Hyperthermia against the Varroa mite

15 years successfully using the Varroa Controller

Future-proof without chemicals during the bee year

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www.varroa-controller.com

VARROA controller

Organic beekeeper in Vienna

20 hives, 5 nucleus

VARROA controller

apitherapy und honey wine / mead

Varroa Controller

- **01** Hyperthermia with the Varroa Controller works for small and large apiaries.
- **02** Various models currently sold in Europe, Australia/NZ, Canada/US.
- **03** This is a beekeeping concept that enables strong, healty hives and higher honey yields.
- **04** Allows an effective treatment at the beginning, during and at the end of the bee year.

Successfully in the market since 15 years

How to do that in practice ?

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Main principle: Hyperthermia

- A tried-and-tested principle from the 1990s discovered from Prof. Engels – University Thübingen, DL
- Targeted heating of the **capped bee brood, where mites are locked in**.
- Biochemically: heat shock leads to permanent cell damage (Protein denaturation) – killing the mite.

A chemical-free treatment at the start of the season, but also throughout the beekeeping year.

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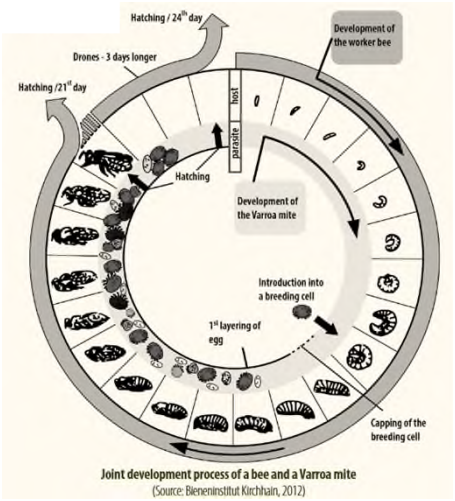
Biology of the mite - 3 facts to know

- The Varroa mite enters the cell just before capping. We know where they are!
- The population of the mites double per month! We know what will happen.
- In the cell, it takes 60 hours for the mite to pierce the pupa.
  We have time to react!



Joint development process of a bee and a Varroa mite
(Source: Bieneninstitut Kirchhain, 2012)

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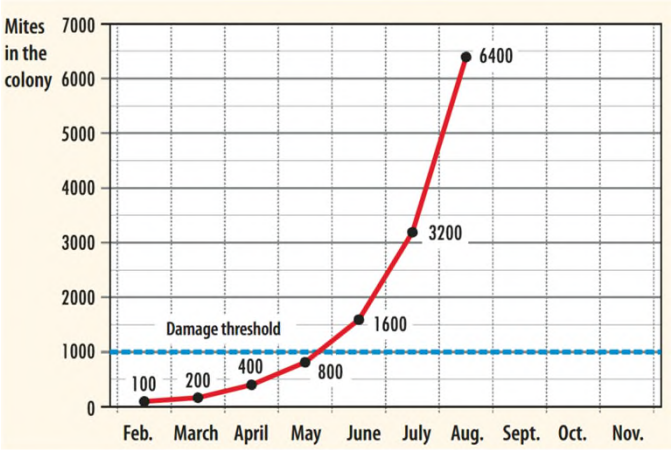
Uncontrolled reproduction of the mites



The damage threshold for a colony is approximately 1,000 mites—if this number is exceeded, it becomes dangerous.

What happens if nothing happens? A doubling every month!

Treating the Varroa mites in the brood? Yes, absolutely!...

In Spring 80% of *ready to reproduce* mites are in the capped brood.

In Summer 70% of mites are in the capped brood.

In Autumn 60% of mites are in the capped brood.

Three phases in managing the mite.

1. Early reduction of the mite population in spring

2. Trapping and removing mites in summer

3. Building up strong hives in autumn

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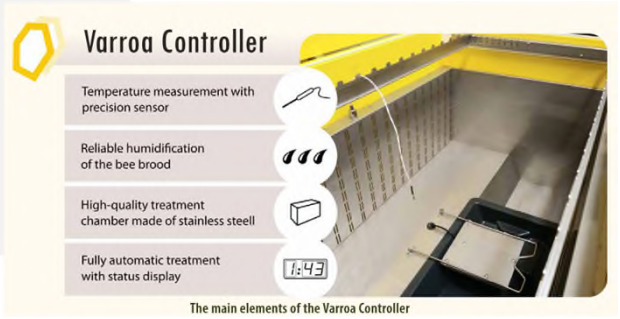
In Spring

Preparing at the apiary



The main elements of the Varroa Controller

Generator in the field.

