



Fight varroa and protect your honey.

READY-TO-USE STRIPS THAT MAKE ORGANIC VARROA CONTROL EASY



YOUR GUIDE TO SUSTAINABLE VARROA MANAGEMENT

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WHY FORMIC ACID?

Combatting the Biggest Threat to Honey Bees

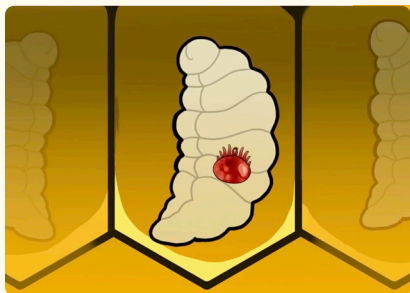
In 1997, NOD Apiary Products recognized that formic acid is a highly-effective active ingredient to combat varroa mites. NOD developed a practical, sustainable miticide for the beekeeping industry. *Formic Pro*[®] is specially formulated to control varroa, tracheal and tropilaelaps mites—all while protecting the quality of your honey, since it doesn't leave unwanted residues in honey, wax, or hive components.



Kill Varroa Mites Under the Cap

Formic Pro is a brood-focused treatment that targets *Varroa destructor* mites where they reproduce: under the brood cap. The formic acid vapours penetrate capped brood to protect vulnerable developing bees from varroa mites. This organic miticide also kills dispersal phase (phoretic) mites found on adult bees.

Independent studies show *Formic Pro* is an effective treatment to kill mites under the brood cap—stopping the next generation of mites from reproducing in your colony.



Formic Pro can kill

up to 98%

of dispersal phase (phoretic) mites¹

and up to 80%

of immature mites under the brood cap^{2,3}

Efficacy Studies & Sources: MAQS Technology Comparison Study: A single application of two strips of MAQS+ (initial brand name for *Formic Pro* at time of development) had a demonstrated efficacy of >98%. Comparatively, the natural mite mortality in the placebo group during the 21-day evaluation period was 24.6%.¹ TestApi 238-2015 Study: After treatment with *Formic Pro*, less than 20% of the immature mites were alive, compared to almost 60% in the placebo group.² Pajuelo Consultores Apícolas Study: Colonies treated with 2 strips of *Formic Pro* had 50% fewer varroa under the cap 33 days after treatment, and 80% fewer by 53 days following treatment. In contrast, a group treated with amitraz showed an 85% increase in varroa under the cap at day 33, and only a 50% decrease by day 53, relative to initial levels.³ (VanderDussen, Porter, Philip, & Cooper, 2017; Mamet, 2015³; Gonell, et al., 2019³)

WHY FORMIC ACID?

The Benefits of *Formic Pro*



READY-TO-USE STRIPS

Formic Pro is simple and easy to apply. No mixing required.



ZERO RESISTANCE

Formic acid has been used for over 30 years without any known resistance.



RESIDUE-FREE

Safe to treat during the nectar flow. *Formic Pro* leaves no residues in your honey, wax, or hive components.



ALL-NATURAL & BIODEGRADABLE

Formic Pro is made with all-natural, organically-certified, and biodegradable ingredients that can be composted after use.



QUICK TREATMENT

Formic Pro offers fast and effective treatment. Choose from 14-day or 20-day treatment periods.



Formic Pro Components

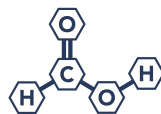
OUTER SACHET:

Contains 2 strips. Cut open, carefully remove and separate the strips.



FORMIC ACID GEL MATRIX:

Formic acid polysaccharide gel strip, the active ingredient remains stable over time.



ECO-PAPER WRAP WICK: **DO NOT REMOVE**

Biodegradable paper wrap designed to act as a wick to control the release of the formic acid vapors over the treatment period.

PLANNING YOUR TREATMENTS

Success with *Formic Pro*

Formic acid works as a vapour-based fumigant and your bees play an important role in its success. When *Formic Pro* strips are placed in your hive, the colony aids the distribution of formic acid by fanning the vapour throughout the hive cavity. To help this process, there are three key factors for beekeepers to consider.

