Giant Hornets vs. honey bees. differences between WESTERN BEE and JAPANESE BEE.

In Japan, there are two types of honeybees: the native Japanese honeybee and the imported Western bee. When confronted with attacks from giant hornets, Western bees venture out of the hive in an attempt to defend against these large predators.

Unfortunately, the Western bees are systematically picked off by the giant hornets, with just a few hornets capable of decimating an entire colony within hours. To prevent invasion by giant hornets, traditional Japanese beehives, also known as pile box hives, have narrow entrances measuring only 7mm wide. The small size prevents the giant hornets from entering, although they try to widen the entrance using their powerful mandibles.

Giant hornets vs. Honey Bees

In contrast, native Japanese honey bees have coevolved with the giant hornets and have developed a natural defense mechanism to protect themselves. Western bees, which were introduced to Japan in the late 1870s, lack the evolutionary adaptation necessary to survive in the presence of giant hornets and varroa mites in the Japanese wild.

Japanese honey bees display different behaviors when facing giant hornets. In response to the threat, all the bees retreat to the safety of the pile box hive. Prior to the arrival of giant hornets, the bees were active, flying around the hive. While some bees may be captured by the giant hornets, Japanese honey bees never engage in direct confrontation with them like Western honey bees do. Instead, they wait patiently until the

giant hornets give up their attempts to invade the colony.

However, if a giant hornet manages to enter the pile box hive, the bees will swiftly counterattack. By surrounding the hornet with a tight swarm, they generate a tremendous amount of heat, reaching temperatures of around 47-48°C, which can kill the hornet. Japanese honey bees possess a higher heat tolerance, withstanding temperatures up to 50°C. Although they can successfully eliminate a few scouting hornets, it is challenging for them to take on large numbers of giant hornets simultaneously. When Japanese honey bees are unable to defend themselves effectively, they resort to absconding, leaving the hive to find a new nesting location. Absconding is a natural defense mechanism that allows the colony a better chance of survival by escaping from enemies or diseases.