



INSTANTVap 

InstantVap Vaporizer Operating Guide

June 2023

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WHAT'S IN THE BOX



Equipment Description:

When purchased from Beequip, the following items are included in the package:

1. InstantVap

18v Version shown above. The 12v version will include a 4m cord and Battery Clips.

2. Plunger

An adjustable plunger used to dispense accurate amounts of acid into the unit

3. Oxalic Acid

500g in the perfect size tub that is portable and easy to refill. OA must always be stored in an airtight container or bag to prevent it absorbing moisture.

4. Silicone Caps x 2

These slide over the nozzle & block any accidental vapor leakage e.g. during transport. Alternatively, cut off the end and use as a heavy duty sleeve on polyhives

5. Silicone Sleeves x 2

These insulate the nozzle to make it more efficient, less chance of blocking and protect your hives when vaporizing - essential when using on plastic or polyhives.

6. O-Rings x 2

These are spare O-Rings for the plunger if needed

7. Cleaning Caps x 2

These caps are used during the cleaning process - only one is needed. One is a spare.

SAFETY FIRST

Oxalic acid vapour is toxic

Respirator masks must be worn while vaporizing

PPE

Beequip NZ offer both half masks and full face masks designed for the purpose of oxalic acid vaporizing in beehives. Our half masks offer adequate protection, covering the nose and mouth to safeguard users from oxalic acid vapors. However, for the best protection, we recommend our full face masks. These masks not only cover the nose and mouth but also provide comprehensive coverage for the eyes and face, ensuring enhanced protection against splashes or accidental contact with oxalic acid.

If you have your own mask, ensure the filters are ABEK or A2B2E2 classified. The service life of any acid gas cartridge filter is affected by many factors.

Replace both the filters: -

- When the expiry date stamped on the sealed packet has elapsed.
- Once opened, maximum use time is 6 months (even if not used). The carbon will absorb contaminants from the general environment.
- When contaminant can be detected by smell or taste.

Eye protection is mandatory if using half masks.

Thick gloves and long sleeves are important.

InstantVap's get very hot!

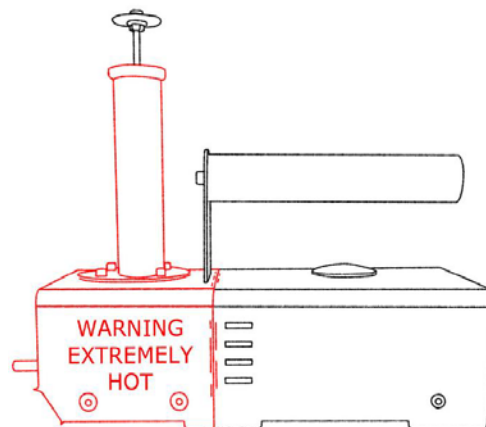
The unit retains heat for a long time after use! Do not rest device on dry grass or straw. Transport properly and only when cooled. We recommend commercials to use an old ammo tin for storage on the truck.



How to sit the unit when connected to a battery



Ammo Tin



Half Face Mask
SKU: 751-0220



Full Face Mask
SKU: 751-0210



Replacement Filters
SKU: 751-0230

OPERATING THE VAPORIZER

How to start the InstantVap

1. Connecting your battery

Make sure power switch is OFF before connecting. Once connected to the unit, 3-4 seconds later it should then read current temp(ambient) on the RED readout and 230 degrees should show on the GREEN readout (set temperature).

2. Before treating, check your voltage - 18v Version

Voltage is important to save the life of your battery. NEVER run a battery below 15v. The device switches off at approx. 15.4 volts due to an inbuilt battery protection circuit, and only starts up if a charged battery is connected. The battery must be above 17.3 volt for the device to start up. Monitor your voltage to ensure longevity of your battery.

3. Wait for unit to heat up

Switch the unit on and the red temperature should start climbing up to 230 degrees as set on the green display. This will typically take 3-4 minutes. Get your oxalic acid ready. We highly recommend our 0.5 or 2kg pottles for storing the acid while going round beehives.

4. Vaporizing the Hives

Once the unit has got to temperature (230C), you can begin vaporizing your hives. Fill the plunger by dabbing the end in the acid crystals. Carefully place the plunger in the spout till its sitting on the O ring, with a firm push it will slot into place with the O ring sealing it off. Place the nozzle in the hive then push down the plunger. The acid will drop into the hot chamber and come out the nozzle as a vapour. Once it has finished vaporizing you can repeat this step for the next hive. The unit only needs to heat to 225C before its ready for the next dose.



