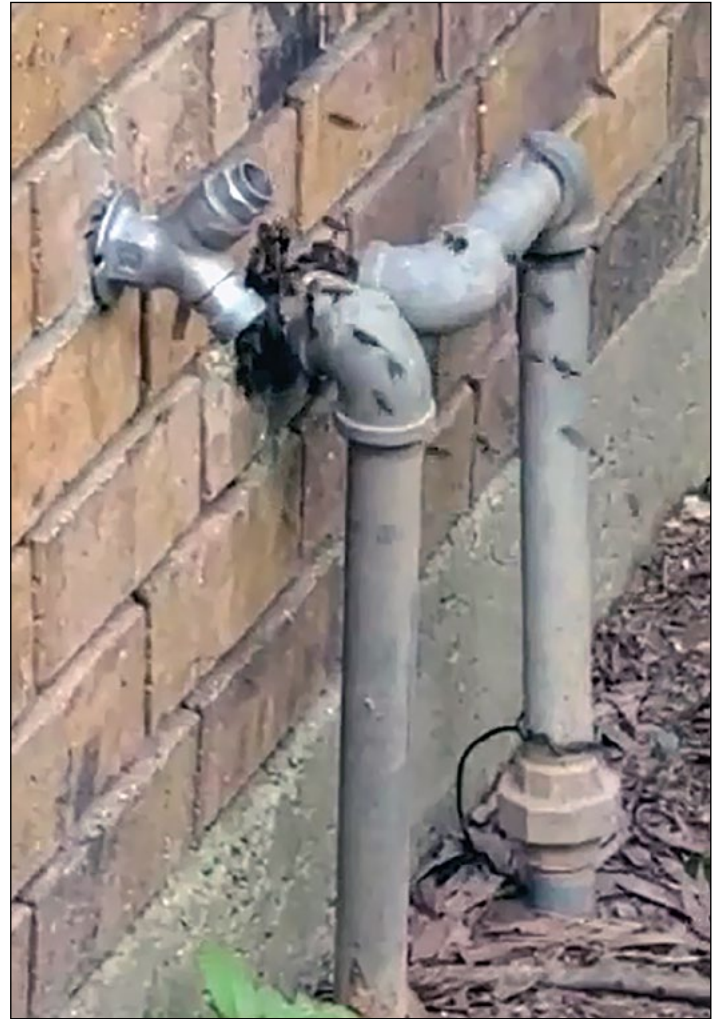


Figure 6. Honey bees enter their colony via a small opening in which a natural gas line enters the brick wall of a home. Bees prefer larger openings, but they will move through spaces as small as one-fourth of an inch to access a nesting cavity. (Photo by Rachel Smith)

7. Look for cracks or breaks in the siding of your house and repair them to avoid entry of honey bees behind the protective siding.
8. Look for holes in hollow porch columns and other wooden support structures and seal them. Many people do not realize that the top and bottom of many porch columns are open and accessible to honey bees.
9. Police your bird houses and take them down when the nesting season is over. Honey bees often become established in bluebird and wood duck nest boxes.
10. Frequently check any dog houses and look for honey bee nests inside them.
11. Many commonly used items around the yard may offer a hollow cavity for bees to nest. For example, many large and hooded gas grills can be invaded by honey bees if they are not covered to keep bees from accessing the vent holes.



Figure 7. Honey bees nest in the gas tank of an old truck that did not have a lid covering the entrance to the tank. The owner had to remove the bees before refurbishing the antique truck. (Photo by Andy Berry)

12. Check for entry points on all sheds and barns and seal them before the swarm season.
13. Remove or cover piles of debris or items that offer a cavity where bees can nest. Honey bees have been known to nest in discarded refrigerators, hot-water tanks, mailboxes, junked automobiles (Figure 7), and similar items. Try to think like a swarm of bees and remove or hide all potential nest sites.

