

# NASSENHEIDER®

## EVAPORATOR PROFESSIONAL

Long-term evaporator for formic acid for the varroasis treatment

Art. no. 30020

### Operating Instructions

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

**PLEASE NOTE: The manufacturer assumes no liability for damages resulting from failure to observe these instructions!**

**The use of the evaporator is at your own risk!**

Before using formic acid in concentrations greater than 60%, observe the local regulations ("Imminent Danger").

When using formic acid in concentrations greater than 60%, use a U-Wick one size smaller and fill the bottle with only ¾ of the amount listed in the table below.

**Check the contents of the packaging for completeness before using the evaporator. A package contains a total of two evaporators.**

Name/Description	Order No.	Scope of Supply	Name/Description	Order No.	Scope of Supply
Operating Instructions		1	screw-on unit	31035	2
tray	30023	2	clasp	31033	4
bottle	31003	2	fleece cloth (blue)	30017	2
stand bracket	31034	2	U-wicks	30010	1
wick holder	30022	2	(2 pieces each of U-wick small, medium, large)		
lid	31012	2			

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

The NASSENHEIDER Evaporator, together with formic acid 60% ad us. vet., is a bee drug approved in Germany (published in Federal Law Gazette No. 31, dated July 11, 2000).

The high effectiveness of the NASSENHEIDER Evaporator has been proven in numerous scientific studies - for further information, consult our website.

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

#### Areas of Application:

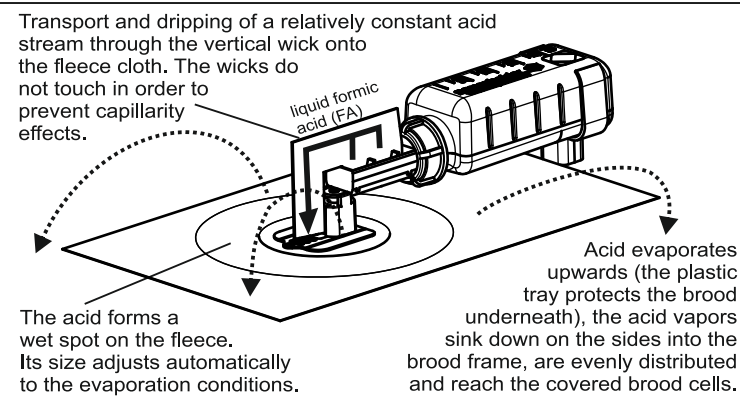
Varroa mite ("Varroa destructor) of the honey bee (Apis mellifera).

#### Counter Indications

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

#### Functional Principle of the Evaporator

The vertical wick sucks in 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 perforated foot ensures that the two wicks are not touching (preventing capillarity effects). In this way an almost constant volume flow of formic acid is transported and evaporated. The spot on the fleece cloth will be larger or smaller, depending on temperature and humidity. The evaporation surface regulates itself automatically.

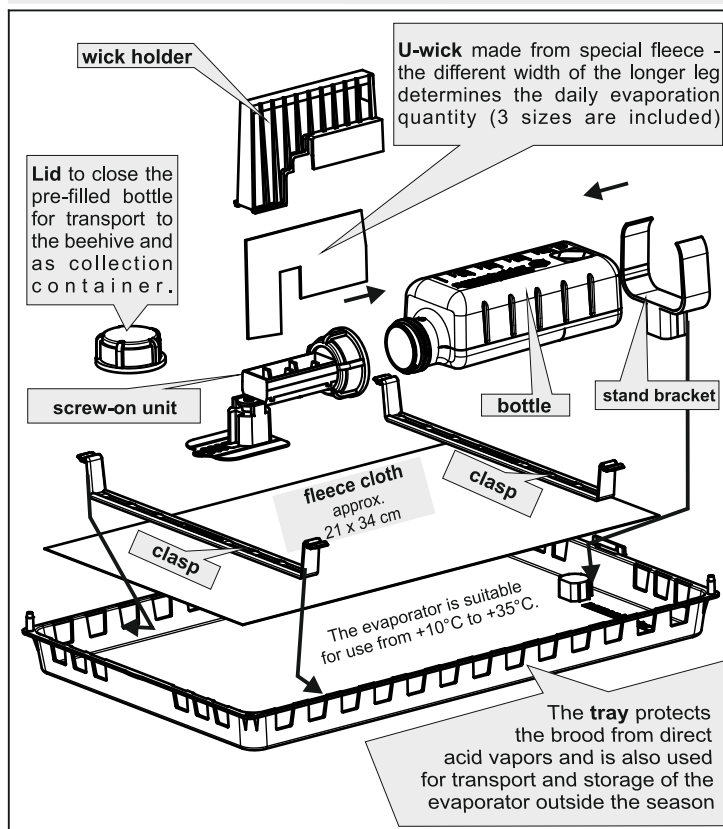


#### Caution is advised when using the formic acid treatment:

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 outdoors.
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 vapor.
6. If substance gets in contact with eyes, rinse eye with plenty of water and consult a doctor.
7. Immediately consult a doctor in the event of an accident or if feeling unwell.



