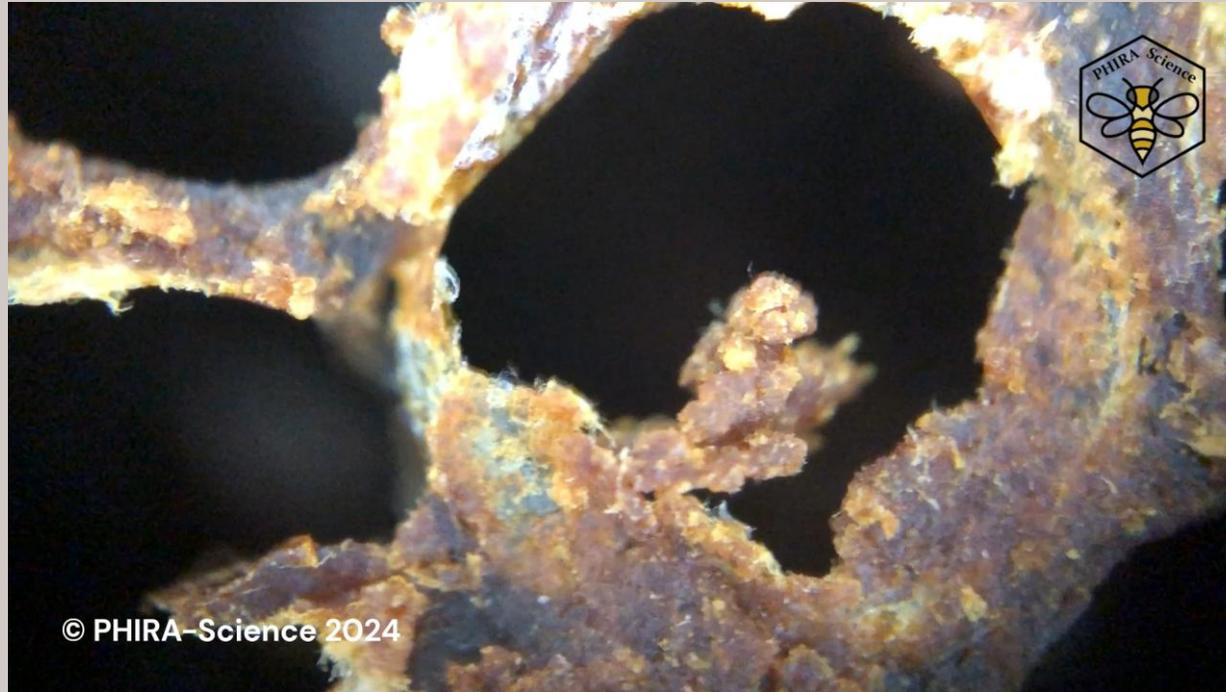


# Tropilaelaps Essentials<sup>1</sup>



Maryland State Beekeepers Association Meeting  
02-14-2026

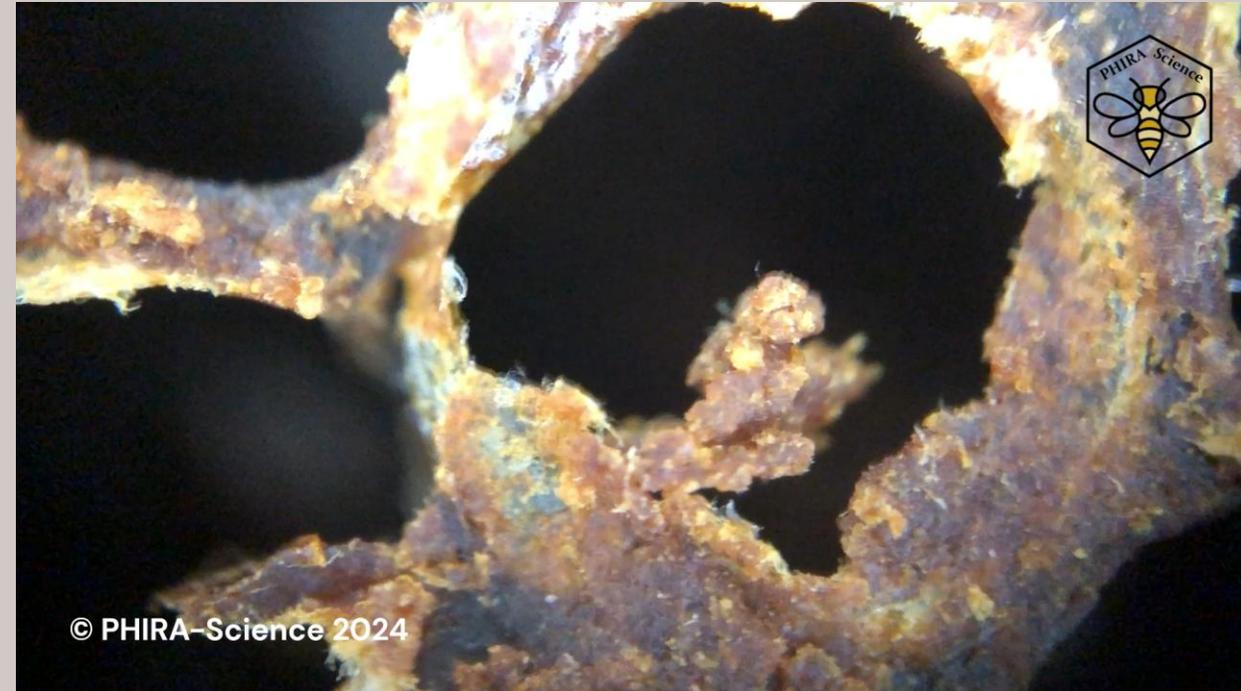
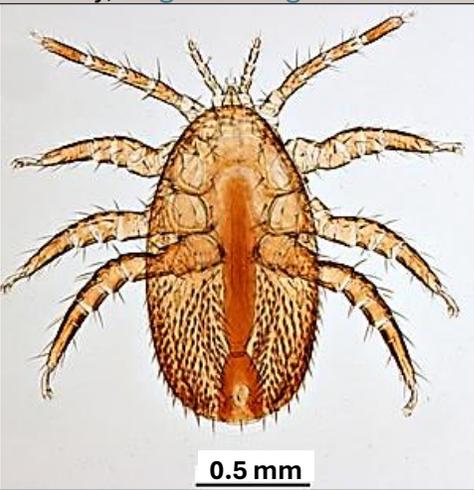
Prepared by  
Marian Iannuzzi