What to Do About an Established Colony in a Building

When a colony of bees is nesting within walls of a building, that's a much more difficult problem than dealing with a swarm. A well-established colony of bees can reside in a cavity for many years. They will often produce new swarms during each subsequent year that they live in the building. Hence, the problem of a beehive in your walls can be a problem that keeps magnifying if swarms from the established hive decide to invade other parts of the building to nest. We have seen homes with multiple colonies of bees living in different cavities of the structure, and, no doubt,

some of these swarms originated from a parent colony that became established and was not eliminated.

Generally, bees living inside of a building can be either removed or killed. Both strategies require the structure to be opened to expose the hive and remove all combs and bees (either dead or alive), followed by reconstruction of the building in such a way that function is returned to normal.

And the cavity must be properly sealed and no longer accessible to honey bees. It is very important to remove all combs and hive residues because these will be attractive to future swarms. Honey bees like to live in cavities where other bees have once lived, and the odors of residual comb and propolis can attract new swarms.

As with swarms, a pest control company might be the best resource for killing the honey bees. Professional companies that do this type of work will have the necessary knowledge, insecticides, and equipment to accomplish the task. Often, a company may have to make one or two follow-up visits to kill all bees at a nest site. Be prepared to pay for these return visits, in addition to the initial treatment.

Pest control companies will only kill the honey bees, but this does not end the job. It is never a good idea to kill an existing colony with poison and then seal the residue of the hive in place. Many problems will result. First, there will likely be large amounts of stored honey in combs. Honey bees protect these combs, but once the bees are killed, many other insects (beetles, moths, and ants) and small rodents can tunnel through the combs to eat the honey. The result is large volumes of honey running down walls and soaking sheetrock and pooling inside walls and on floors. Sometimes, the honey will ferment. Odors of rotting bees and fermented honey can permeate the entire home. It is a most unpleasant odor and mess. Therefore, the cavity needs to be opened, and all hive contents and dead bees should be removed soon after bees have been killed. **Another important point: Never eat or harvest honey from a hive where honey bees were killed by application of chemical pesticides. The honey would be contaminated with these pesticides.**

Removal of the bees and relocation of the colony by a beekeeper is usually a more palatable solution to the problem of bees nesting in the walls of a home. However, the need to remove bees and clean the cavity followed by proper reconstruction is why dealing with established hives can be expensive. Skill sets of beekeepers and carpenters are needed to adequately deal with this problem. It is very difficult to find both areas of expertise in a single person. We have met a few professional carpenters who also are beekeepers, and these people are exceptional resources. However, most beekeepers are not carpenters, and most carpenters know very little about honey bees.

Consequently, the removal of live honey bees from a building often requires two people working in tandem: a carpenter and a beekeeper. This is one reason that fixing the problem can be expensive. Both people require compensation for their efforts.

Many homeowners feel like beekeepers should not have to be paid. After all, they are getting free bees for their trouble. The truth is that this kind of job can take several hours, and there are much easier ways for beekeepers to acquire honey bees. Generally, the honey bees will be negatively impacted by the ordeal of removal, and many of the colonies are not very useful to the beekeeper. The beekeeper will likely help protect the carpenter with defensive gear and techniques, while the carpenter safely opens the structure. The beekeeper then removes all bees and combs and cleans the nesting cavity before the carpenter returns to reconstruct the structure and seal it. Such a job can cost thousands of dollars; hence, prevention is paramount to avoid these expenses.

Contracts and Liability

There are two major areas of concern with liability: 1) Who is liable for damage done to a building or structure when honey bees are removed? and 2) If someone is hurt by the honey bees, what liability is incurred by the beekeeper and/or homeowner? Homeowners should understand whether their home insurance covers damage caused by someone else who is removing honey bees from a building. If not, they should find out if the carpenter enlisted to help remove the honey bees carries a professional insurance policy that protects against damage in these situations.

These are unpleasant topics, but we point them out because sometimes overzealous beekeepers attempt to singlehandedly remove honey bees from a home. Beekeepers know honey bees, and it is easy for them to accept a removal job without considering the issues of structural damage that might result. Additionally, some beekeepers do not realize the significant personal danger that exists if they begin to cut into a structure and hit plumbing or electrical wiring with a saw. Several beekeepers have told us of close calls when they were lucky to walk away from the job.

