

Photo by Arthur Giblin



Guidelines for industry— destroying swarms or nests of Asian honey bees



Close-up of an AHB swarm
Photo by Arthur Giblin

This guide provides pest control operators and government agencies with a range of safe and effective tools for destroying Asian honey bees. It includes standard destruction techniques that have been used and evaluated by Biosecurity Queensland.

The Asian honey bee—an invasive pest

Asian honey bees (AHB, *Apis cerana* Java genotype) were first discovered in Australia in Cairns in 2007. They are now established in northern Queensland and are expected to slowly spread throughout their natural range in Australia.

AHB are similar in appearance to European honey bees (EHB, *Apis mellifera*) and can be easily confused with EHB and native bees. However, AHB are slightly smaller than EHB (about 10 mm long, whereas EHB are about 15 mm long) and have more pronounced and even banding along the abdomen. You must be able to identify pest bees before destroying them, as other bees are important to our environment for pollination and honey production.



Actual length: Approximately 10 mm



An AHB swarm on a rubbish bin



A concealed nest of AHB

AHB swarms can hang from almost any object, clinging together in a dense cluster. They vary in size from that of a closed hand to that of a basketball. If the swarm is much larger than this, it could be an EHB swarm, in which case it is best to call a local beekeeper to remove it. AHB swarms can remain for 1–2 days while they send out scouting bees to find a suitable place in the area to make a nest, at which time they will move to this site and establish a colony. Nests can be wherever there is a suitably sized cavity. There will be constant movement of bees in and out of the cavity, usually carrying pollen back to the colony. These bees tend to defend their nest and queen, which is why they can sometimes become more aggressive when disturbed.

For more information on distinguishing characteristics of AHB, visit www.biosecurity.qld.gov.au. Also, a local beekeeper may be able to help you identify AHB—look in your local telephone directory under ‘Apiarists’ or ‘Beekeepers’ for contact details.

Asian honey bees in Queensland

From July 2013, Biosecurity Queensland will not be responding to or managing reports of AHB swarms or nests unless the report may be associated with a new incursion. We are advising the public that the safest way to remove an AHB swarm or nest is to use the services of a local pest control operator, and to check their local telephone directory for contact details.

We recommend that you do not advise the public about how they can destroy AHB. For any general enquiries about AHB, they can call Biosecurity Queensland on **13 25 23**.



AHB (left) and EHB (right)
Photo by Arthur Giblin

Managing Asian honey bees

Always use personal protective equipment (PPE) when attempting to destroy a swarm or nest and integrate risk assessments into your standard operating procedures. Be prepared to respond to AHB nests or swarms in a variety of situations and always have a second person assisting. Anyone who is allergic to bees (or insects in general) should not be near the bees—see the safety and precautions section on page 3 for more details.

Seek specialised assistance if:

- the swarm/nest is hard to reach or in an unsafe environment
- roofing needs to be removed to successfully destroy the nest
- you will be working near live electrical wires
- specialised PPE is required (e.g. on an industrial site)
- the nest is in a rotten tree or you need to climb a tree to destroy the nest.



An AHB swarm



Spraying a concealed AHB nest

Checklist for responding to a public call

Find out the following information from the caller. Knowing the location and behaviour of the bees as well as whether they are a swarm or nest will help you prepare appropriately.

Are the bees Asian honey bees?

- Have you looked on Biosecurity Queensland’s website to identify the bees?
- Do you know the differences between AHB, EHB and little black native bees?
- Are the bees longer than 10 mm?
- Do you think the bees could be AHB?

What is the location?

- Is the swarm or nest endangering you?
- Are you at the site of the cluster of bees?
- Will I be able to gain access to it easily?
- Will I need a ladder to reach it?

Is it a swarm?

- Is the swarm bigger than a basketball?
- Is the cluster of bees hanging from a reachable object?

Is it a nest?

- Have the bees been there for more than 2 days?
- Is the cluster of bees inside a cavity?
- Can you see any signs of a honeycomb?

Safety and precautions

AHB stings can be painful and dangerous; they can cause a severe allergic reaction (anaphylaxis) in some people. Anyone who has known allergies to insect stings must not attempt to control a swarm or nest of AHB.

PPE must be worn when destroying a swarm or nest. This will protect the skin from contact with the bees and the lungs from inhalation of the insecticide used to kill the bees. We recommend, as a minimum:

- an apiarists veil
- elbow-length gloves
- disposable full-body overalls
- sturdy enclosed footwear
- a dust mask
- safety eyewear.



Suggested PPE for use around AHB.



An AHB nest in a letterbox



An AHB swarm on a garden shed
Photo by Arthur Giblin



Checking the insecticide label

Ensure bees cannot crawl into your PPE. This can be achieved by taping closed any holes and ensuring the net of the veil is not touching your skin and is worn correctly. Be prepared for a variety of situations and have a second person present at all times.

Remember that foraging or escaped bees lingering around the treated area may be aggressive and that **dead bees can sting**.

First aid

Anaphylaxis is a sudden, severe allergic reaction that can be life-threatening, particularly when it affects the person's breathing. People with known allergies to insect stings should not attempt to control a swarm or nest of AHB. However, you should carry an epinephrine pen in case anyone has an anaphylactic reaction unexpectedly.

