

NASSENHEIDER®

Evaporator professional

Long-term evaporator for formic acid for the safe treatment of varroasis.

Operating instructions

Please follow these operating instructions exactly, since only then can a successful treatment be guaranteed!

NASSENHEIDER Professional Evaporator is a long-term evaporator for the continuous evaporation of formic acid 60% ad us. vet. for the varroasis (*Varroa destructor*) treatment of the honey bee (*Apis mellifera*).

NASSENHEIDER evaporator is a bee drug approved in Germany in conjunction with formic acid 60% ad us. vet. (published in Federal Law Gazette No. 31 dated 11th July 2000). The high effectiveness of the NASSENHEIDER evaporator has been proven in numerous scientific tests - for further information check our homepage. The established principle of dosing using the 2-wick-system has been maintained.

The formic acid long-term treatment ensures even the successful treatment of Varroa mites in the already sealed brood.

Areas of application:

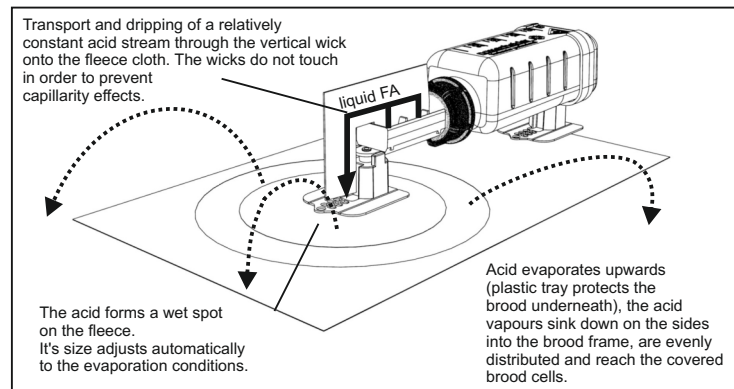
Varroa mite ("*Varroa destructor*) of the honey bee (*Apis mellifera*).

Counter indications

Do not use during the yield. Use only after the last honey harvest of the year. The waiting time to the next honey harvest is determined automatically by hibernation. No treatment may take place in the spring.

Functional principle of the evaporator

The vertical wick sucks the formic acid and transports it downwards onto the fleece cloth (horizontal wick) via the U-shaped leg, where it drips off and evaporates. The holed foot ensures that the two wicks are not touching (prevention of capillarity effects). In this way an almost constant volume flow of formic acid is transported and evaporated. The spot on the fleece cloth is larger or smaller depending on temperature and humidity. The evaporation surface regulates itself automatically.



Conditions for a successful treatment:

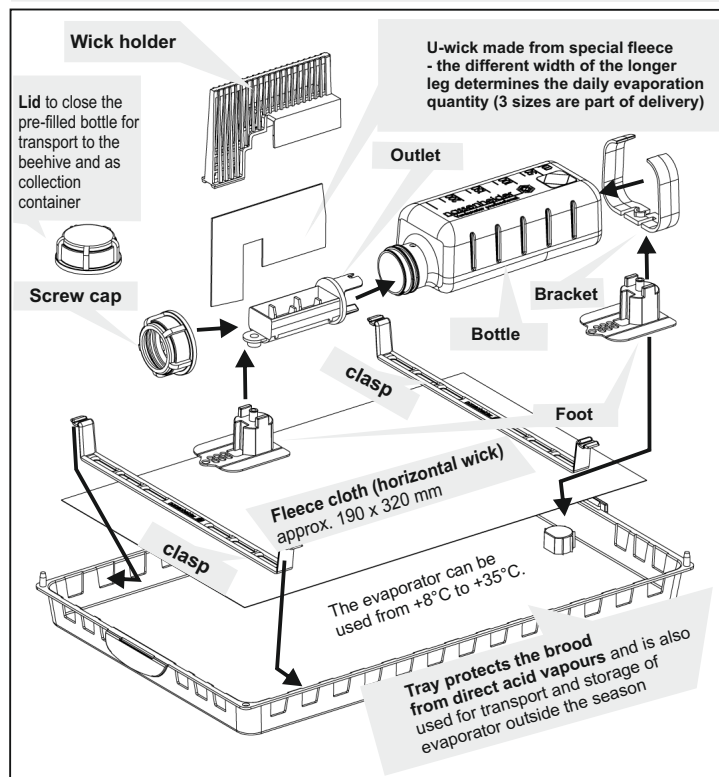
1. **Minimum treatment duration of 10-14 days** has to be adhered to since otherwise the acid would not work across a complete brood cycle! The treatment across a longer period, however, is not harmful.
2. Closing of the gridded floor during the treatment using the provided plates and foam strips.
3. Hives in a windy location are not ideal, therefore:
 - move the entrance hole away from the main wind direction
 - or use a hedge or fence as wind break
4. Observe mite fall during treatment: If the mite fall does not sink significantly after 14 days of treatment (e.g. due to reinvasion from a neighbouring hive), then treatment has to be extended or repeated after a short break.
5. For frames and hives only use stainless-steel-screws, nails and wire for long-term use.