1

TEMPERATURE GUIDELINES

Between 50–85 °F (10–29.5 °C) is the required temperature range for application of *Formic Pro*. This ensures the formic acid vapours have the right conditions to take action within the hive cavity. Most of the vapouring-off happens within the first 3 days, making this an important window for planning your treatment around the weather. Avoid rain on the first day of application.

WHEN TO TREAT?

Outside daytime temperature range needs to be between 50–85 °F (10–29.5 °C) during the first 3 days of treatment.

(Nighttime temperatures do not play a factor)



85 °F (29.5 °C)

50 °F (10 °C)

2

COLONY STRENGTH

Unlike a contact treatment, *Formic Pro* is a fumigant-based varroa treatment that expands throughout the entire beehive. Your colony must be a sufficient size to tolerate the treatment and properly disperse the formic acid vapours throughout the hive.

The colony should be a minimum of 10,000 bees (covering approximately six 9-inch deep frames). *Formic Pro* is not an ideal treatment for newly split or nucleus colonies. *Formic Pro* can be used with single or double brood chamber hives.



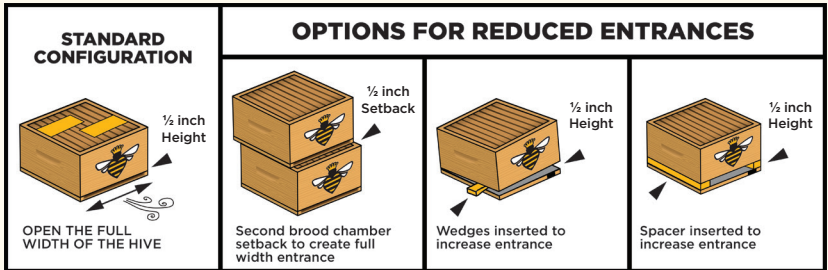
PLANNING YOUR TREATMENTS

3

PROPER VENTILATION

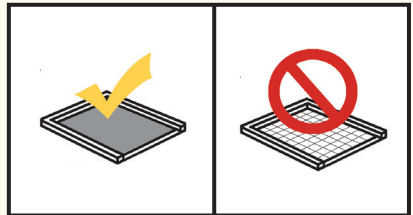
Providing adequate ventilation during your *Formic Pro* treatment is essential to maintain efficacy and ensure survival of your colony. Follow the ventilation guidelines to give your honey bees the right balance of fresh air while allowing the formic acid vapours to target varroa mites in your hive.

Maximize Entrance Ventilation: For wooden bottom boards, open the full width of the hive to a recommended minimum of a $\frac{1}{2}$ inch high. With plastic bottom boards, open the full width and to the recommended height, remove entrance reducer or triple disc system. If using custom bottom boards with limited entrances, set back the second box by $\frac{1}{2}$ inch to allow fresh air access. Upper entrances can be left open but are not seen as additional or sufficient ventilation sources.



Close Screen Bottom Boards:

Screen bottom boards must be closed off to contain vapours and retain efficacy. Ventilated floors and roofs are not a replacement for fully open entrances.



PRO
TIP

Protect your honey bees year-round.

Formic Pro can be used anytime of the year, subject to temperature and colony condition/strength. Allow for a minimum of one month between applications.

PREPARING YOUR HIVES

Monitoring for Varroa Mites

It's important to regularly check your colony's mite load throughout the beekeeping season.

You need to assess colony mite count pre- and post-treatment to determine efficacy. Post-treatment monitoring should be done one week after the last day of your *Formic Pro* treatment period.

It is recommended to perform monthly checks of varroa mite levels for all colonies. Ongoing monitoring can mitigate reinfestation from feral bee colonies or untreated neighboring colonies.



What's Your Treatment Threshold?