Adjusting the Plunger

1. Remove Plunger

Take the Plunger out of the spout
CAUTION: this will be hot if the unit has been on.

2. Locate indicator on the tube

As shown in the photo to the right, the tube has marks on it. 1 = 1 Gram of acid

3. Adjust the Dose

By twisting the plunger handle you can adjust the dose. Clockwise is less, Anti-clockwise is more.
DO NOT twist past the indicators.



Plunger Tube set on 3 grams



InstantVap in Action

Scan to watch a video of the InstantVap being used on beehives

MAINTENANCE

Cleaning is paramount

Residue build up must be removed or the device will block up.



Cleaning Cap
SKU: 760-0035

How to Clean the InstantVap

1. Steam Cleaning - IMPORTANT: Never do this if the unit is blocked. See FAQ if blocked

Immediately after using the InstantVap, switch it off and let it cool down to 200°C. While its cooling down, get the cleaning cup as shown in the picture above. Fill it half full of clean water. Once the InstantVap gets to 200°C, tip it upside down without the plunger in the spout. Slide the cleaning cap over the spout, then holding it firmly in place with 2-3 fingers, tip the machine up the right way with the nozzle pointing away from yourself or anyone else. The water in the cap will drop down into the chamber, instantly evaporate and steam out the nozzle. This will generate a bit of pressure on the cap so ensure you are wearing gloves and holding it down tight!

2. Rinsing it out

Let the device cool down to 100°C then pour roughly 30-40mls of water in the spout. If its taking a while to cool down, carefully add a few drops of water down the spout, with the machine off, to help it cool down. Swirl it round and then tip the machine upside down so the water comes back out the spout. It should be a dark grey. Repeat a couple of times till the remnants come out reasonably clean. Rinse the plunger tube in water to remove any residues on it.



Cleaning Video

Scan the code to see the instructions above in action!

Cleaning Frequency

The process above should be repeated regularly and can't be done too often! We recommend doing it every 50 hives. At the very least, every day after using it. Regular cleaning will avoid the problem of it blocking up. If you notice the unit behaving differently or taking longer than usual, give it a clean and see if it makes a difference.

Maintenance Tip

A drop of Vaseline or grease applied to the O ring on the plunger will make it easier to use when vaporizing. The O ring will also last a lot longer - spares are provided.

Do not leave a battery plugged in to InstantVap while being stored. Powering the digital displays will eventually flatten the battery.

Check out the FAQ section on the last page, for more info.

BATTERY LIFE TIPS - For 18v Version

InstantVap's need a good power supply!

With a high power heater in the unit, it consumes a lot of power. 18v Power Tool Batteries are great for coping with this demand, however they can go flat quickly if the InstantVap isn't used efficiently.

Battery Capacities

How long a battery will last mostly comes down to its amp hour (Ah) capacity. Anything from 2ah upwards will work, however a minimum of 4Ah is recommended. Beequip sell Makita 6Ah batteries which are very popular. We highly recommend commercials have plenty of batteries or use high capacity batteries such as the 12Ah M18 Milwaukee or the DeWalt 15Ah XR FlexVolt. They give the longest run times.

So, how many hives can I do per Ah?

This is a difficult question to answer as it depends on the age of your battery, the weather conditions, dose size and how efficient you can be between hives and apiaries. We ran several tests with a new 6Ah Makita Battery and graphed the results:

	Scenario			
Dose	2 Grams	3 Grams	4 Grams	2 Grams
Application	18 Seconds	27 Seconds	35 Seconds	18 Sec / 20min stop
Note	1 heat up session from cold	1 heat up session from cold	1 heat up session from cold	2 heat up sessions. Stopped for 20min halfway through
Results	44 Treatments 7.3 Hives per Ah	30 Treatments 5 Hives per Ah	21 Treatments 3.5 Hives per Ah	37 Treatments 6.1 Hives per Ah

Conclusion

From the results above we can see the increase of the dosage will dramatically impact how many hives you can do. Using the table above, you can calculate how many hives you can treat with your batteries. Note: This table does not show how many hives you will get without a heat up session - Hives per Ah will be a lot higher.

Silicone Insulating Cover

To increase the efficiency of your InstantVap, slide this silicone cover down the spout till its covering the top part of the InstantVap over the hot box. Not only will this preserve heat loss but also contain any acid spilled while putting the plunger into the spout.