Caution is advised during the use of formic acid treatment:

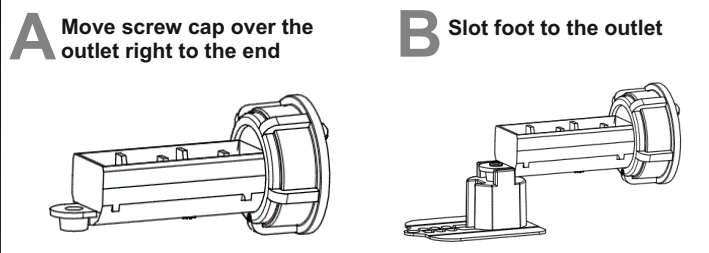
1. Always wear protective gloves, goggles, plastic apron and plastic boots when filling the bottle as well as when inserting it into the bee colony.
2. Only fill the evaporator outside.
3. Keep a bucket of water close by.
4. Keep formic acid out of reach of children.
5. The solution causes burns, do not inhale vapour.
6. If substance gets in contact with eyes, then rinse eye with plenty of water and consult doctor.
7. Immediately consult a doctor in the event of an accident or if feeling unwell.



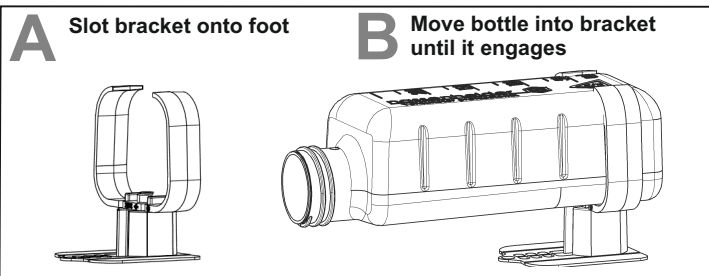
Set-up and assembly of evaporator



Assembly of outlet, screw cap and first foot



Assembly of bracket, second foot and bottle



Treatment process

1. At the apiary: Filling of bottle with **formic acid 60% ad.us.vet.** as per table:

Colony size / hive type	Daily doses	Filling / Requirement
6-9 honeycombs / offshoot	6-10 ml	140 ml
DNM/ Zander	10-15 ml	180 ml
Dadant DNM/ Zander two	20-25 ml	290 ml (fill completely)

For the evaporation as the last treatment in autumn (acc. page 4) at daily maximum temperatures between 10-15°C (we strongly recommend the use of formic acid 85%! This stronger dilution ensures the sufficient evaporation for a successful treatment).

2. **Transport of the bottles to the apiary** - for this purpose close the bottles securely and position them in an enclosed, acid-resistant plastic box for safety reasons.

The use of the evaporator is at one's own risk! ①



Attention: Adhere by all means to the safety precautions (see page 1 below on the left!)

- 3. Connecting the outlet, final assembly of evaporator**
- wear protective gloves
 - put on outlet straight
 - take care of catch and lug
 - tighten screw cap on the bottle tightly

Attention:

Assembly has to be carried out in vertical position (see image)!

- 4. Spread fleece cloth in tray and fix it with the two clasps**

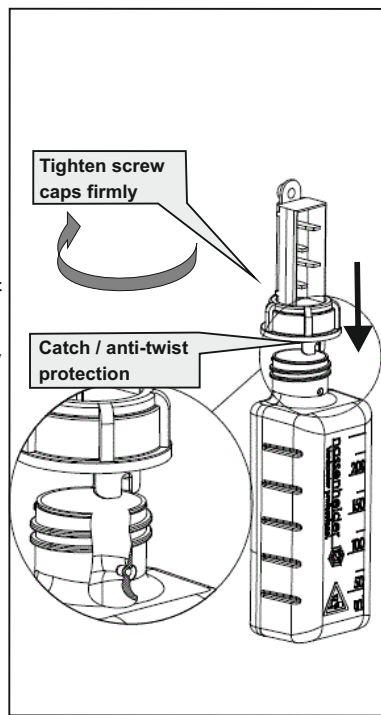
- 5. Put assembled evaporator into tray**

- for this purpose put the back foot across the base into the tray

- 6. Important: Check tightness of the screw connection**

- position the provided lid under the screw connection with the opening facing upwards and check 24 hours later for possible drips.

