

Tropi Mites

A Growing Threat to Honey Bees

WHAT YOU NEED TO KNOW



What is Tropi?

Tropilaelaps (or Tropi) mites are parasitic pests, which are currently primarily found in Asia, that affect honey bee colonies. They consist of four recognized species: *T. clareae*, *T. koenigerum*, *T. mercedesae*, and *T. thaii*. These mites originally evolved alongside giant honey bees (*Apis dorsata* and *Apis laboriosa*) but have since spread to other honey bee species, including the European honey bee (*Apis mellifera*), which is widely used by beekeepers around the world. While Asian honey bee species can tolerate the presence of Tropi, the mites pose a significant threat to *A. mellifera*, particularly in managed colonies.

Tropi mites are listed as a reportable honey bee disease by the World Organization for Animal Health (WOAH), requiring countries to monitor and report outbreaks. Their presence has been confirmed in Southern Asia, including South Korea, and unsubstantiated reports suggest they may also be spreading into regions like Russia and Kazakhstan. **So far, they are not known to be in the United States.**



Impact on Honey Bees

Tropi mites primarily feed on the hemolymph (a fluid similar to blood) of developing honey bee larvae, causing weakened and deformed bees. Like the well-known Varroa mites, Tropi mites are also believed to spread honey bee viruses such as deformed wing virus (DWV), further damaging colonies. However, Tropi mites reproduce much faster than Varroa, as they do not require a dormant period on adult bees. Instead, they move directly from one brood cell to the next, allowing infestations to grow rapidly if not managed.

While these mites cannot feed on adult bees, they can hitch a ride on them (a behavior known as phoresy), increasing their chances of spreading to other colonies. Symptoms of a Tropi infestation can include: weakened and deformed bees, irregular brood cells, and colony mortality. Tropi infestations can lead to significant colony losses and have a potentially devastating economic impact, given that honey bees contribute around \$15 billion annually to the U.S. economy through pollination and honey production.

Tropi Mites

Identify Tropi:
See it, STOP it!



Varroa Mite (L) vs Tropi Mite (R)

Identifying Tropi mites can be challenging due to their small size and speed. They are typically less than 1 mm in length (about 1/16") and are difficult to detect without careful inspection. They are smaller than Varroa mites, which makes them harder to spot with the naked eye. Beekeepers may notice these mites running across brood frames or inside opened pupal cells. Some key visual identification cues are their small size, the reddish-brown color, semi translucency, narrow shape, and rapid movement.



Methods for Identifying Tropi in a Colony:

1. **Brood Examination:** Opening about 100–200 capped brood cells to look for mites can help assess the level of infestation.
2. **Powdered Sugar Shake:** About 300 bees are coated with powdered sugar, which dislodges any mites present. The sugar is then dissolved to reveal the mites.
3. **Soapy Water or Alcohol Wash:** Similar to the powdered sugar method, bees are shaken in soapy water to release the mites.
4. **Bump Method:** By lightly bumping brood frames over a white surface, mites may be dislodged and made visible for identification.
5. **Mite Drop:** Sticky traps placed on the bottom of the hive can catch mites that naturally fall from the colony. These traps are examined after 24 hours for signs of mites.

Tropi infestation can be similar to those caused by other bee pathogens or pests.

What to do if you Suspect Tropi

- ✓ Contact your state Apiary Inspector: They will guide you on how to submit samples for official confirmation.
- ✓ Reach out to the State Plant Regulatory Official: These officials will collaborate with APHIS for further action.
- ✓ Submit samples for molecular identification: Beekeepers can submit samples to the National Agricultural Genotyping Center (NAGC) for advanced testing.



By spreading the word, we can help STOP Tropi in its tracks. Tropi is not thought to be in the US yet; let's work together to safeguard our pollinators from this emerging threat.

Project *Apis m.*

**POLLINATOR
PARTNERSHIP**

Protect their lives. Preserve ours.