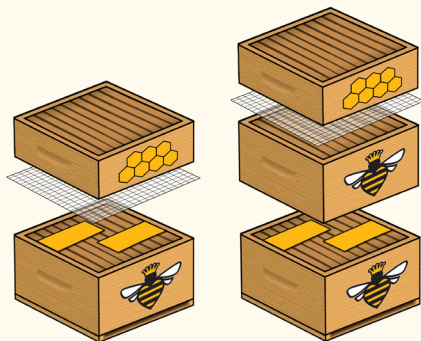
Treatment thresholds are based on your region and the time of year. When to treat for varroa mites depends on colony strength and number of varroa mites found during monitoring. You can look up treatment thresholds by your state or province, or contact your local bee inspector or association to find out.

Scan the QR code to access the **Varroa Management Decision Tool** from *Honey Bee Health Coalition* to determine the best way to manage varroa mites in your hives.

Hive Configurations

Single vs. Double Brood Box

Formic Pro can be used on single or double brood box configurations with 8 or 10 frame equipment. Place your strips on top of the lowest box. When treating a single brood box, add a honey super to give your bees room to expand. Adding a honey super to double brood box is recommended for large colonies. You can treat with or without queen excluders.



PREPARING YOUR HIVES

Tips for Ventilation

If you're using hive components with reduced entrances or alternative equipment, you may need to make adjustments to allow for sufficient ventilation. Below are instructions for how to ensure adequate airflow during your *Formic Pro* treatment.



Bee Escapes

Adapted inner covers do not create sufficient ventilation. Remove one-way exits, such as Bee Escapes, during treatment.



Apimaye Equipment

To create fully open entrances, remove the three screws and take off entrance reducer. Close screen bottom boards during treatment.



Hive IQ

Ventilated floors are not a replacement for fully open entrances. Close screen bottom boards during treatment.



Entrance Reducers & Robbing Screens

Obstructed entrances do not create sufficient ventilation. Remove entrance reducers and robbing screens during treatment.



Top Bar Hives

Formic Pro is not recommend for use in top bar hives.

APPLYING FORMIC PRO

Simple Dosing and Easy Application

Manufactured in ready-to-use strips, *Formic Pro* takes the guess-work out of the dosing and application for your varroa treatment. The dose of *Formic Pro* never changes: it is specially formulated to be a fast and effective varroa treatment.

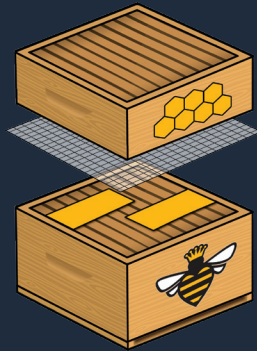
- **Do not remove the eco-paper wrap.** It acts as a wick.
- **No Peeking.** Do not disturb the colony during the treatment period.
- **Treat entire apiary.** Recommended to treat all hives at the same time.

TREATMENT OPTIONS

14 DAYS

- Apply 2 strips above the centre of the brood nest.
- Leave for two weeks.

Recommended for all critical treatments for varroa control under the brood cap.



20 DAYS (1+1 Method)

- Apply 1 strip above the centre of the brood nest and leave for 10 days.
- On Day 11, remove the first strip, replace with second strip and leave for another 10 days.

Recommended for control of mites in the dispersal phase (clean-up treatments).



APPLYING FORMIC PRO

Two Looks, Same Efficacy

Formic Pro strips can vary in color and texture. Newly-produced product will appear firm and dry with white eco-paper wrap. As the natural ingredients begin to age inside the packaging, the strips will become softer, wet, and darker in color. This does not affect efficacy. Refer to the expiry date on your packaging to confirm dates for use.



Newer
Product

vs.

Aging
Product

=

Same
Efficacy



Keep Safety Top of Mind

Formic acid can have harmful effects if not handled properly. Always ensure you are wearing the appropriate Personal Protective Equipment (PPE) and following necessary safety procedures.