**So far, *Tropilaelaps* are not known to be in North America.**

# Tropilaelaps Essentials<sup>1</sup>

- What is *Tropilaelaps*
- Why Maryland beekeepers care
- What Maryland beekeepers can do now
- Where to go for more resources

Adult female *Tropilaelaps*. Figure by the Pest and Diseases Image Library, [Bugwood.org](https://bugwood.org)<sup>2</sup>



Caveat:

Many unknowns -- knowledge is evolving quickly -- research is ongoing.

**So far, *Tropilaelaps* are not known to be in North America.**

# What is *Tropilaelaps mercedesae*

## **BRIEF HISTORY** <sup>1,3</sup>

*Anatomy*

*Biology*

*How to Identify*

*Distribution*

1961: 1<sup>st</sup> published description of the genus *Tropilaelaps*; found in a collection of dead honey bees and later from field rats nesting near the beehives.<sup>3</sup>

- Ectoparasite. Feed and reproduce in honey bee brood.
- Native to South East Asia. Naturally parasitise the giant honey bee species *Apis dorsata* and *Apis laboriosa*.
- Jumped species to parasitize the western honey bee (*Apis mellifera*) shortly after they were introduced to Asia.



There are 4 species of *Tropilaelaps* - - -  
of those four, *Tropilaelaps mercedesae*  
represents the biggest threat to *Apis mellifera*

All further references to *Tropilaelaps* will  
be referring to *Tropilaelaps mercedesae*.

# What is *Tropilaelaps mercedesae*

Brief History

**ANATOMY** <sup>4</sup>

Biology

How to Identify

Distribution



- 1/3 the size of *Varroa destructor*
- Oval with long legs
- Agile and fast moving
- Adult: Reddish-Brown
- 8 legs; 1<sup>st</sup> pair held forward and used like antenna
- Has tearing mouthparts; mites create multiple wounds when feeding on brood
- Mites attach themselves to bees at joints between head + thorax and thorax + abdomen.