#### Set-up and assembly of the evaporator



#### Conditions for a successful treatment:

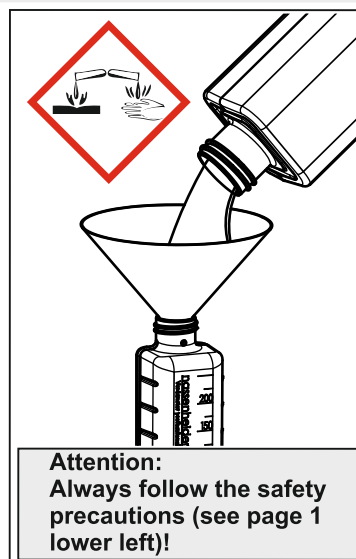
1. **Minimum treatment duration of 10-14 days** must be followed. Otherwise the acid would not work across a complete brood cycle! Treatment across a longer period, however, is not harmful.
2. Close the lattice floor during treatment with the appropriate plates and foam vor der Behandlung, strips.
3. Honey harvest and removal of the honey super before starting the treatment.
4. Regular opening of the entrance hole according to the hives size.
5. Hives in a windy location are not ideal, therefore:
  - turn the entrance hole away from the main wind direction
  - or use a hedge or fence as wind break.
6. Observe mite infestation during treatment:
  - If the mite infestation does not drop significantly after 14 days of treatment (e.g. due to reinvasion from a neighboring hive), then treatment must be extended or repeated after a short break.
7. Only use stainless steel screws, nails, and wire for long-term use for frames and hives.

#### Treatment Process

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

Colony size / hive type	Daily doses	Filling / Requirement
6-9 honey-combs / nuc	15 ml +/-20% (small wick)	180 ml
Langstroth/ Zander: One chamber	20 ml +/-20% (medium wick)	240 ml
Dadant / Langstroth/ Zander: 2 chambers	25 ml +/-20% (large wick)	290 ml (fill completely)

In certain areas, the application of 85% formic acid [FA] is permitted (e.g. "Imminent Danger"). If that is the case, it is recommended to use of 85% FA for the last treatment in fall. (see table on page 2).



**Attention:**  
Always follow the safety precautions (see page 1 lower left)!

2. **Transport the bottles to the hives -**

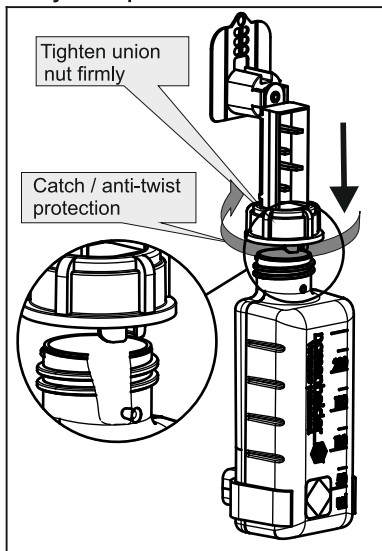
For this purpose, close the bottles securely and position them in an enclosed, acid-resistant plastic box for safety reasons.

**The use of the evaporator is at your own risk!**

3. Push stand bracket over the bottle from behind until it snaps in.

4. Connect the screw-unit, final assembly of evaporator

- wear protective gloves
- turn outlet straight
- watch for the catch and lug
- **firmly** tighten the union nut on the bottle



**Achtung:**  
Montage muss in senkrechter Stellung erfolgen (siehe Bild)!

5. Spread **fleece cloth** in tray and affix it with the two **clasps** (insert into opening from the side)

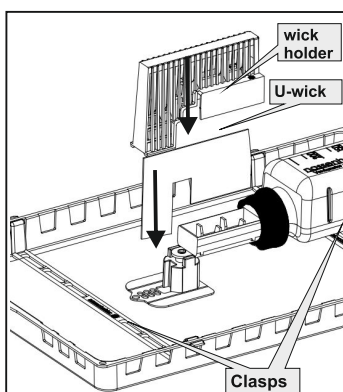
6. Put assembled evaporator into tray by putting the stand bracket over the base in the tray

7. **Important: Check tightness of the screw connection**  
position the provided lid under the screw connection with the opening facing upwards and check for possible drips 24 hours later. If it drips, check position and fit of the outlet and retighten the union nut.