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End of march at my stands …

Heat treatment in 7 steps

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7 Steps of treatment with the Varroa Controller

1. Preparing at the apiary
2. Filling water in the VC
3. Starting to heat the VC
4. Placing bee free **capped brood frames** in the VC
5. Applying the sensor
6. Starting the treatment
7. Bringing the brood frames back to the hives.

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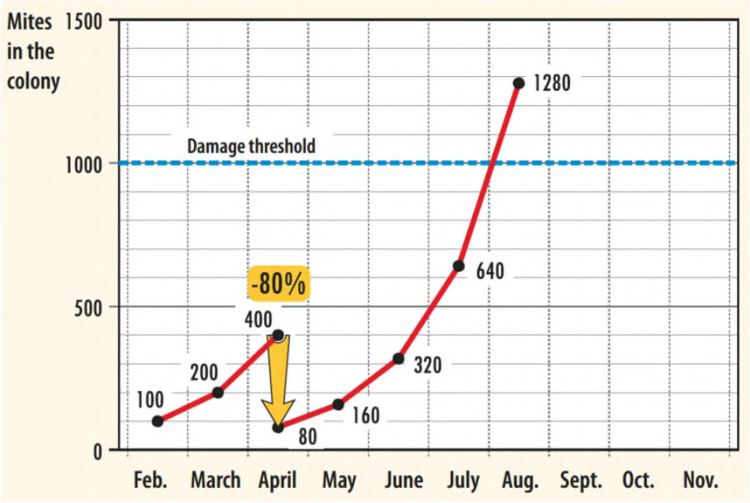

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In Spring

Eliminate mites and their offspring early!

- 2 to 3 capped brood frames treated with hyperthermia to keep mite level low from the start.
- One untreated mite develops to 32 mites in just 5 months.

Advantages

- Eliminates 80% of the *ready to reproduce* mites during the Spring treatment.
- Kills the mites in the capped brood.
- Enables long-term management of the bees´health.
- No more colony losses due to the Varroa mite.
- No chemical stress on the bees.
- Works well against mites after re-infestation.
- Optimizes honey yield.

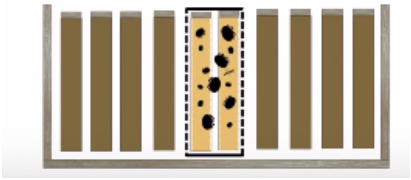
97% treatment efficacy - tested from beekeeping institutes in Belgium (2012) and Germany (2016).

In Summer

Catching and removing mites with the Duplex Framebox.

- Lock the queen bee with 2 frames **in the Duplex Framebox**.
- Exchange the brood frames after 12 days – Heat treat these frames.
- On day 24 all the mites are in the only 2 brood frames left– Heat treat these frames.
- Use the treated frames to build nucleus.
- Release the queen again.

Duplex Framebox



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In Summer

Finding the queen

Placing the Duplex Frame Box in the hive

Two capped brood frames after 12 (and 24 days) to heat treat.

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Important!

- **The capped brood combs must be treated immediately after removal from the Duplex Framebox bag on the 12th day.**
- **If treatment is delayed, the brood would be damaged by the mites and would no longer be usable!**

- **Two completely capped combs (from the Duplex Framebox) per hive on the 12th and 24th day.**
- **This means that the bee colony is free of mites and, in addition, there is a new colony and 20% more honey!**

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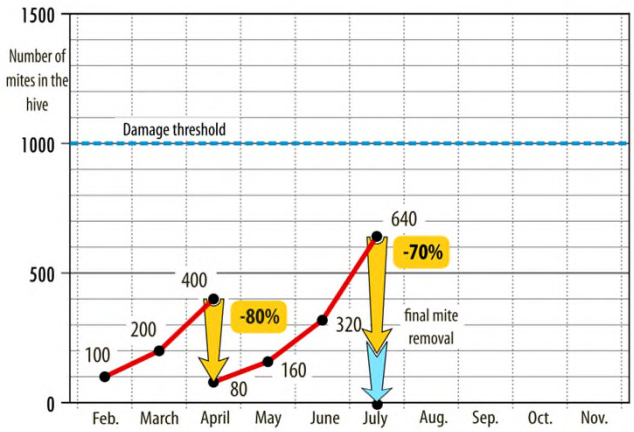

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In Summer

Get mite-free colonies, build nucleus and harvest 20% more honey!