**ACID-RESISTANT
GLOVES**
(PVC, NEOPRENE,
OR NITRILE)



**CLOSED-TOE
FOOTWEAR
AND SOCKS**



**LONG-SLEEVED
SHIRT AND
LONG PANTS
OR COVERALLS**



**PROTECTIVE
EYEWEAR**



Read & Follow Label Guidelines

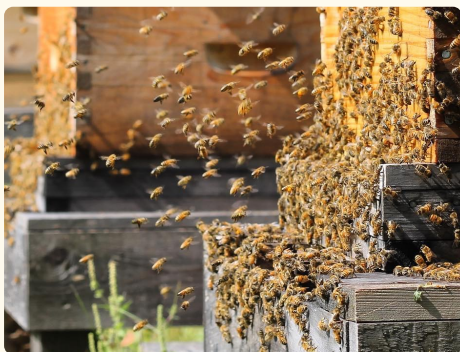
Follow all product application/safety instructions and manufacturer's instructions for your PPE. **See complete user safety procedures in product package leaflet.**

WHAT TO EXPECT

How do Bees Respond to *Formic Pro*?

Formic Pro is a fumigant-style treatment, which means the entire colony is exposed to formic acid vapours. Your bees will respond to treatment with *Formic Pro* in a few noticeable ways:

Bearding: Bees may display bearding behaviour, especially in stronger colonies. Creating additional space is often necessary for the bees to fan and circulate formic acid vapours throughout the hive to penetrate the brood cap. Bearding bees will re-enter the hive during the treatment period, exposing any phoretic mites to the formic acid vapours.



Observed Dead Bees: Natural birth and death rate is 1,500 bees per day. During treatment, up to 2 cups (i.e. 1,200) of dead bees maybe observed at the entrance. The treatment may result in loss of some young/open brood.



Queen Issues: Check your colony is queenright one month after application. Treatment may trigger supersedure of poorly-mated or fragile queens, regardless of age. As a fumigant treatment, the formic acid vapours can mask the pheromones of a weaker queen. It's best to wait 7-10 days after introducing a new queen to treat with *Formic Pro*.

**PRO
TIP**

No need to remove strips immediately.

After the treatment period, used strips become inert so you can leave them in the hive until your next inspection and then simply compost.

WHAT TO EXPECT

Stressors to Avoid

All types of varroa treatment can be stressful to your honey bee colony. Take care to avoid compounding strain on your bees when planning a treatment. Some stressful factors to look out for are:

Nutritional Stress: Ensure colonies have ample food reserves prior to treatment and, if necessary, feed before treating. Do not in-hive feed during the treatment.

Relocating Colonies: Especially relevant for migratory beekeepers, moving colonies for pollination (or otherwise), is stressful on bees. It is not recommended to treat just before or directly after loading colonies onto a truck for pollination.

Extreme Heat: Hot temperatures ($\geq 92^{\circ}\text{F}$ or 33°C) during the first 3 days of treatment may lead to excessive bee, brood and/or queen loss.

Formic Pro Safeguards Your Honey

Made with certified-organic and all-natural ingredients, *Formic Pro* does not leave any residues in your honey, wax, or hive components—making it safe to use during the nectar flow. Simply leave supers in place and you can harvest your honey immediately after treatment.

Formic Pro is a BioGro-certified product.



TREATMENTS MADE EASY

Ready-to-Use Strips

Formic Pro is manufactured in prepared strips that make application easy. There's no mixing or measuring required. Each foil sachet contains two ready-to-use strips, just open and place strips right into a single or double brood box.



Available in three packaging sizes:



Healthy Bees. Healthy Planet.

At NOD Apiary Products, we take our cues from nature to develop solutions for beekeepers that are effective, sustainable, and safe. With over 25 years in the apiculture industry, our team is dedicated to honey bee health.

WHERE TO BUY

Ask for *Formic Pro* at beekeeping supply stores across North America. Visit our website to find a distributor near you:

www.nodglobal.com/buy