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Honeybee's Fear of Killer Hornets Keeps them away from Food Sources

By James A. Foley



honey bees

A fear of dangerous predators keeps honeybees from going near the best food sources, according to new research published in the journal *PLOS One*.

University of California San Diego researchers found that the bees actively avoid situations where they could encounter the Asian giant hornet and a smaller, related hornet species, which has spread into Europe and threatens honeybees there.

Notably, the researchers also observed the colony of bees as a whole behaving more cautiously than individual bees.

"This strategy of colonies collectively exhibiting significantly more caution than the riskier individual foragers may help honey bees exploit all of the available food sources, with some intrepid foragers visiting more dangerous food while the colony judiciously decides how to best allocate its foraging," said James Nieh, a professor of biology at UC San Diego.

Lead research author Ken Tan said that the Asian giant hornets are dangerous, heavily armored predators.

"Bee colonies respond by forming balls of defending bees, encasing the hornet and, in some cases, cooking it to death with heat generated by the bees."

Asian giant hornets (*Vespa tropica*) are powerful enough to kill humans. In rural southern China, at **least 41 people have died** this year after being attacked by the hornets, which are as long as an adult's thumb. The insects are four times the size of the *Vespa velutina*, which has invaded Europe.

For their experiments, the researchers presented honeybees with various combinations of safe and dangerous feeders filled with different sucrose concoctions. Hornets were present in the dangerous feeder scenario.

"Bees avoided the dangerous feeders and preferred feeders that provided sweeter nectar," said Nieh. "However, predators are clever and can focus on sweeter food, ones which bees prefer. So we also tested how bees would respond when sweeter food was also more dangerous. What we found was that the individual bees were more risk-tolerant. They avoided the giant hornet at the best food, but continued to visit the lower quality food with the smaller hornet."

Video footage of the Asian hornets is available below.

Hornets From Hell - National Geographic

Japanese Giant Hornet Scout Killed by Asian Bees