

Alternative Methods to Control Wax Moth

The serious concerns raised by the Bee Products Standards Council to the risks that residues of PDB (para dichloro benzene) is presenting to the bee product market means that beekeepers who have a problem with wax moth will need to use alternative control methods. The following options are available.

Temperature extremes can be used as a non-chemical control measure for wax moth control.

Heat All stages of the greater wax moth are killed at a temperature of 46°C for 80 minutes or a temperature of 49°C for 40 minutes. Be sure to allow combs to reach the required temperature before measuring the exposure time.

Caution is advised when heat-treating and the heat **MUST** be circulated to avoid hot spots which would melt the wax. Be careful not to expose honey combs to temperatures in excess of 49°C because combs softened at high temperatures may sag and become distorted. Heat-treat supers of combs only when they are in the normal, upright position. Provide adequate air circulation for the heat to be evenly distributed throughout the comb. Ventilating fans are useful for this purpose. Turn the heat off and allow combs to cool before moving the supers.

Cold Wax moths are also killed by low temperatures. The use of low temperatures can prevent the sagging problem which sometimes occurs when combs are treated with heat. Combs with honey and pollen can be treated by use of low temperatures without much danger to the combs.

Care should be taken when treating with cold because beeswax becomes brittle and breaks easily. The minimum temperature and exposure time needed to destroy all stages of the greater wax moth are shown in the following table.

Temperature	Time In Hours
-7°C	4.5
-12°C	3.0
-15°C	2.0

Once the combs are treated, store them where no adult wax moths can get to them. Inspect combs monthly for any signs of infestation, especially if temperatures rise above 15.5°C.

Carbon dioxide (CO₂) at concentrations above 95% can effectively control wax-moth. For further information see Morse, R. A., 1978, Honey Bee Pests Predators and Diseases. Cornell University Press, London. Please note that fumigation with carbon dioxide (CO₂) is extremely dangerous, not because the chemical is inherently toxic, but because the user is at risk from suffocation. It is not recommended for the amateur!

Wax moth trap Take a 2 liter plastic coke bottle and drill a 1 inch hole just below the slope on the neck, then add 1 cup water, 1 cup sugar, ½ cup vinegar and finally 1 banana peel. Wait a few days till it starts to ferment, then tie it into a tree close to the hives. This trap will draw the wax moth, they enter the hole can't get out and drown in the liquid.

Storage Some of the worst cases of wax moth damage occur in stacks of supers. This appears to be the ideal environment for the moth larvae, which build up to large populations quickly.

When separated and suspended on racks under sheds and, thus, exposed to ventilation and light, the combs often suffer little damage. The environment caused by this storage technique apparently is not so conducive to wax moth buildup as when combs are stored in stacked supers.

Supers can be stacked at right angles to each other so the corners are ventilated and lighted to reduce wax moth problems. Although not applicable to every beekeeper's style, this storage technology, providing maximum ventilation and lighting, is one alternative to chemical fumigation that might be explored in the constant search for adequate wax moth control in stored comb.

Older comb is more susceptible than foundation or newer combs. This is another reason for embarking on a regular comb renovation program.