*T. mercedesae*

1/25" 1 mm



1/50" 0.5 mm



1/12" 1.7 mm

1/25" 1.1 mm

*V. destructor*

# What is *Tropilaelaps mercedesae*

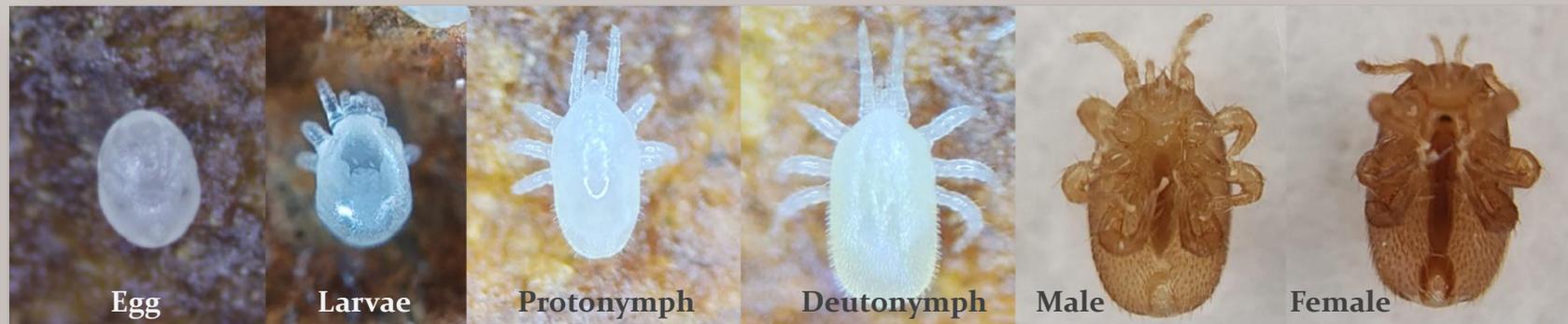
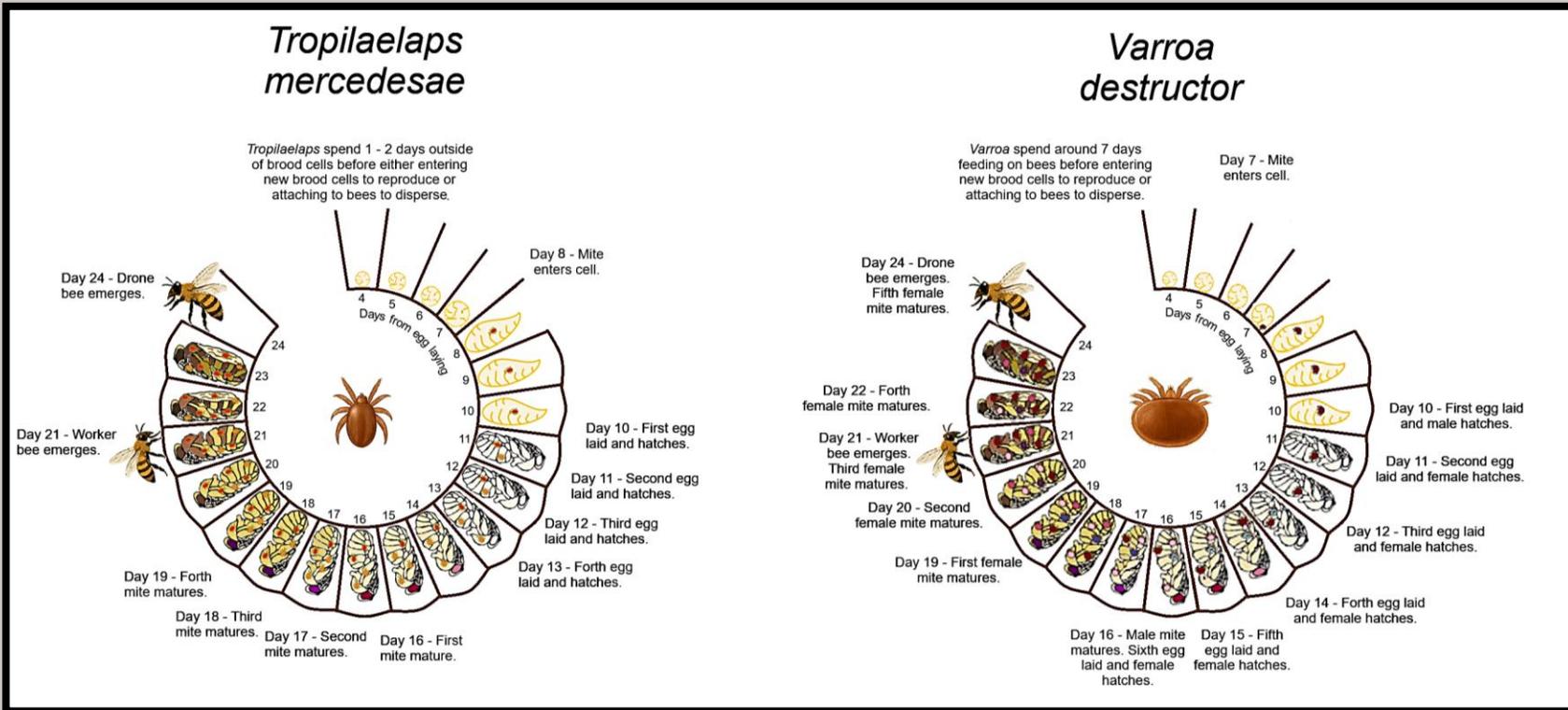
Brief History