If it drips, then check position and fit of the outlet and tighten the screw cap once again.



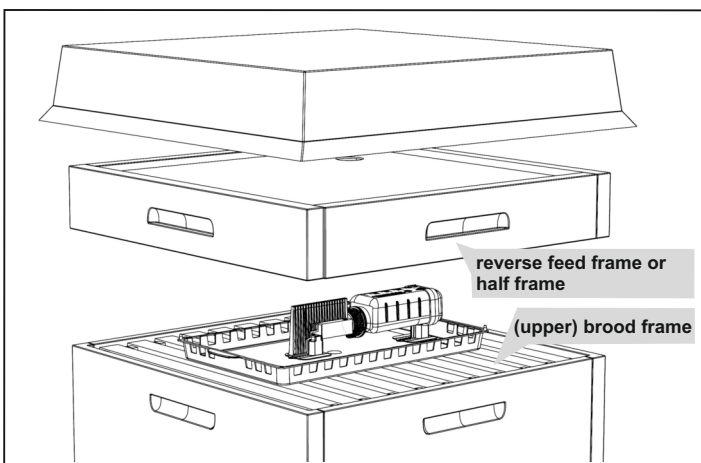
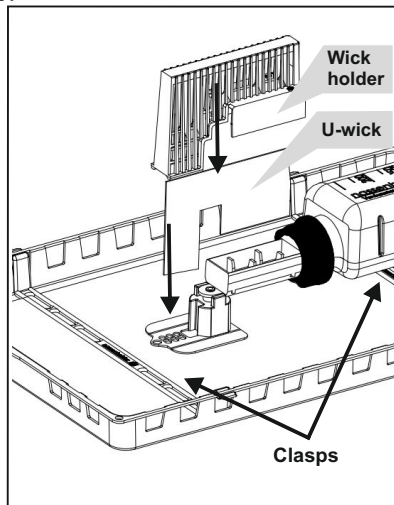
- 7. Selection of U-wick as per hive type**

Colony size / hive type	U-Docht
6-9 honeycombs /	Size 1 (small)
DNM/Zander or similar one frame	Size 2 (medium)
Dadant DNM/Zander or similar two frame	Size 3 (large)

Put U-wick straight into outlet

- 8. Put wick holder over U-wick and the outlet until it engages**

- 9. Place evaporator unit onto the brood nest frame, then put on a feed or half frame. You can also put a Varroa grid underneath, in order to prevent a bonding of the evaporator. This prevents the bees from getting into the evaporation space.**



- 10. Evaporator remains in beehive for 10-14 days**
Only take out after 10-14 days or when the formic acid has completely evaporated.

- 11. After 2 days check the evaporation quantities**
Check and calculate the daily evaporation quantities of formic acid according to the scale and as per the table on page 2: (6-10 ml / 10-15 ml / 20-25 ml per day). If necessary, adjust using smaller or larger wick.

Please note:
The wick size is adjusted to the hive size. The daily evaporation rate can increase slightly (up to 50%) depending on the weather and the behaviour of the bee colonies. **This increase in evaporation is, however, not harmful to your bees!**

Treatment concept throughout the year

Period	Measure	Additional information
April	Hang drone frame next to the brood nest then regularly cut out the freshly covered drone brood.	This measure reduces Varroa infestation significantly throughout summer.
July	We recommend mite control by counting the natural mite deaths on the Varroa floor: As of the 20th July, count fallen mites twice per week	Take out the last honeycomb and if necessary add enhanced feed in ideally one work step, do not enclose brood nest by giving winter feed too early.
Middle of August	1. Treatment with 60% formic acid (FA)	- set up evaporator on the brood nest - put turned over feeder frame or empty frame over it - close gridded floor
then	Feed	e.g. with feeder frame
September (4 weeks later)	2. Treatment with 60%FA	
October (another 4 weeks later)	3. Treatment (final mite removal) with 85% FA - highest day temperature > 10°C!	If strong infestation is suspected or reinvasion (e.g. due to robbing)
November	If you want to check if it has been successful: There should be no more than 1 dead mite per day. If the final mite removal has been successful then much better results are achieved.	

The use of the evaporator is at one's own risk!

Additional information

Please use the current information incl. FAQ list on the homepage of the manufacturer:
www.nassenheider.com

Homepage of inventor, Mr Becker:
www.bienen-becker.de

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