

When Bees Are Most Likely To Sting: Honeybee Colonies and Their Moods

Updated on December 14, 2011

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Bees can sting, we all know that. And, let's be honest, everybody knows that females of any species can be a bit moody. Apply this dictum to a colony of honeybees, which are nearly all female, and the occasional bee sting is inevitable. While the beekeeper can count on the occasional sting as an occupational hazard, honeybee colonies are more defensive at some times than at others. One day you peek into the colony and the bees happily go about their business unperturbed by your presence, other times you barely crack the top before being met with a barrage of buzzing, stinging bombers bent on driving you away, far away.

Luckily for the beekeeper, the moods of a honey bee colony are not entirely unpredictable. There are several factors that influence the defensiveness of a bee colony.

Honey Bees Are Only Interested in Defending the Colony

The first thing to keep in mind is that honey bees are only interested in defending the colony. Bees that are encountered foraging for nectar, far from the hive, have no interest in stinging you. They have nothing to defend. These bees sting only if they are threatened in such a way that they can't retreat, like getting stepped-on, or caught in your hair. The same holds true for a swarm. While several thousand bees clustered on a branch are an impressive sight, and daunting to many people, swarms are quite gentle. Again, having left the hive and not yet found a new home, they have nothing to defend.

Forager Bees and Defensive Behavior

In every colony there are guard bees, bees whose specific task it is to guard the colony. Guard bees might initiate defensive behavior, but in my experience it is the presence or absence of foragers that is the best predictor of colony mood.

The oldest worker bees are the most defensive and the oldest workers in the colony are the foragers, the bees that go out and collect nectar and pollen. This makes a warm, sunny day during a nectar flow (when lots of flowers are blooming) the best time to work your bees, because most of the foragers are out of the hive, foraging.

Conversely, bee colonies are most defensive on days when the foragers are stuck in the hive. Bees can't fly in rainy weather, so gray days make for a black mood. The same principle holds true for early morning before most of the foragers have left the hive, and late afternoon when most are back.

Periods of dearth, when there are no flowers blooming and no nectar to gather, also lead to more defensive colonies. The foragers, having no nectar to gather, hang around the hive making for an ill-tempered colony.

Queenless Colonies and Defensive Behavior

One of the reasons that forager bees are more defensive than other bees in the colony may be that they are less exposed to queen mandibular pheromone (QMP). QMP is a substance secreted by the queen

and distributed through the colony. Exposure to QMP makes honey bees less defensive. Foragers have less exposure to QMP because they spend much of their time outside the hive.

The absence of QMP helps explain why queenless colonies tend to be more defensive than those that are queenright (have a queen). One of the signs of queenlessness is that a colony is agitated and defensive when it should be at its most docile such as in the middle of a warm, sunny day during a nectar flow.

Night, Predation, and Rough Handling

All bee colonies will exhibit increased defensiveness at night, perhaps because many of their natural predators are nocturnal. Also, a colony that has to frequently defend itself from a predator, such as a skunk, will be unusually defensive. It seems that the more frequently a colony has to defend itself the more quickly it will do so.

Rough handling by the beekeeper can also make a colony defensive. Squishing bees releases alarm pheromones that upset the entire colony and lead to more stings.

Summary

So, to reiterate, honey bee colonies tend to be most defensive:

1. When most of the foragers are in the hive:
 - A) During rainy weather
 - B) Early in the morning and late in the afternoon
 - C) During a nectar dearth
2. When queenless
3. At night
4. When frequently having to defend against predators, like skunks
5. When handled roughly by the beekeeper

Working bees on warm, sunny days during a nectar flow helps insure that the colony will be at its most docile. Under these conditions, it's not uncommon to work bees without receiving any stings at all. However, sometimes bee work must be done under less than ideal conditions. When this is the case, try not to compound the problem. For example, during a dearth, when the bees are already testy, try to work them in the middle of the day, not just before sun down. If your bees are being bothered by predators, put a stop to it and when you work your bees, always be gentle.

Keep the above factors in mind and you can better anticipate the mood of your bee colony and be ready if they are more defensive than usual.