Anatomy

**BIOLOGY**<sup>1</sup>

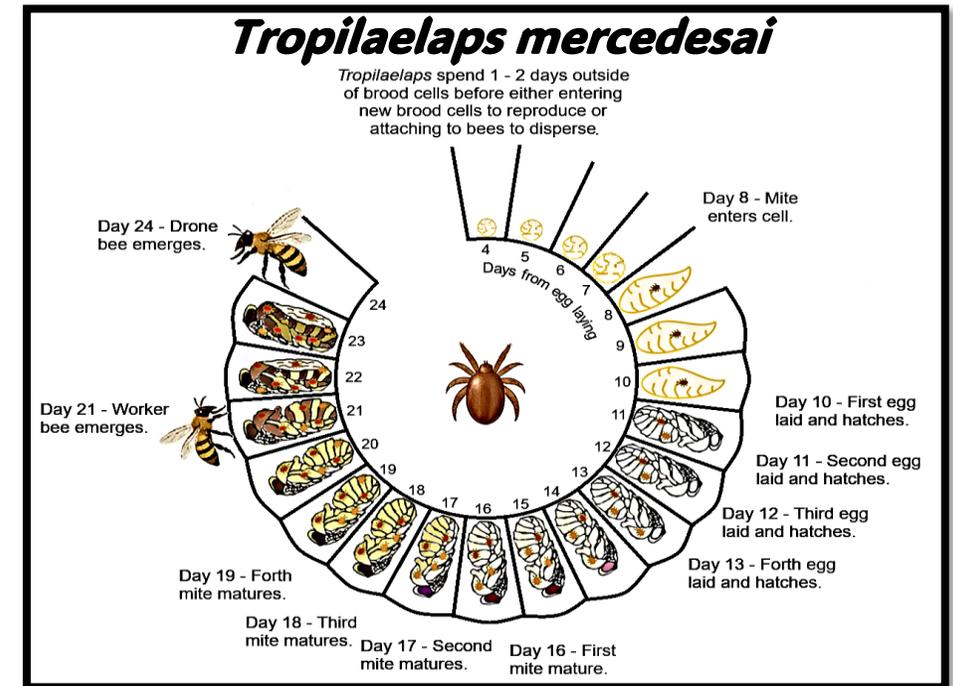
How to Identify

Distribution



# Why are *Tropilaelaps* a problem?

|  | <i>Tropilaelaps</i>   | <i>Varroa</i>                           |
|--|---|---|
| Mating location. <sup>4</sup>                                      | Inside and outside brood cells. Can reproduce by parthenogenesis. | Inside sealed brood cells.              |
| After cell capping, Foundress mite starts laying eggs <sup>6</sup> | ~10 hours   | ~60 hours                               |
| Egg laying frequency. <sup>4</sup>                                 | 24 hours  | 30 hours                                |
| Development time from egg to adult. <sup>4</sup>                   | 6 days  | 10 - 12 days                            |
| Average number of viable offspring produced. <sup>4</sup>          | 4   | 1.3 - worker brood<br>2.2 - drone brood |
| Dispersal phase. <sup>4</sup>                                      | 24 hours  | 5 - 7 days                              |



The western honey bee (*Apis mellifera*) is severely impacted by the parasitic *Tropilaelaps mercedesae* mite, which has the capacity to outcompete *Varroa destructor* mites (the current leading cause of colony losses) and more rapidly overwhelm colonies.<sup>9</sup>

# What is *Tropilaelaps mercedesae*

*Brief History*

*Anatomy*

*Biology*

**HOW TO IDENTIFY**<sup>5</sup>

*Distribution*

## Tropi Look a-likes



Photo by AHPA Bee Unit York. UK Crown Copyright.  
OIE Terrestrial Manual 2018.

## Varroa Mite (L) vs Tropi Mite (R)



Photo by A. Abbate, Auburn University

- Tropilaelaps mites are smaller than Varroa mites.
- Their length is similar to that of Varroa mites (~1 mm), but they are only about  $\frac{1}{3}$  as wide.
- They may be seen in older brood cells that the bees have uncapped, or running over the comb surface, with a stop-start motion.
- Although they can be seen with the naked eye, they are difficult to spot due to their small size, making them easily missed by the untrained beekeeper.

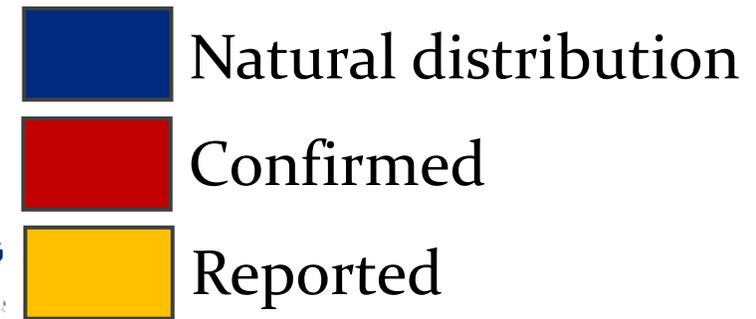
tropistop.com



# Distribution <sup>1</sup>

2025

*Tropilaelaps mercedesae*



**EURL**  
European Union Reference Laboratory for  
**BEE HEALTH**



- **Suspected presence in Belarus**

During the Belarusian scientific congress of the Vitebsk State Academy of Veterinary Medicine (VSAVM) of 15 and 16 May 2025, a study conducted in the Vitebsk district of Belarus to identify different pests of honey bees was presented. Inspection of 173 bee colonies was performed in apiaries in 2023 and 2024. During apiary inspection, *Tropilaelaps* spp. specimens were retrieved in 19.54% of cases (Goryachev and Kuzmich, 2025).