We cannot give comprehensive suggestions about how to protect all parties involved, but it is incumbent for homeowners, beekeepers, and carpenters to understand and agree on the assumed liability. All parties may need to consult with lawyers ahead of time to have a clear understanding of potential pitfalls. Additionally, it is strongly recommended that contracts are written and signed among all participating parties before the beginning of work. The contracts should clearly state the duties of all participants, the agreed-upon compensation for the work, and

benchmarks that need to be met for the job to be completed. Such written contracts may also address liability issues.

Do-It-Yourself Approach

Given the complexities of liability, a homeowner may choose to handle a honey bee situation using the “do-it-yourself” approach. Obviously, when dealing with stinging insects, there is the potential that you might get stung. Anyone who is thinking of trying to deal with the problem themselves should carefully consider potential risks involved, be sure they are prepared to accept these risks, and have a clearly defined plan as to how they will proceed. This is not an undertaking to rush into; take time to plan and prepare. If you aren’t familiar with honey bees, familiarize yourself with bee-handling techniques by reading books on beekeeping and/or by visiting with a beekeeper. **If you are allergic or sensitive to honey bee stings, never try to remove bees.**

The first step in attempting to treat or remove a honey bee problem is to assemble the necessary protective equipment. At a minimum, this means having protective gloves; an appropriate, properly fitting bee veil; a hat; and long-sleeved, light-colored coveralls. Also wear high-topped boots with your pant legs tucked inside. Or seal the openings to pant legs in some other way. Such protective equipment can be easily and quickly ordered from beekeeping supply companies.

Here is another important consideration that can make the job safer and easier: Honey bees do not fly in the dark. Therefore, if a nest is easily and safely accessible after dark, this is a good time to act. However, when honey bees are disturbed at night, they will fly toward any nearby light source and will sting. So, if you use a light, it is best to set it so that it shines on the target area from one position while you approach the colony from a different direction.

Disturbed honey bees crawl around in the dark, and they sting any warm-blooded animal (including people) they contact. Occasionally, hanging clusters of bees are dislodged by jarring or some other disturbance and fall to the ground. This results in large numbers of agitated bees, which readily crawl onto—or up the insides of the pant legs—of anyone in the area. So it is advisable to wear full protective gear even when working after dark. Despite the advantages of working after dark, most people who are experienced with bees and have proper protective equipment prefer to work during the middle of the day when visibility is better and many bees are away from the hive looking for food.

The next step is to seriously assess the risks from other physical hazards, such as falling and electrocution. Dealing with home infestations of honey bees often requires using a ladder, and working from a ladder is risky, even under

ideal conditions. It becomes even more risky when you are wearing a bee veil and gloves, and angry bees are buzzing around you. If you are working off the ground, recognize the risk of falling and take appropriate precautions. Likewise, take the risks of electrical hazards seriously, especially when climbing or using an aluminum ladder or pole around electric lines or when using liquid sprays around sources of electricity. Obviously, cutting into electrical wiring and plumbing is another risk to consider.

Depending on the situation, there are three different approaches to destroying a colony of bees:

1) Soapy Water — One of the quickest and easiest ways to kill bees that are exposed, such as a swarm hanging on a tree limb or a colony on an exposed comb, is to spray them with a solution of soapy water (1 to 2 fluid ounces of liquid dishwashing detergent per gallon of water). This treatment is best done using a 1- to 3-gallon hand-pump sprayer (Figure 8). Honey bees quickly lose their ability to fly when soaked with this solution and die within a few minutes. Keep in mind, however, that only bees that are thoroughly soaked will be



Figure 8. This is a typical pressurized garden sprayer (1 gallon) that can be used to spray soapy water onto a swarm of honey bees to kill it. The white coveralls and veil provide protection when approaching the swarm. However, the use of soapy water does not create a frenzy among the bees as does the use of aerosol sprays. Continuous wetting of the swarm as layers of bees drop from the cluster is usually enough to kill all bees. (Photo by J. W. Harris)

affected. When treating bees that are clustered together, only the outer layer will be affected initially. It will be necessary to continue treating as the outer bees fall away and untreated bees are exposed. Be especially cautious when using any type of liquid spray around sources of electricity. Soapy water works much better than aerosol insecticides for treating exposed clusters of bees. Spraying an exposed cluster of bees with an aerosol insecticide will usually cause the cluster to break up, resulting in a cloud of angry bees, but the soapy water does not seem to alarm the bees. Most just remain on the cluster until they are overcome by the effect of the soapy water and fall to the ground, exposing the next layer.

