

HONEYBEE SWARMS



SWARM SEASON

Hawaii's tropical weather allows for an extended swarming season compared to the mainland US.

Swarms are more common in spring and summer. That means from March to September in Hawaii.

Swarms are generally not aggressive and rarely sting; however, it is always best to treat a swarm with caution, keeping children and pets away from the bees. Do not spray or disturb the swarm, as this may agitate the bees and increase risk of stinging.

Swarms are valuable resources; these bees pollinate many local crops and produce honey. Help protect this important insect by calling a local beekeeping group, the State Apiary Program or the UH Honeybee Project to report a swarm.

Swarms appear suddenly. A large group of bees, about the size of a basketball appears overnight in an exposed area. There is no apparent honeycomb or nest.

Colonies have been present for more than a few days. The majority of the bees are not in the open. A steady stream of bees going in and out of a hole or crack is evident.

WHAT IS A SWARM?

Swarming is a natural process by which a honeybee colony splits into two. Swarms tend to occur when environmental conditions are favorable, when the colonies are strong, or simply when the colony needs more space to grow.

A swarm of bees is composed of thousands of worker bees and a single queen in search of a new suitable home. Swarms are often less aggressive than well-established colonies. This may be because swarms have no resources, such as honey or larvae, to protect. Swarms usually appear suddenly and are often found in exposed areas, such as a low branch on a tree, the eave of a roof, or the side of a building.

The bees in a swarm need to find a home quickly, but instead of flying around as a large group, scout bees are sent out to explore the neighborhood. After a swarm settles in a temporary location, it sends hundreds of scouts in search of suitable nest sites. The different scouts report to the group about all possible nesting sites they examined, whether it is a hole inside a tree, a space between the walls in a house, or even an abandoned wooden chest in a yard.

The scout bees convey their discoveries to the other bees via dances and sounds. The swarm "listens" to all new information, and additional scouts are dispatched to further assess the most appealing sites. Collecting information and selecting where to go takes time, from a few hours to a couple days, but most often a swarm will relocate within 24 hours to their new home.



The swarm congregates in a tree, while scout bees search for a suitable new home.

BIOLOGY AND MANAGEMENT OF SWARMS

COLONY GROWTH, PROPER BEEKEEPER PRACTICES, AND PUBLIC CONCERNS

Swarming is part of the natural cycle of honeybee colony. During a swarming event the old queen takes about half of the workers with her in search of a suitable area to establish a new hive. While in the parent colony, the remaining workers raise a new queen. Eventually this process results in two colonies from an original single colony.

Beekeepers can often identify signs that suggest that a colony may swarm soon. An increase in adult bee population suggests a growing colony that many need more space.

The appearance of special queen cells where young queens are being raised hints at colony division and swarming. These cues signal to an attentive beekeeper that is time to split the colony.

Colony splitting is a management practice in which the beekeeper separates bee brood and adult bees into two boxes, one box with the older queen and one without a queen but with eggs and young larvae that can be reared into a new queen.

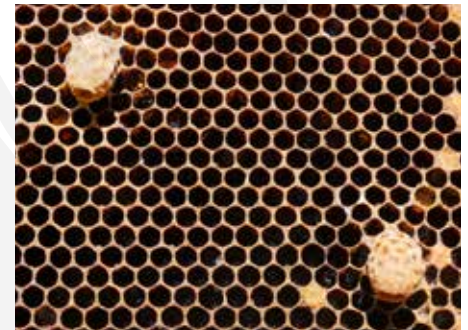
Splitting allows the beekeeper to divide a colony under controlled conditions and avoid a swarm. Splitting is an easy way to increase colony numbers in an apiary.

In comparison, if a swarm were to occur the beekeeper will most likely “lose” the swarming bees, and the parent colony from which the swarm came will be reduced in size temporarily.

Beekeepers can prevent swarms by anticipating the needs of the colony and providing space to grow and store honey. This strategy is considered “swarm prevention” and it is probably the simplest way to deal with a growing hive. There are times, however, when a colony has already begun construction of new queen cells. In these situations, a beekeeper can choose to destroy these cells. This strategy is considered “swarm control” and may only temporarily stall the colony, especially if more space is not provided for the bees.



Honeybee queens are often replaced each year to ensure that the colony is healthy and lots of new bees are produced.



Queen cells are much larger than regular worker bee cells and hang perpendicularly from the honeycomb.

SWARM TIPS

If a large group of bees suddenly appears or gathers on a tree or a building, it is most likely a swarm.

Swarming bees are often very calm so there is no need to panic when a swarm appears but always be cautious as some people may have allergic reactions to bee stings. Keep children and pets at a safe distance. Do not disturb the bees. Report the swarm:

State Apiary Program:
(808) 339 1977
www.hawaiiibee.com

UH Honeybee Project:
(808) 956 2445
www.uhbeeproject.com

Because swarms are temporary aggregations, beekeepers or bee-related agencies need to be notified immediately after the swarm appears.