- **Suspected presence in Crimea**

In 2023, a study was conducted in the Belogorsk district of Crimea. The objective was to confirm introduction of *Varroa destructor* and *Tropilaelaps* spp. in Crimea. One apiary was selected and 249 larvae were sampled. Mites from both species were found (16 mites of *V. destructor* and 150 mites of *Tropilaelaps* spp.). This study was published in a Russian scientific journal (Khokhlova, 2023).

# Why Maryland beekeepers care

*Tropilaelaps* are a major threat to honey bee colony health

Distribution is expanding

- migration on primary hosts
- unintended human-aided transport (New Jersey incident<sup>7</sup>)
- inadvertent distribution by beekeepers



**Beekeepers –**

Most likely to detect *Tropilaelaps*  
in a timely manner



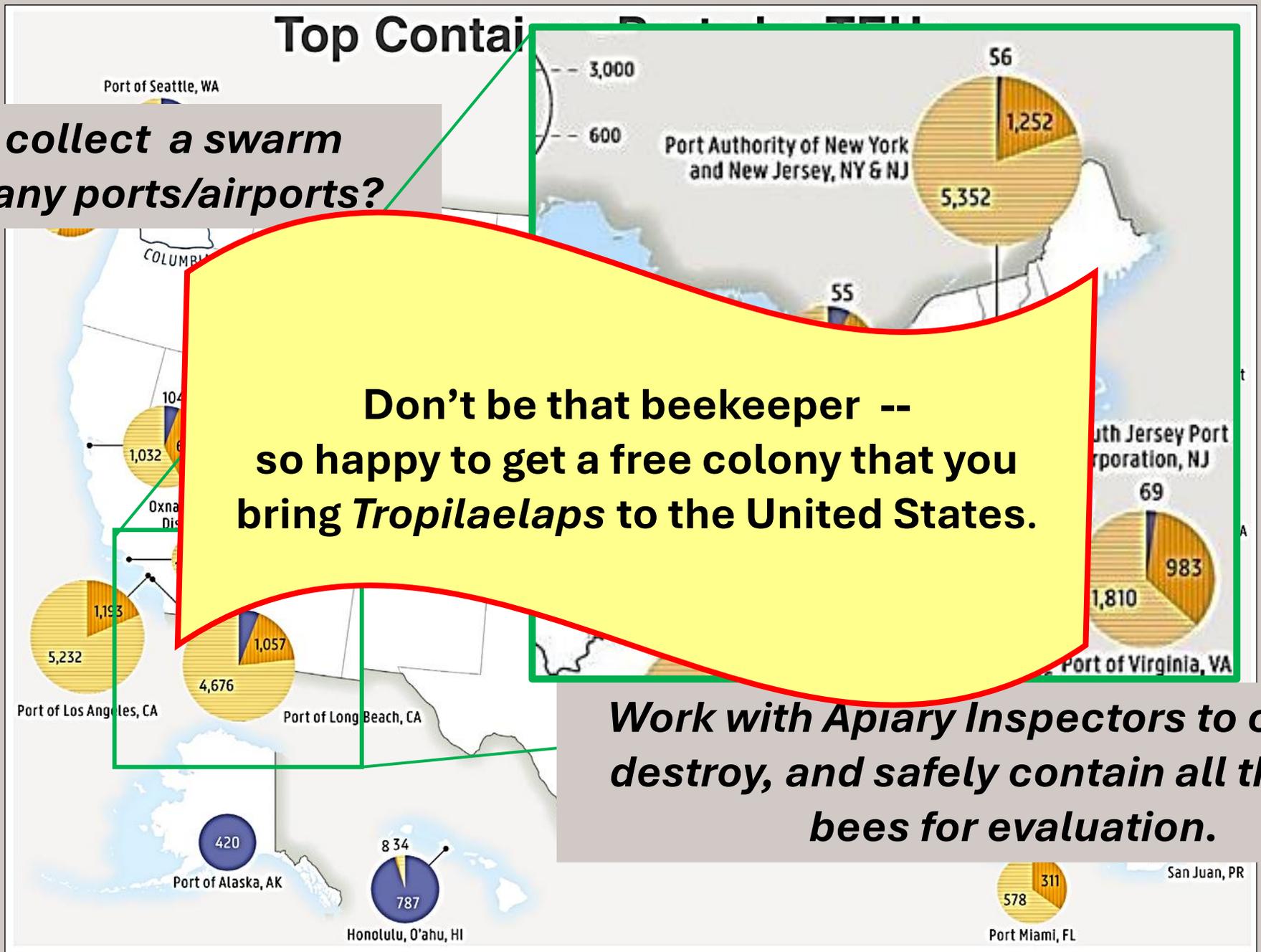
# What Maryland beekeepers can do now

***Called to collect a swarm close to any ports/airports?***

**Top Contai**

**Don't be that beekeeper --  
so happy to get a free colony that you  
bring *Tropilaelaps* to the United States.**

***Work with Apiary Inspectors to capture,  
destroy, and safely contain all the dead  
bees for evaluation.***



# What Maryland beekeepers can do now

**Report anything that doesn't look right –**

***pictures, insects in alcohol, ask for a visit from our apiary inspectors***

## Tropi Look a-likes



Photo by AHPA Bee Unit York. UK Crown Copyright.  
OIE Terrestrial Manual 2018.

- Visual identification of *Tropilaelaps* can be challenging.
- There are look-alike species that can be present in a honey bee colony.