- **Signs and symptoms** of anaphylaxis may occur almost immediately after a sting or up to 20 minutes after the sting.
- **Early signs and symptoms** include itchiness of the palms and/or soles, faintness, feelings of generalised warmth and tingling in the mouth.
- **Advanced signs and symptoms** include swelling of the face, hives, difficulty breathing, vomiting, abdominal pain, dizziness, loss of consciousness and collapse.

If any of these signs occur, seek medical assistance. Swelling of the throat should be treated as an emergency—**call 000 and ask for an ambulance**.

Preparation

You will need the following equipment:

- PPE (see page 3)
- a ladder
- a roll of double-ply paper towel
- several cans of flying insect killer that can be used on bees (check the label)
- a handheld torch
- a packet of garbage bags
- several large zip-lock clear plastic bags
- a packet of dust masks
- a mobile phone (in case of emergency)
- a GPS to record the location (if available).

Also, if you are submitting samples to Biosecurity Queensland, you will need vials filled with 70% ethanol to preserve the samples. Submitting samples is very important, especially if the bees have been destroyed near an international airport or seaport or if they are suspected of being a new incursion.

Make sure you have correctly identified the bees as AHB and understand the risks associated with being stung by a bee. Advise people in the vicinity to move a safe distance away during and following the destruction.

When destroying a swarm or nest, ensure that you:

- wear appropriate PPE
- have the equipment needed to safely reach the swarm or nest (e.g. a ladder)
- have a second person on site to assist you or in case of an emergency.



AHB nests



Removing comb

Destroying a nest of Asian honey bees

1. Determine whether additional assistance is required and seek this if necessary.
2. Examine the nest entrance and check for evidence of other exits that the bees are using. If secondary exits or cracks are visible, plug these with wet paper towel (or something similar) to stop the bees using these to escape.
3. If the main nest entrance is large, bees could escape out of it when you are spraying. To avoid this, plug the main entrance but leave a small gap so you can aim the spray into the nesting cavity.
4. Spray at least one full can of flying insect killer into the nesting cavity. Try to spray directly onto the comb and nest. After you have sprayed the required number of cans, plug the entire main entrance hole with wet paper towel (or something similar) and leave it for a few minutes. The fumes from the spray will circulate within the cavity and kill the remaining bees. (The amount of spray required to kill a nest depends on the nest size and the location of the cavity.)
5. Spray any foraging bees that are trying to return to the nest—they may gather around the plugged entrance.
6. Listen to the noise inside the sprayed nest. When it changes from a high-pitched hum to a low-pitched hum or very little noise, you can presume that the nest is dead.
7. Keep the nest sealed for as long as possible after spraying.
8. If possible, extract the comb and dead bees from the nest.
9. If you cannot extract the comb, check the nest the following day to ensure that there are no live bees in or around the nest and to confirm that it is dead. If the nest is still active and bees are coming and going from the site, repeat steps 2–8 until the nest is completely dead.
10. After you have finished spraying or checking the nest, walk a safe distance away from the site and have your helper check your clothing for any dead or stray bees. Ensure these are brushed off before you remove your PPE.
11. Collect a bee sample if the nest is suspected of being a new incursion or if it was near an airport or seaport. Report the details to Biosecurity Queensland on **13 25 23** and send them the sample.
12. If the bees were not near a port and are not considered a new incursion, place the dead bees and extracted comb in a rubbish bin.



An AHB nest in a tree

Destroying a swarm of Asian honey bees

1. Determine whether additional assistance is required and seek this if necessary.
2. Move calmly towards the swarm, then slowly and smoothly place either a large zip-lock bag or a garbage bag (depending on the size of the cluster) around the swarm.
3. Enclose as much of the swarm as you can inside the bag, keeping a firm hand on the bag opening, then squeeze the bag shut, so that very few bees can escape. This is best achieved in one steady and relaxed motion.
4. Gently shake the swarm mass until it drops into the bag.
5. Spray the area where the swarm was originally hanging—this will discourage the bees from reforming on this site.
6. Insert the bag containing the swarm into another bag and tightly secure it with a knot or zip lock.
7. If you did not capture the majority of the swarm, the bees may reform in a mass. If this happens, repeat steps 2–6.
8. Put the bag(s) containing the swarm of bees into a freezer; this will kill the bees. If you cannot put the bees into a freezer, make a small hole in the bag(s) and spray the insecticide into the bag. Seal the hole again and the bees should die within minutes.
9. Walk a safe distance away from the site and have your helper check your clothing for any dead or stray bees. Ensure that these are brushed off before you remove your PPE.
10. Collect a bee sample if the swarm is suspected of being a new incursion or if it was near an airport or seaport. Report the details to Biosecurity Queensland on **13 25 23** and send them the sample.
11. If the bees were not near a port and are not considered a new incursion, place the dead swarm in a rubbish bin.

Reporting suspect bees

Report all suspect bee sightings (including those of any swarms/nests you have destroyed) and provide a sample where possible. This is particularly important for any swarms/nests that could be a new incursion or are near an airport or seaport. Record the location as accurately as possible and immediately contact the Exotic Plant Pest Hotline on **1800 084 881** or Biosecurity Queensland on **13 25 23**.



EHB (left) and AHB (right)
Photo by Paul Zborowski

Further information

You can view applications of these guidelines in a short YouTube video at www.youtube.com/biosecurityqld. The video also shows two other products that can be used in different situations to destroy AHB swarms and nests.

Visit www.biosecurity.qld.gov.au.

Call **13 25 23**.



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