

# Investigating Heating Pads as a Means of Combating

## Varroa Mite Infestation of Honey Bee Hives

Clark Howard, Natalie Rose, Curtis Schaff, Gwendolyn Wentworth

### Background

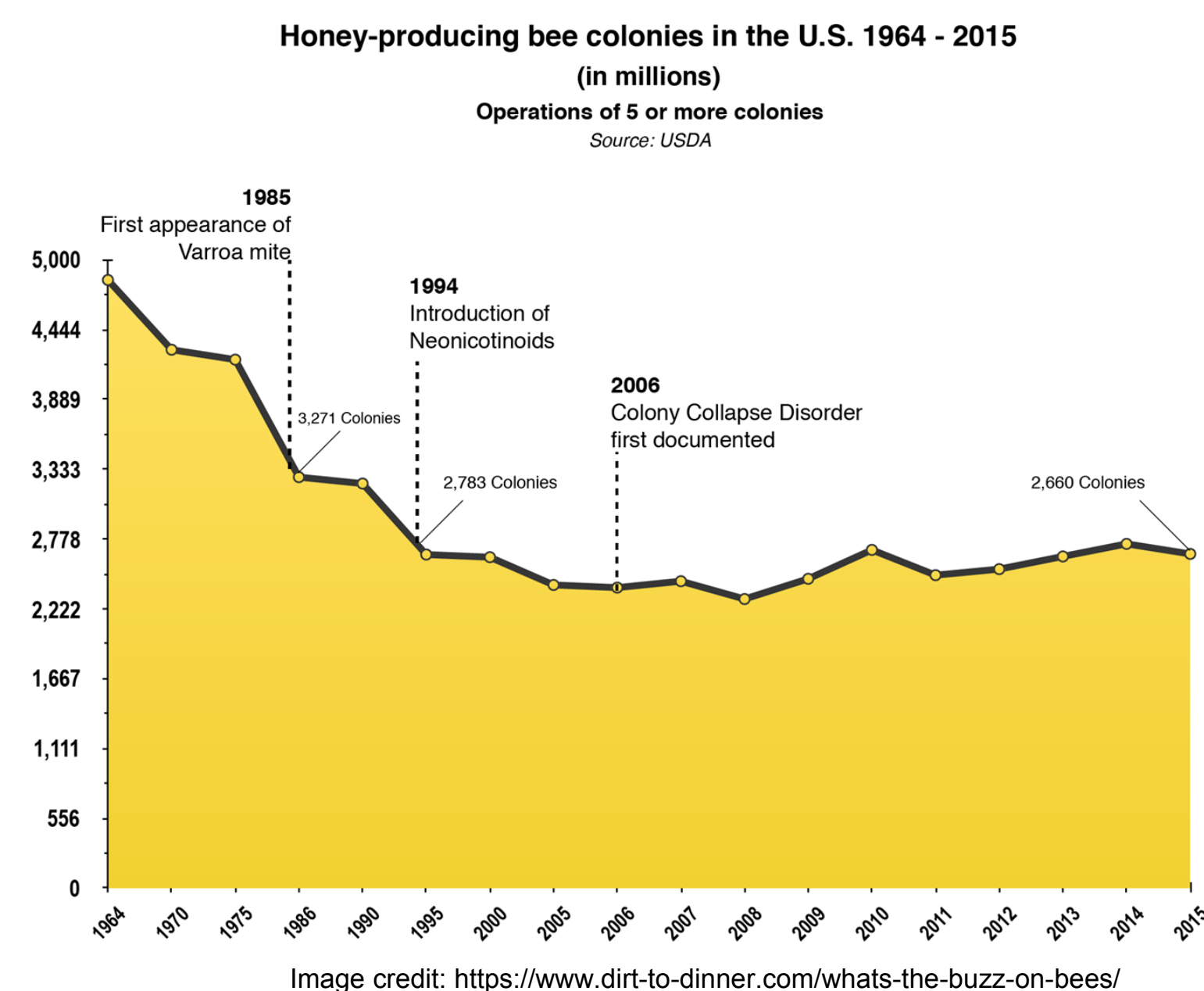
#### What's a Varroa mite?