- Notice an unusual mite during routine *Varroa* mite monitoring (sugar shake, alcohol wash, sticky board)? Report suspect specimens to your state apiarist.
- Take a picture and make sure to collect the specimen for further confirmation.
- Specimens can be put into a small container or placed in a vial of alcohol.

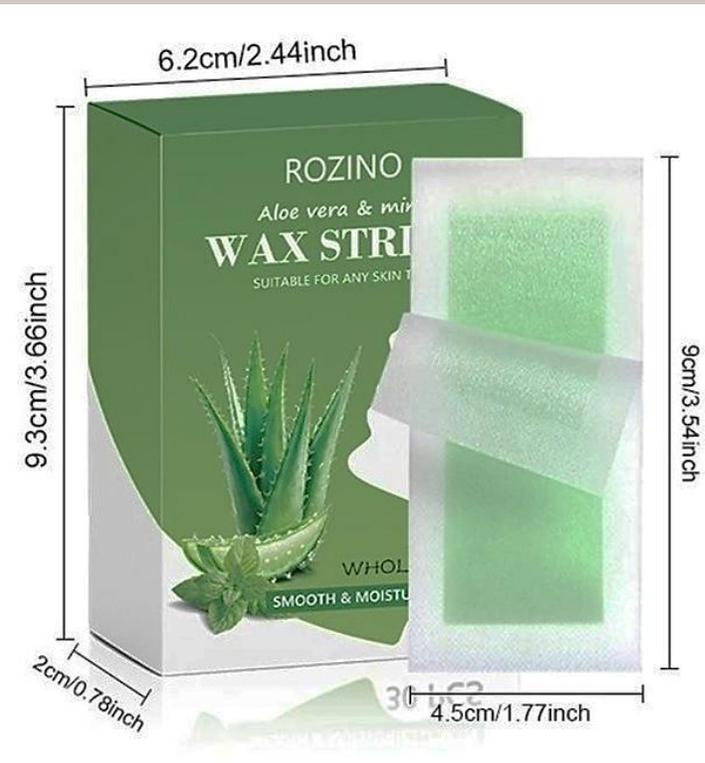
What Maryland beekeepers can do now

## Learn how to detect Tropilaelaps

- Tropilaelaps spend most of their time in sealed brood cells
  - Look in sealed brood cells

One of the best methods – **Rapid Brood Decapping**<sup>1,4</sup>

By repurposing a wax hair removal strip, brood cappings are rapidly removed allowing the beekeeper to quickly detect Tropilaelaps.



This method requires a few basic items:

- Forceps/Tweezers
- Waxing (depilation) strips
- A smart phone or camera to record the uncapped brood and to assist with mite identification



# What Maryland beekeepers can do now

Check your colonies - **Rapid Brood Decapping**<sup>1,4,8</sup>

FYI: 20° - 30°C = 68° - 86°F

Find this video  
here



See Citations  
for another  
excellent video

**Quick**

**Low Cost**

**>90%  
Effective  
detecting  
*Tropi.***

**Added benefit:  
does NOT harm bees or colony;  
more than 90% of uncapped brood  
survive when the frame is returned  
to the colony**

# What Maryland beekeepers can do now

*Spread the word to other beekeepers*

- Prevent accidental spread*
- Early detection is crucial to preventing their spread*
- Let's improve Tropilaelaps surveillance*
- Increase beekeeper awareness + education*
- Keep Learning*



