

How a Hive Regulates the Accumulation of Toxic Honey?

Previous studies have shown that honeybees adjust their foraging behavior in the presence of plant alkaloids in response to the availability of alternative forage. However, little is known about how it performs in a species other than *Apis mellifera*.

Dr. TAN Ken of the CAS Xishuangbanna Tropical Botanical Garden and colleagues conducted a study to investigate how a honeybee colony regulates the accumulation of toxic honey. They analyzed the behaviors of Asian hive bees, *Apis cerana*, after they foraged on the toxic nectar of a perennial vine, *Tripterygium hypoglaucum* (also known as the thunder god vine), whose nectar is mildly toxic to honeybees. They predicted that when foragers foraged on objectionable nectar they would reduce their recruitment behavior relative to workers foraging on nectar without toxic or objectionable qualities.

They performed their experiments at the Eastern Bee Research Institute of the Yunnan Agricultural University.

To perform an experiment, they placed three *Apis cerana* colonies comprising two combs of bees and brood into observation hives. Marked bees were video-recorded after their return into their observation hive, and recordings were subsequently analyzed at one fourth of the normal speed.

Their study found that the Asian hive bees avoided toxic nectar when given a choice. In the presence of alternative forage, bees adjusted their dance behavior. In the absence of forage, bees readjusted their recruitment to avoid starvation.

The researchers concluded that modulation of in-hive communication served to protect the colony from death caused by the collection of high quantities of toxic food while preventing starvation when no other food was available.

Their study contributes to the growing body of work elucidating the intricate ways in which honeybees use the dance language to achieve nuanced outcomes, which was published in *Animal Behaviour*; 84 (6).

Honeybees transferring information.