- A tiny parasite that feeds off honey bees' fat.
- Enough mites in a beehive can lead to the collapse of the colony



#### Why does it matter?

- Varroa mites one of the leading causes of Colony Collapse Disorder (CCD) (2018)
- CCD causes an average of 30% of all attempted hives to collapse (2018)
- Roughly 30% of our diet directly or indirectly benefits from honey bees as pollinators (2018)



### Experimental Setup

#### How it works

- Heating pad heats up the inside of the beehive to exactly 106 degrees Fahrenheit for 2.5 hrs (Industries)
- This temperature is slightly above what varroa mites can survive and just below what honey bees can
- The varroa mites die and fall to the bottom board of the hive
- Repeat heating cycle 3 times a year (Industries)

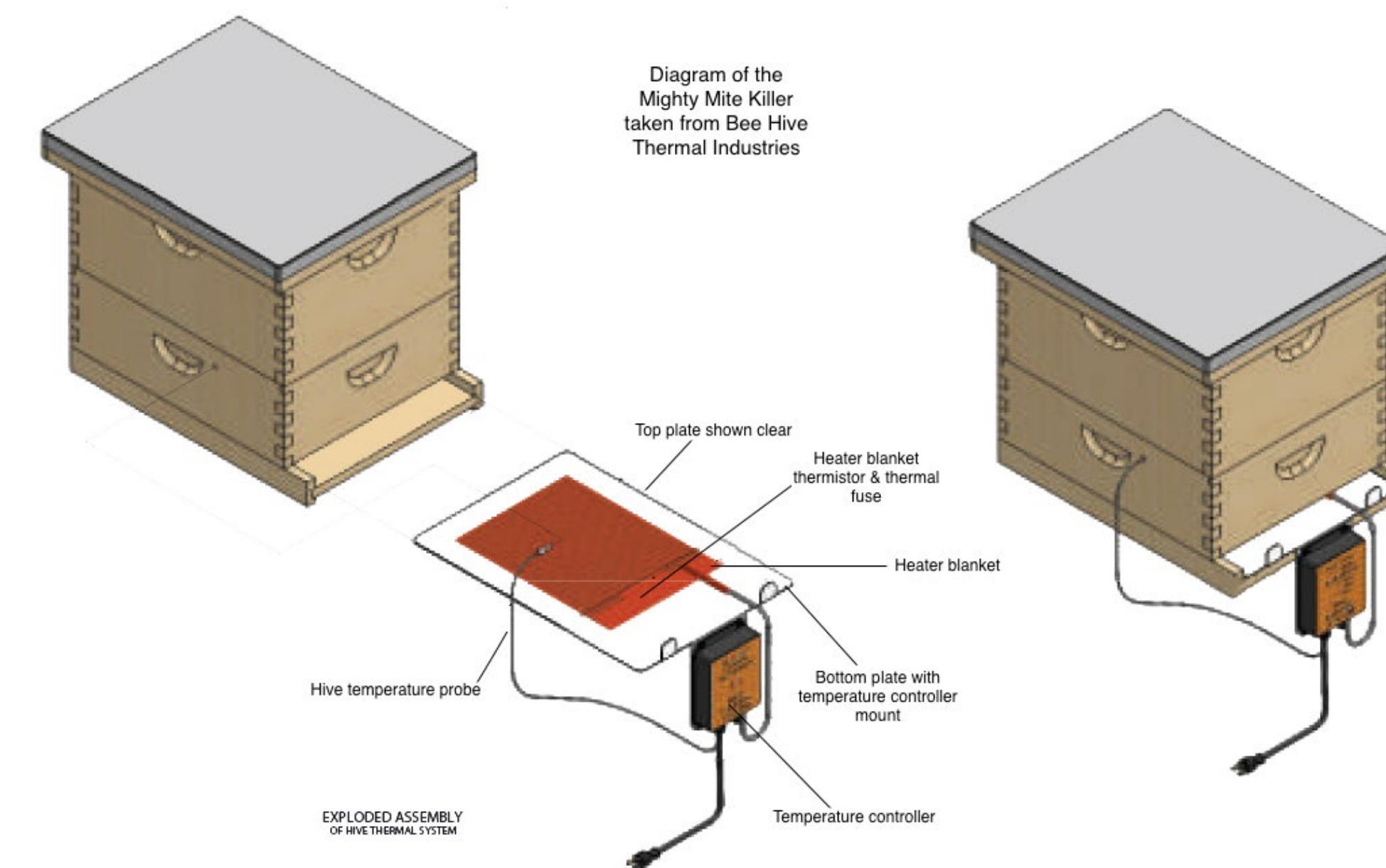


Image Credit: Bee Hive Thermal Industries

### Preliminary Results

Initial testing conducted by members of the Volusia County Beekeeping Association indicates that the heating pads are:

- Safe for bees
- More effective than other methods at killing Varroa mites
- Faster-acting than other methods

#### Bibliography

(2018, August 6). *ARS Honey Bee Health and Colony Collapse Disorder*. Retrieved from [www.ars.usda.gov/oc/br/ccd/index/#public](http://www.ars.usda.gov/oc/br/ccd/index/#public)

Industries, Beehive Thermal. *How It Works*. Retrieved from [www.beehivethermalindustries.com/how-it-works](http://www.beehivethermalindustries.com/how-it-works)

(2017, April 5). *What's the Buzz on Bees*. Retrieved from <https://www.dirt-to-dinner.com/whats-the-buzz-on-bees/>