2) Insecticide Dust — When bees are nesting in some type of void where they are protected from direct spraying, an appropriately labeled insecticide dust is generally more useful. Dust formulations tend to work much better than liquid sprays in this situation because they billow through the nest cavity, and the dust particles become attached to the hairy bodies of the bees. The bees then ingest the dust particles when grooming themselves, effectively poisoning themselves.

Foraging bees that are away from the colony when the treatment is applied will usually be controlled when they return to the hive and crawl through the dust. Deltamethrin dust is currently the best treatment option for homeowners. This is a pyrethroid insecticide that is commonly used by professional pest control companies to treat wall voids for a variety of insect pests. Homeowners can purchase small quantities of 0.05 percent deltamethrin dust under the brand names of Terro Ant Dust and Delta Dust. Another dust that can be used for honey bees is Apicide Dust (5 percent carbaryl). It is sold in 10-ounce containers with a spout to allow injection through holes into voids.

These dusts are labeled for control of bees and for application into cracks, crevices, and other voids in and around homes. They are formulated as “waterproof” dusts, which offer advantages over dusts that are not waterproof, and these products are usually available locally. This method of treatment is also useful against other types of stinging insects that nest in wall voids. Note that few other insecticide dusts are labeled and appropriate for this type of use. Do not use dusts that are not specifically labeled for use in the home as crack and crevice or void treatments.

One method of applying dusts is to use a small hand-pump garden duster (Figure 9). Often, it is helpful to attach a short piece of appropriately sized, flexible hose to the outlet of the duster. This hose can then be inserted into the entrance to the colony or through holes drilled into the void to apply the dust directly into the nest void. Bulb dusters (Figure 10) and battery-powered hand dusters are also available from online and mail-order sources. When working around bees, it is



Figure 9. This garden duster is used to blow dust into colonies of honey bees in structures. A. Fitted with a small hose. B. Inserted into a void to direct dust onto a bee nest. (Photos by Blake Layton)

best to keep vibration and jarring, such as drilling, sawing, or hammering, to a minimum. These activities tend to excite and irritate bees and other stinging insects.

Some companies sell specially designed extension poles that can be used in combination with a bulb duster to inject dust into the entrance of a colony located high above the ground while allowing the applicator to safely stand on the ground. Such tools are somewhat costly, but they make treating such bee colonies much easier and safer. Be extremely careful when using such extension poles around electric power lines and other sources of electricity.

The key to using dusts is to recognize that they need a little time to work. The best approach is simply to apply the dust with as little disturbance as possible and then wait a few days for it to work. Check the colony activity in 2 or 3 days to see if a follow-up treatment is necessary. It usually takes a few repeat treatments to eliminate a large colony. After all the



Figure 10. This bulb duster is used to blow dust into colonies of bees in buildings or protected cavities. It may be difficult to find locally but can be readily ordered from Internet sources. (Photo by Blake Layton)

bees in the colony are killed, the comb and dead bees can then be removed as previously discussed.

In some situations, it may be helpful to construct a 4- to 6-inch-wide ledge, made of wood or cardboard, and attach it with screws or tape just under the opening to the hive. The objective is to provide a narrow landing ledge for the returning workers. This ledge can then be treated with insecticide dust, which returning bees will track into the hive.

