

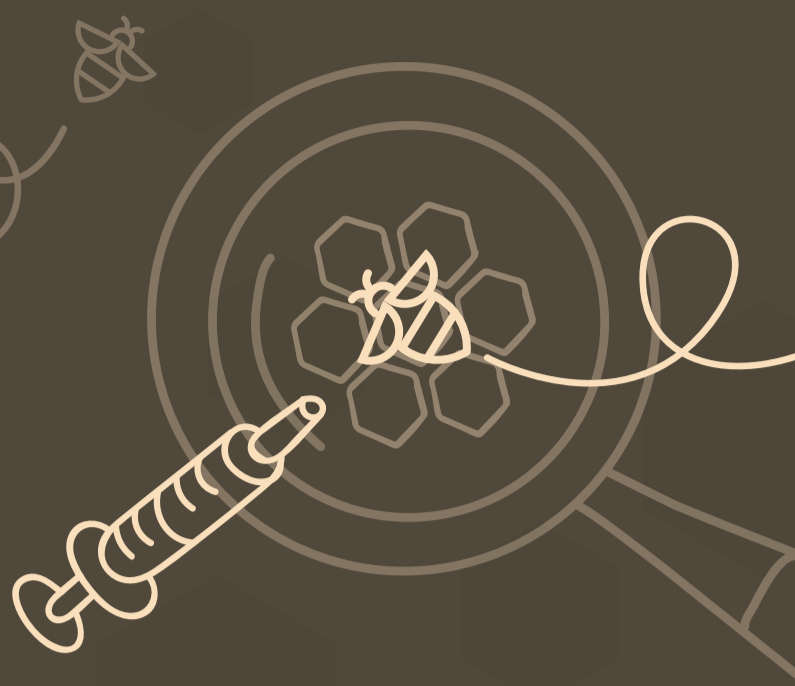
## BIOSECURITY MEASURES IN BEEKEEPING | VARROOSIS

Biotechniques

# Heat Treatment

Heat treatment is a sustainable, chemical-free method for managing varroa mites in bee colonies.

By exposing the colony to temperatures above 42°C for a controlled period of 2 to 3 hours, the mites are eliminated without harming the bees (the temperatures and timings depend on the methods used). Specialised equipment can be used to treat either the entire colony or just the capped brood frames, effectively targeting mites on adult bees as well as within brood cells. This approach works in regardless of honey harvesting or weather.



**step 1**

Choose a proper device that is certified for heat treatment of bees.



**step 2**

Connect the device to an electrical outlet. In the field, you can use a small generator.



**step 3**

Heat treatment systems often regulate humidity during the process. Add a sufficient amount of water to the bottom compartment.



**step 4**

Turn on the system. After preheating you can insert the desired amount of brood frames. Be careful, you cannot mix different types of frames during the process.



**step 5**

Insert the thermal probe to ensure proper change in temperature. You should put the sensor into the middle of the center frame, that you insert last.



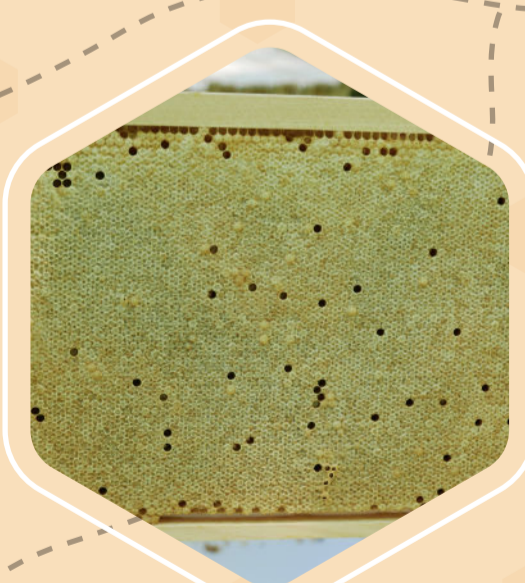
**step 6**

The position of the probe is crucial for the effectiveness of thermal treatment. The probe should not stick out of the frame and should be placed diagonally in the frame.



**step 7**

Close the lid and start the program of the device. The timer should make a sound once the cycle is finished. This step lasts around 2 hours.



**step 8**

Insert new frames into the machine or finish the treatment by turning off the device by cleaning it. Don't forget to discard the rest of the water. Moving the device with water still inside can damage it.



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