Silicone Cover
SKU: 760-0033



Cover fitted to the unit

FIELD TRIAL RESULTS

Real World Testing Results

We had a hive (Hive 20) with serious varroa re-invasion issues in Autumn 2023. As a field trial we vaporized it with Oxalic Acid (OA) and took the opportunity to monitor the results of mites dropping through the vented base onto a white tray.

The results were outstanding:

Hive No. 20 Vaporization Results						
Date	Time	Task	Mite	Hour Period	Mites per hr	Day
Saturday 8/04/2023	6pm	Vaporized 3 grams of OA through excluder front gate.				0
8/04/2023	8pm	Varroa Mite count on base tray	11	2	5.5	0
8/04/2023	10pm	Varroa Mite count on base tray	20	2	10.0	0
9/04/2023	8am	Varroa Mite count on base tray	649	10	64.9	1
9/04/2023	7.45pm	Varroa Mite count on base tray	791	11.75	67.3	1
10/04/2023	7.30am	Varroa Mite count on base tray	559	11.75	47.6	2
10/04/2023	9pm	Varroa Mite count on base tray	779	13.5	57.7	2
11/04/2023	7.45pm	Varroa Mite count on base tray	531	22.75	23.3	3
12/04/2023	8.15pm	Varroa Mite count on base tray	426	24.5	17.4	4
16/04/2023	10am	Varroa Mite count on base tray. Had cleaned the tray 12 hours prior. (Would indicate natural mite drop)	47	12	3.9	8

Conclusion from test

The results show that even with a bad infestation, one vaporisation will kill a lot of mites. Also, Varroa mites are still dying as a result of the Oxalic Acid vapour, 4 days later. This will help you to plan your treatment periods



791 varroa mites that dropped in 11.75 hours!



Hive 20



When do I vaporize a Hive?

Vaporizing can be done at any time of the year apart from when the bees are clustering tightly. The gas won't penetrate into the cluster. It can be done on a day when there is light rain as long as you ensure that the insulation and electronics inside the InstantVap do not get wet.

Nothing is coming out when I push the plunger?

The brass nozzle is most likely blocked. This may be due to not cleaning it enough. Firstly, rinse the device out as per instructions on page 5 - DO NOT TRY TO STEAM CLEAN IT. Use a 2.5mm drill bit to remove the blockage. A 3mm drill bit can then be used to remove any remaining residues. As a last resort, the nozzle can be removed with a 9mm spanner to clean from both ends.

Important! When refitting nozzle, the thread must be clean and secured tightly to ensure proper heat conductivity. If this does not work, please call Beequip for further consultation.

How many grams should I do and where do I vaporize?

For beehives with solid bases, apply 2g of vapour at the bottom entry. Block the entry with a wet towel for 7 minutes to trap all the vapour in the beehive while treating other beehives.

For beehives with vented bases, use a vent blocker sheet and carry out the same process as stated above. The vent blockers can be removed after 7 minutes.

For beehives with vented bases that are difficult to block, we recommend a 3 gram dose from the top of the hive. A small notch cut from the rim of the hivemat is excellent for winter ventilation and a great spot to apply the vapour. If the beehive has honey supers, a notch cut from the rim of the queen excluder can give good access for the vaporizer.

Can I vaporize through a hole in the Brood box?

Yes, but it is likely a frame will be in the way and some of the OA will solidify on the frame and be wasted. It is recommended to have 100mm of 'free air space' in front of the nozzle to prevent this occurring.

How often do I have to vaporize a Hive?

This depends on what approach you are taking for controlling varroa. If you have treatments in the hive and the varroa levels seem to be increasing, 1-2 vaporizations can often be enough to get things back to a level where the treatment in the hive can maintain varroa levels or reduce them. If you're using it as a sole treatment for varroa, 2 vaporizations every week for 3-4 weeks is usually required to get varroa levels down to low levels.

Can I use it in the rain?

Not unless you can keep the machine totally dry. If the insulation and/or the electrics get wet, it will damage them and the unit will not function properly. Be very careful when cleaning not to allow water to enter into top vents or side vents, only down the spout.

Are spare parts available?

Yes. The InstantVap's are designed so parts can easily be replaced should the need arise. Please call us if you have problems and we will advise the best remedy. Beequip have trained service technicians.

Can I extend the nozzle?

No. The nozzle is at the maximum length already. Any longer and it becomes too cold causing build up and increasing the chance of it blocking up.

More questions? Get in touch 