

## Varroa mites Lifecycle

Varroa mites survive our winter on the adult bee but need to reproduce on their brood. They reproduce on a 10-day cycle. The female mite enters a honey bee brood cell and as soon as the cell is capped, the Varroa mite lays eggs on the larva which hatch into several females and typically one male. The young mites hatch in about the same time as the young bee develops and leave the cell with the host. When the young bee emerges from the cell after pupation the Varroa mites also leave and spread to other bees and larvae. The mite preferentially infests drone cells.



**Varroa on a Pupa**

The adults suck the "blood" of adult honey bees for sustenance, leaving open wounds. The compromised adult bees are more prone to infections.

The European *Apis Mellifera* bees are almost completely defenseless against these parasites. The mite population dynamics is an exponential growth when bee brood is available and exponential decline when no brood is available. In 12 weeks the number of mites in a Western honey bee hive can multiply by (roughly) 12. High mite populations in the autumn can cause a crisis when drone rearing ceases and the mites switch to worker larvae, causing a quick population crash and often hive death.



**Varroa on a Honey Bee using an Electron Micrograph**

**To control their Numbers** it is necessary for the beekeeper to introduce a pest management regime now that Varroa has become resistant to Apistan & Bayvarol treatments.

The DEFRA booklet '**Managing Varroa**' [available from our library] details several methods to keep their numbers down. These range from:

- **Using Apiguard in the Spring & Autumn** when there is no honey in the supers.
- **Shook Swarm Technique, shaking icing sugar over the bees and Sacrificial Drone Brood.**
- **Oxalic Acid Treatment.**

**Sacrificial Drone Brood Technique.**



**Varroa mite on Drone Pupa. [picture courtesy of Paul Abbott]**



**Culling Drone Brood with Varroa. [picture courtesy of Paul Abbott]**

## Oxalic Acid - how to achieve 90/95% efficacy in treating Varroa

The most effective treatment is best carried out when there is little or no brood and the mites have had to move to the bees. This treatment uses a range of organic acids and the easiest one to apply is [Oxalic Acid](#) and this is detailed below.

Organic Acid treatments, in general, are best applied late November through to early January when there is no brood present. Out of all the Organic treatments the easiest to use is the Oxalic Acid Trickle method.

Oxalic acid is safer bought in powder or [tablet form](#) and mixed as required, at a strength of 3.2% with a 50/50 sugar/water solution, just enough for the number of colonies [say about. 35ml/colony].

The required quantity is 5ml/seam, so for a strong colony of say 7 seams of bees they would require 35ml solution, for smaller colonies, use proportionately less.

The equipment required is a honey jar containing a 3.2% oxalic acid solution in a 50/50 sugar/water solution, graduated syringe to dispense 5ml/seam, a pair of blue nitrile [rubber gloves](#) & a bottle of water in case of spillage as below:



The following links should give you all the detail on this method of treating your bees:-

<http://www.youtube.com/watch?v=Ht4hVbSraHg&feature=related>

**Or watch bees fighting varroa themselves.**

<http://www.youtube.com/watch?v=xSGa9DKraGA&NR=1> 9.38 minutes

<http://www.youtube.com/watch?v=EIYyCmOMmac> 1.11 minutes

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