Asian species of honey bee produces `vibrational stop signals` in defense

Washington, D.C., Mar. 26 (ANI): Biologists from the University of California have detected sophisticated alarm signals in honey bees, which they use to warn their nestmates about the level of danger from predators attacking foragers or the nest.

They found that an Asian species of honey bee can produce different types of vibrational stop signals when attacked by giant Asian hornets.

These signals have different effects depending upon the type of danger and the context. A bee delivers a stop signal by giving another bee a brief, vibrational pulse, usually through a head-butt.

James Nieh, a professor of biology at UC San Diego, said surprisingly this signal encodes the level of danger in its vibrational frequency, its pitch, and the danger context through the duration of each pulse.

He explained that stop signals are usually delivered by a sender butting her head into a recipient. Understanding that these signals can be triggered by danger and reduce recruitment for dangerous food therefore made sense.

The study showed that these different types of stop signals elicited different and appropriate responses. Bees attacked at food sources by bigger hornets produced a kind of stop signal that more effectively inhibited recruitment.

Nieh also pointed out that bees attacked at the nest entrance produced another kind of stop signal that inhibited foragers from exiting the nest and being exposed to the danger outside."

The study is published in the journal of PLOS Biology. (ANI)