**Petition for Stronger Management of Invasive Pests Threatening Honeybees and Native Pollinators**

[becausealliance.org/tropilaelaps-petition/](http://becausealliance.org/tropilaelaps-petition/)



**“By spreading the word, we can help STOP *Tropilaelaps* in its tracks. It is not thought to be in North America yet; let’s work together to safeguard our pollinators from this emerging threat.”**

# RESOURCES

*Where to go  
for  
more info*

- Maryland Apiary Inspectors
- Books and Research papers
- Websites and Blogs
- YouTube

*Research-based  
Up-to-date*

# RESOURCES

## Maryland Apiary Inspectors



### **Cybil Preston**

Chief Apiary Inspector

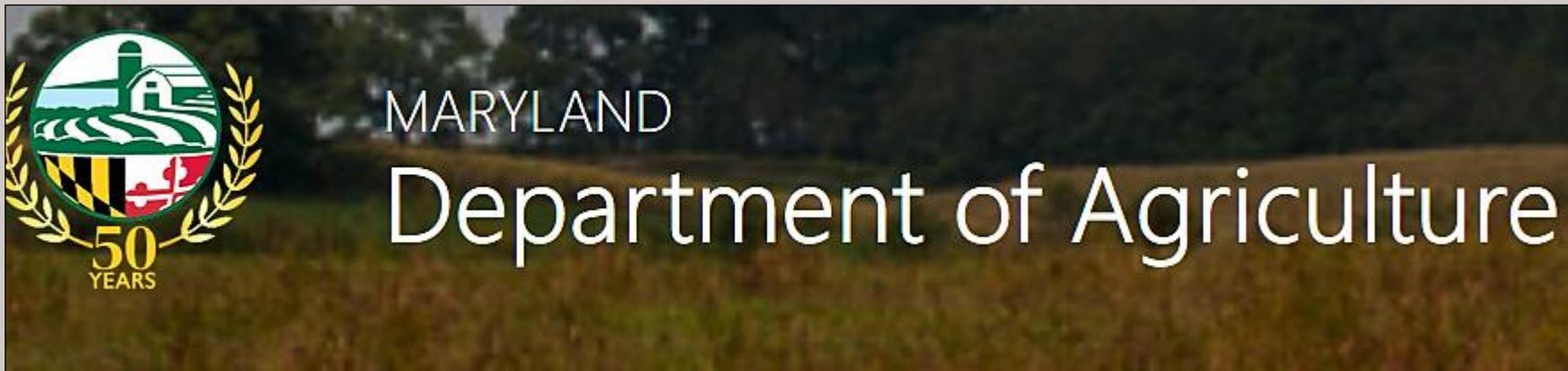
State Apiarist

Phone 410-841-5920

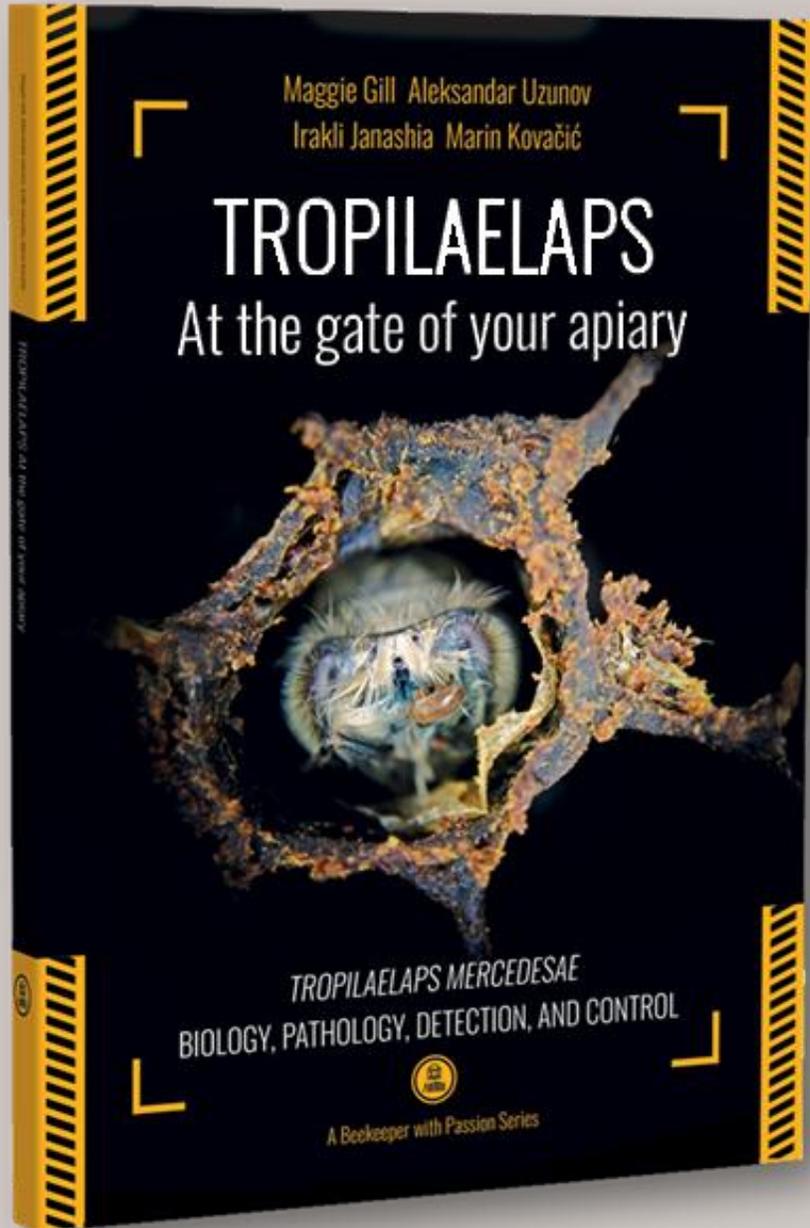
Cell 410-562-3464

Email: [cybil.preston@maryland.gov](mailto:cybil.preston@maryland.gov)

[https://mda.maryland.gov/plants-pests/pages/apiary\\_inspection.aspx](https://mda.maryland.gov/plants-pests/pages/apiary_inspection.aspx)



# RESOURCES



***Book:***

**[TROPILAE LAPS At the gate of your apiary](#)**

USA Distributor



**Betterbee.com**

# RESOURCES

## Website



PHIRA-Science  
[www.phira-science.org](http://www.phira-science.org)



@PHIRA-Science



PHIRA-Science



phirascience



@phirascience



@PHIRA\_Science

Pollinator Health International Research Association

# RESOURCES

## YouTube Videos

Research-based

Up-to-date



### UFhoneybeelab

@UFHoneyBeeLab1 · 12.1K subscribers · 354 videos

The University of Florida Honey Bee Research and Extension Laboratory



### Michigan State University Beekeeping

@michiganstateuniversitybee4597 · 7.03K subscribers · 57 videos

More about this channel ...more



**AU-BEES**  
AT AUBURN UNIVERSITY

### Auburn University Bees

@auburnbees · 845 subscribers · 28 videos

Welcome to the YouTube home of Auburn University's Bee Lab!

[aub.ie/bees](http://aub.ie/bees)



### PHIRA Science

@PHIRA-Science · 149 subscribers · 10 videos

PHIRA-Science is the Pollinator Health International Research Association

[phira-science.org](http://phira-science.org)

No particular order  