8. Selection of U-wick as per hive type

Colony size / hive type	U-wick
6-9 honey-combs / nuc	Size 1 (small)
Langstroth/ Zander or similar: one chamber	Size 2 (medium)
Dadant Langstroth/Zander or similar: two chambers	Size 3 (large)

Put U-wick straight into outlet

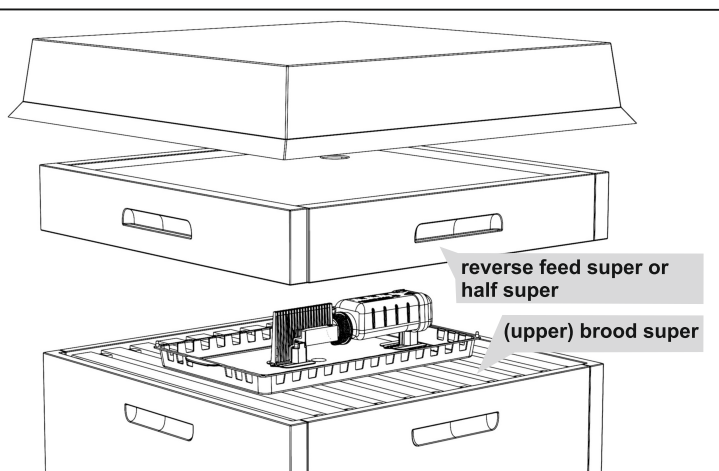


9. Put wick holder over U-wick and the outlet until it engages

Make sure that the evaporator is upright and that the U-wick and the fleece cloth do not touch (approx. 2mm gap).  
**Attention: Never put the wick holder over a wet U-Wick**

10. Place the 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.



11. The evaporator remains in the beehive for at least 10-14 days.

12. After 2 days, check the amount of evaporation

Check and calculate the daily evaporation amounts of formic acid according to the scale. Compare to required daily doses in the table on page 1. If necessary, correct by using a larger U-wick for more acid, or a smaller U-wick for less acid.

**Please note:**

The wick size is matched to the hive size. The daily evaporation rate can increase slightly (up to 50%) depending on the weather and the behavior of the bee colonies.

**This increase in evaporation is not harmful to the bees, however.**

Treatment concept throughout the year

Period	Action	Additional information
April - June	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.
June	Mite control is recommended by counting the natural mite deaths on the varroa floor: From about June 20, count fallen mites twice for one week.	
after the last honey harvest: mid July / August	<b>first treatment with 60% formic acid:</b> - set up evaporator on the brood nest - put reverse feeder super or empty super over it - close gridded floor	Remove the last honeycomb and, if necessary, supply bee food, preferably at the same time. Do not restrict brood nest by premature supply of winter feed.
<b>Attention: The evaporator is suitable for use from +10°C to +35°C.</b> Disregard the so-called "varroa forecast" since it only applied for outdated formic acid evaporation methods without automatic evaporation adjustment.		
then	feed	e.g. with feeder super
September (4 weeks later)	<b>second treatment with 60% formic acid</b>	
October (4 weeks later)	third treatment ("final mite removal") with 85% formic acid -> highest daytime temperature > 10°C!	If: - strong infestation is suspected - reinvasion (e.g. due to robbing)
<b>When using higher concentrated FA (&gt;60%) use a U-Wick one size smaller and fill 25% less acid into the bottle.</b>		
November	To check if treatment has been successful: There should be no more than 1 dead mite per day. With successful "final mite removal" much better results should be achieved.	

Durability of the U-Wicks and Fleece Cloth

The U-wicks should last at least 1-2 years, i.e. up to six treatment cycles. They must not be kinked, however. Always handle U-wicks with care! Do not put wick holder over wet U-wick! The durability of the fleece cloth depends heavily on the activity of the bees. It can be replaced easily.

The use of the evaporator is at your own risk!

Additional Information

Please refer to the current information incl. FAQ list on the website of the manufacturer: [www.nassenheider.com](http://www.nassenheider.com)  
Website of the inventor, Mr. Bruno Becker: [www.bienen-becker.de](http://www.bienen-becker.de)

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