3) Insecticide Aerosols — Aerosol sprays containing 2 percent permethrin are very effective for quickly killing bees nesting inside walls or other structural voids. Bengal Roach Spray contains 2 percent permethrin and is labeled for control of bees and for use in the home as a crack and crevice treatment. It is best to use aerosol sprays that come with a small, straw-like extension that can be attached to the spray nozzle (Figure 11). The extension can be inserted into the void, allowing the insecticide to be injected directly inside. These aerosol sprays produce a fine mist that circulates in the void. Wing-fanning by the bees also helps distribute the pesticide.

Some companies sell extension poles with special attachments that can be used to apply aerosol sprays into second-story colonies while standing at ground level. The Gotcha Sprayer is one example (Figure 12), but it takes a good bit of patience and dexterity to use. In most cases, the spray can be injected into the hive entrance. In some situations, it may be necessary to drill small holes—too small for bees to crawl through—into the infested void. A screwdriver, ice pick, or nail can be used to punch access holes through sheetrock walls. The insecticide can then be applied into the nest using the straw extension. Sometimes, it is possible or necessary to locate and treat the nest from the inside of the building. Nests in walls can be located by tapping on the wall and listening for the buzzing of the bees. Also, with plaster or sheetrock walls, there may be a stained area that identifies the location of the nest within the wall void.



Figure 11. This aerosol insecticide spray canister is fitted with a small straw to direct the spray directly into a void containing a honey bee nest. (Photo by Blake Layton)

Be sure to use an aerosol spray labeled for crack and crevice use in homes—preferably one that specifically lists honey bees on the label as one of the pests controlled.

Many aerosol products contain less than 2 percent permethrin or other pyrethroid insecticides. They are generally not as effective as the 2 percent permethrin sprays and will likely require numerous applications. One application of the 2 percent permethrin is usually all that is required if the mist thoroughly penetrates the nest area and contacts all the bees.

Honey bees are sensitive to most insecticides, and there are many other insecticide sprays that can be used to kill them. Even aerosol wasp and hornet sprays can be used effectively in some situations, but several cans will usually be required.

These three methods generally work well when properly implemented. When purchasing insecticides to use for control of bees in homes, read carefully to be sure the product is labeled for the intended use, and follow label directions carefully. And remember: Once all the bees have been killed, the dead insects and comb must be removed and the opening sealed.



A



B

Figure 12. This Gotcha Sprayer is connected to a telescoping pole that allows application of aerosol insecticides to honey bees nesting overhead without climbing a ladder. The applicator pulls the twine, and the hinged, green lever depresses the top of the sprayer canister to release the insecticide. (Photo by J. W. Harris)

Africanized Honey Bees

Africanized honey bees (AHBs) are not yet known to be established in Mississippi. They are established in Louisiana and southern Arkansas to our west, and they are also established in large areas of southern Florida to our east. AHBs may begin appearing in Mississippi at any time. Although colonies of AHBs can potentially occur anywhere in the state, the first appearance of AHBs associated with this invasive front will most likely occur in counties on the western edge of the state.

Although the sting of an AHB is no more painful or threatening than that of a European honey bee (our domestic subspecies), AHBs tend to be much more irritable and defensive than European honey bees. Therefore, the potential for sustaining large numbers of stings is much greater with AHBs. AHBs look exactly like European honey bees, and even experienced beekeepers cannot visually distinguish between these two subspecies of honey bees. Also, some colonies of European honey bees can be exceptionally irritable and defensive, which means that behavior is not always an effective indicator of the type of bee.

If you encounter unusually defensive colonies of bees that you suspect may be AHBs, contact the Bureau of Plant Industry in the Mississippi Department of Agriculture and Commerce. The methods of control discussed in this article will work against AHBs, but the aggressive nature of AHBs makes it much more important to have appropriate protective equipment, as well as bee-handling experience and knowledge, and to take all appropriate precautions.

Additionally, public-safety concerns require a larger safety perimeter for keeping people and animals from being harmed by the bees during the removal process. It is recommended that people, pets, and farm animals within a 300-yard radius take shelter **before** a beekeeper tackles AHBs. If you suspect you may be dealing with a colony of AHBs, or an especially aggressive colony of European honey bees, you should strongly consider seeking the assistance of a professional pest control company that has experience in controlling stinging insects.

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