

## Practical Experiences

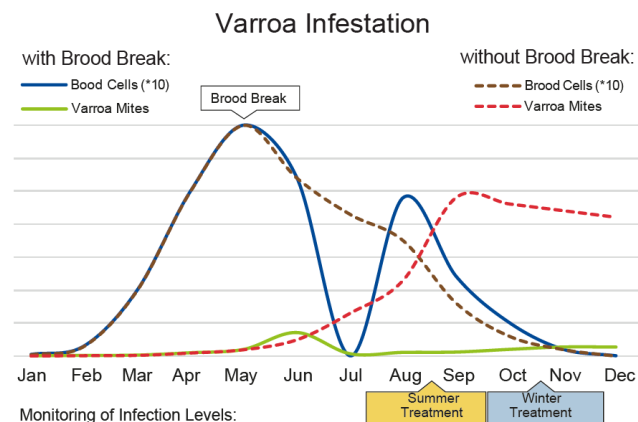
Research of the **Artificial Brood Break Method (3)**, done in July and August (Bieneninstitut Kirchhain), has shown that there is neither a higher queen mortality, nor a weakening of the hive. Typically, the queens start laying eggs right away after their release.

Already one month later, the hives have more brood than the control hives treated in July with Formic Acid. At this point, the hives can be easily re-queened, if needed.

In addition to the effective Varroa treatment, the honey yield can be increased through this intervention. If the queen is caged about two weeks before the end of the honey flow, the bees that continue to hatch, no longer have to look after young brood, which reduces the need for food.

At the same time, the nectar intake of the colony increases because more bees are available for foraging activities.

Before the acid treatment, however, the honey must be harvested.



Graph of characteristic development of Varroa in colonies with and without brood break (Bieneninstitut, Kirchhain).

## Short and Sweet

### Advantages

- Combined biotechnical and chemical treatment.
- Easy re-queening, if required.
- Queen caging during nectar flow can increase the honey yield.

### Requirements

- Queen has to be caught.
- Queen cage is required.
- Honey must be harvested before the treatment with Oxalic Acid.

### Timing

Two to three weeks before the end of the last nectar flow.

### Original Version and Design by

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# Comox Valley Bee Club



## The Artificial Brood Break Method

### Effective Varroa Treatment with Queen Caging



## The Concept of the Artificial Brood Break Method

In contrast to the **Varroa Trap Method (2)**, the **Artificial Brood Break Method (3)** prevents the queen completely from laying eggs. The existing brood stays in the colony and can continue to develop. After 25 days at the latest, the last bees and mites have hatched and the colony is completely brood-free. The varroa mites can no longer multiply inside the brood and are in their phoretic stage on the bees.

As with the **Varroa Trap Method (2)** and the **Complete Brood Removal Method (4)**, the brood break itself inhibits the population growth of the mites. In addition to being free of brood, the hive can effectively be treated with Oxalic Acid. The colony, on the other hand, can easily compensate for the interruption and usually has a sizeable brood nest just a few days after the queen has been released.

In order for the queen to be accepted again later, 'walk-through cages' with queen excluder size grids must be used in which the worker bees are able to enter and leave the cage.



Examples of commercially available queen cages for the Artificial Brood Break Method.

## Application of the Artificial Brood Break Method

### Step 1

#### Day 0

- ◆ Install queen cage in comb.
- ◆ Place queen into cage.
- ◆ Place comb with cage and queen into the uppermost brood box, so that the queen is in the centre of the hive.
- ◆ Use special cages with queen excluder size grids (worker bees need to be able to enter and leave the cage).

### Step 2

#### Day 25

- ◆ Release the queen.
- ◆ Remove the comb with the cage from the hive and replace it with an empty comb or a foundation.
- ◆ Treat with Oxalic Acid by vaporizing, spraying or dribbling.
- ◆ Use approved products and safety equipment as usual.



The three main delivery methods of oxalic acid for the treatment of Varroa mites in bee colonies.



Install the queen cage on an empty comb.



Insert the queen into the cage through the entrance hole and close the entrance (LLH, Kirchhain).



Place the frame with the cage in the centre of the upper brood box (LLH, Kirchhain).