– it's how they fit on  
the slide

Published November 26, 2025

# North American Bee Strategy

A path for pollinator health  
and a fair honey market



## RESOURCES

### 1<sup>st</sup> ever - North American Bee Strategy

A cross-border collaboration to create a continent-wide plan to protect honey bees.

Addresses several initiatives, including...

**Tropilaelaps Preparedness:** Immediate tightening of import controls, unified federal response plans, sentinel hive monitoring networks, and early detection systems before the pest arrives in North America.

<https://honeybeehealthcoalition.org/nabs/>

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Another Rapid Brood Decapping Instructional Video: [https://www.youtube.com/watch?v=\\_EDaf6GQXJI](https://www.youtube.com/watch?v=_EDaf6GQXJI)

[https://idtools.org/bee\\_mite/](https://idtools.org/bee_mite/) USDA website that can identify adult and immature mites found on or in bees or their nests and distinguish harmful mites from non-harmful mites... extensive Images, Fact Sheets Quick Reference Guides & Glossary NOTE: last updated Oct 2016

[www.padil.gov.au](http://www.padil.gov.au) A great site for high quality color images of the most serious pest threats to Aussie beekeepers, including Varroa mites, *Tropilaelaps* mites, the acarine mite and Asian honeybees.

Video of *Tropilaelaps* Moving on honeycomb [https://videos.files.wordpress.com/CHCRvZJf/tropilaelaps-mites-on-honeycomb\\_hd.mp4](https://videos.files.wordpress.com/CHCRvZJf/tropilaelaps-mites-on-honeycomb_hd.mp4)  
Above video from: Today, Entomology. “Get to Know *Tropilaelaps* Mites, Another Serious Parasite of Honey Bees.” *Entomology Today*, 17 Apr. 2017, <https://entomologytoday.org/2017/04/17/get-to-know-tropilaelaps-mites-another-serious-parasite-of-honey-bees/>. Accessed 21 Sept. 2024.

***Monitor Your Colonies***  
***Spread the Word***  
***Keep Learning***

*Many Thanks to researcher and beekeeper*

***Maggie Gill***

*for generously sharing knowledge, slide materials, and reviewing this content*

**THANK YOU**

***Together we can make a difference!***

QUESTIONS?