- No mite pressure in the summer months
- Making new colonies with the treated frames
- Take advantage of a late nectar flow – your bees are safe.

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Advantages

Duplex Framebox

- Simple method for removing Varroa mites from productive hives
  Brood-free hive on day 24
- Higher honey yield
- Replace dark brood combs – which are now empty – with fresh ones
- Form new splits with brood from the Duplex Framebox
  (4brood frames+1kgbees+1queen)
- Good time to assess the queen – she can be replaced now if necessary.

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In Autumn

Repeating the treatment with 2-3 capped brood frames per hive - as in Spring treatment.

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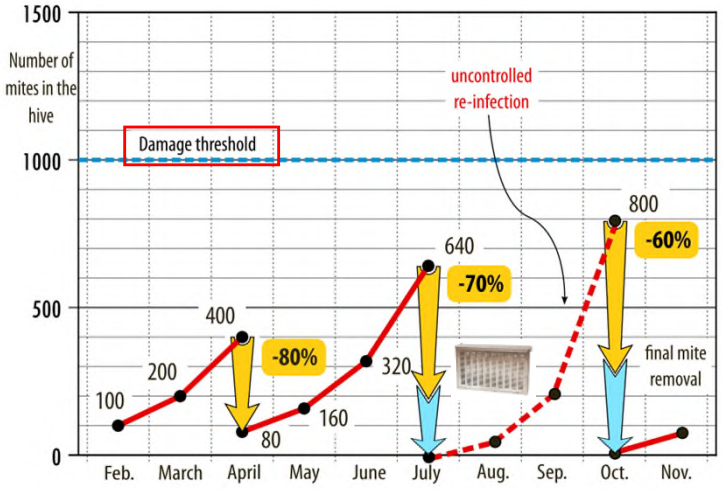

Autumn

Get the colonies fit for Winter and stay below the damage treshold at all times!

- Respond to any un-controller re-infection and prepare timely for the Winter.
- Final heat treatment between end of September and mid-October, incl. residual mite treatment.

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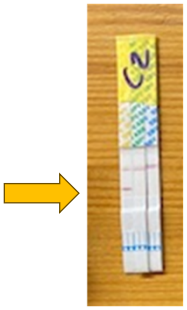
Back to the viruses

- In the meantime of can measure the virus load.
- Bee virus fast tests from Megacor
- After a heat treatment with the Varroa Controller the Deformed Wing Virus is not detectable any more.



Before, beginning of September

After, beginning of November

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Varroa Controller 4 models

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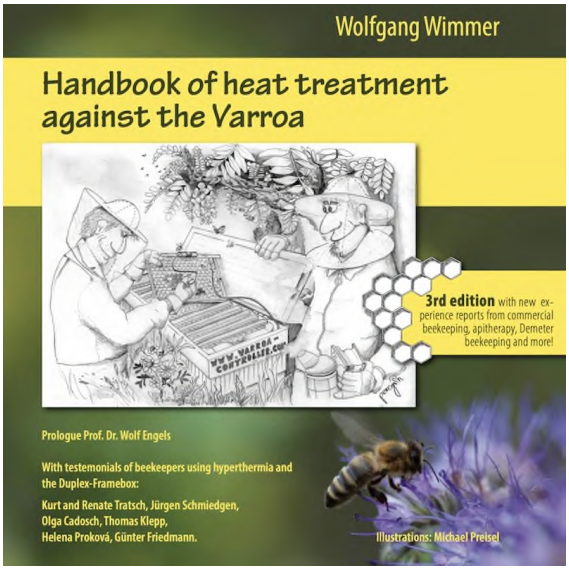
VC XLarge
20 large or 40 narrow

VC Standard
20 normal

VC Light
10 large or 20 narrow

VC Mini
10 normal



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Interested? more about heat treatment and user testimonials in my Handbook

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Download the Handbook for free!

Many thanks for your attention!

Are there any questions?

info@varroa-controller.com