If the swarm is near an airport or seaport please report the swarm ASAP to the State Apiary Program so that the bees can be inspected. It is important to verify that they are healthy and no new pests are introduced to Hawaii.

SWARM STAGES

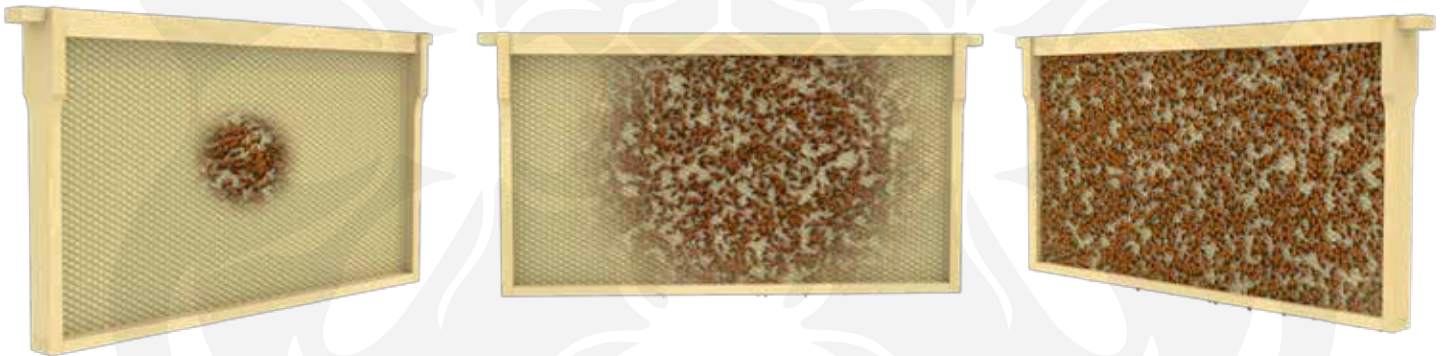
HONEYBEE SWARMING STEP BY STEP

A honeybee swarm is an exciting thing to observe, with 10,000 to 20,000 bees in flight, swirling and buzzing as they eventually settle for a quick rest on a branch. Bee colonies, however, take a while to prepare for this spectacular group departure from the hive. Nevertheless, the steps that precede a swarm often go unnoticed because they happen inside the colony, and only a beekeeper that opens a hive regularly will notice the tell-tale changes that the bees will soon swarm.

Understanding what conditions promote swarming and learning to “read” the natural changes that take place in preparation to the swarm flight are important skills for beekeepers and growers. Thus, becoming more familiar with the biology of the bees helps to predict and control swarming in managed bees.

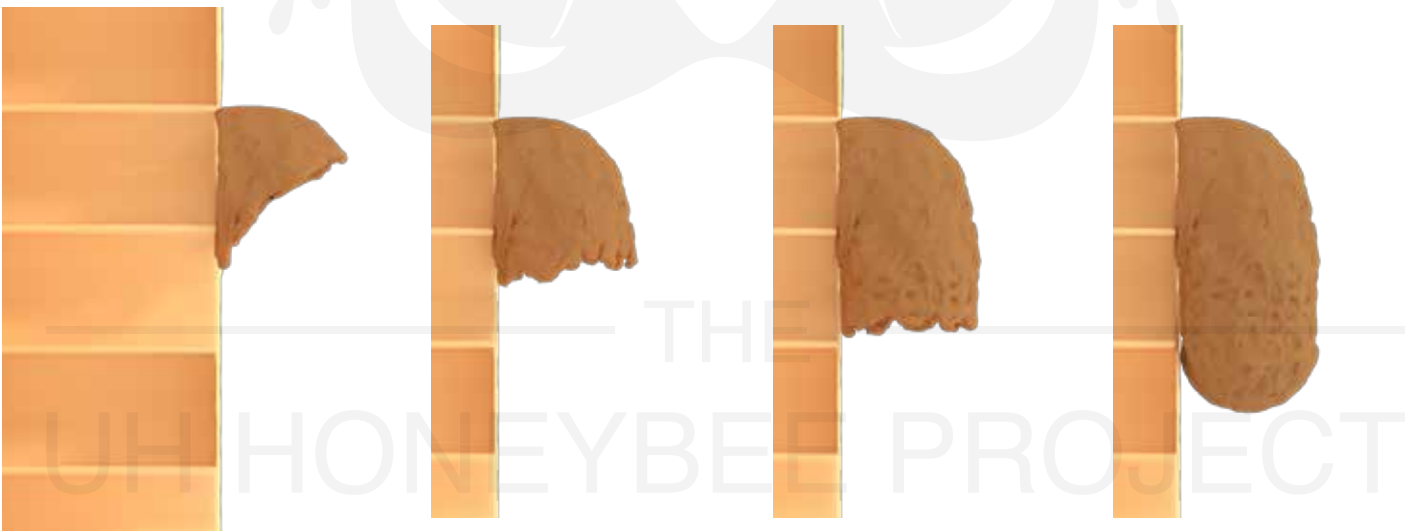
Stage 1

Honeybees tend to swarm when environmental conditions are right and/or when the bee population is too large for the cavity they are using as a nest.



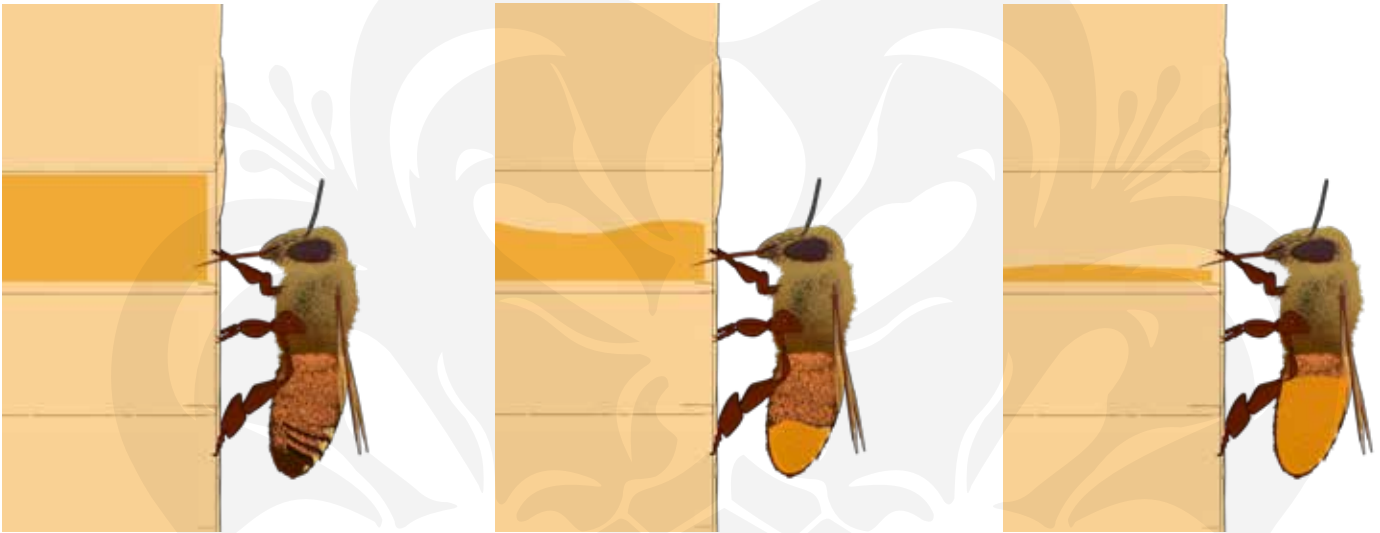
Stage 2

When the bee population is too high the workers begin building multiple queen cells. These cells are larger and hang vertically from the regular comb. These cells hold the new queen that will remain with the colony, while the old queen leads the swarming bees.



Stage 3

Some of the workers begin to eat honey in preparation for their flight. This honey will provide the starting food they need to create new honeycomb once they have settled in their new home.



Stage 4

The queen that will lead them is not the most agile flyer, her role in the colony has been as an egg producer, and she has a larger abdomen than the worker bees. The worker bees reduce her food intake and she begins to lose weight and stops laying eggs.



Stage 5

Swarming occurs mostly during good weather periods. Colonies seldom swarm during rainy and/or windy periods. In temperate regions, swarming is often associated with the summer months. In Hawaii's tropical climate swarming can occur throughout the year. However, food availability may result in swarming peaks from X to X.



Stage 6

The swarm departs the colony. The bees use chemical and sound communication to coordinate their departure from the hive. It is mostly young bees that follow the queen in this mass exodus. This makes sense as it will take time to build a new comb and rear a new generation of sister bees once they become established in a new nest site.



Stage 7

The swarm settles in a temporary resting place, usually not very far from their original nest. The worker bees congregate around the queen and settle into a tight group. The swarm may appear round or elongated depending on the surface they are resting on.



Stage 8

A few hundred worker-bees are sent out as “scouts” to seek a permanent home. The scouts share information via sounds and waggle dances that indicate how good a potential site is and where it is located.



Stage 9

When enough information is gathered, the bees decide where to fly to and relocate to a permanent new home.



Stage 10

The parent colony (from which the swarm developed) is left with a reduced bee population and queen cells. From the queen cells, young queens hatch. The first one to hatch will eliminate the ones still in the cell. If another queen has already emerged, they will fight. Eventually only one queen will become established. The new queen will mate with the drones and will begin to lay more worker bee eggs and replenish the colony.

