



VARROA

FIGHT THE MITE

Integrated
Pest management



WITH
Véto-pharma
Committed to apiculture

Apivar
By Véto-pharma

Oxybee

varroa
easyCheck
By Véto-pharma

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APIVAR[®] Page 4

Amitraz



The original amitraz strip: Unique, proven, trusted.

- ✓ **One single application, for up to 10 weeks of treatment¹**
Eliminating several generations of mites
- ✓ **Safe for the bees², the brood², the honey³ and the beekeepers alike.**
Composition of amitraz and plastic strip only
- ✓ **No temperature constraint**
Apivar can be used in all climatic conditions, when the supers are not placed in the hives.
- ✓ **Manufactured in France**
to the highest quality standards.⁴



2

OXYBEE[®]

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- ✓ **Natural active ingredients⁶**
Oxalic acid with sucrose, glycerol and essential oils
- ✓ **Innovative formulation**
for an improved efficacy⁷⁻⁸



1 - If brood is present, leave the strips in place for 10 weeks (cf. 4.9 of the Apivar SPC) // 2 - Apivar registration dossier (2015). Study 2026-2015 - Testapi // 3 - Amitraz residue transfer into honey from Apis mellifera hives treated with Apivar® - Jeff Pettis, USDA-ARS, Beltsville, MD USA - 2013) // 4 - Pharmaceutical standards

Suitable for organic⁵

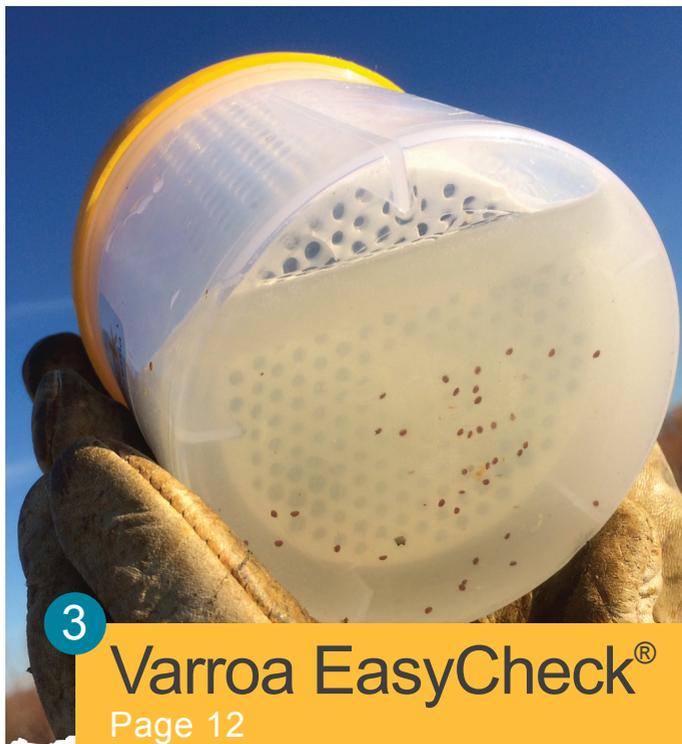
Beekeeping



Oxalic acid with glycerol, sucrose and essential oils

- ✓ **Economical**
Storage possible for 1 year after mixing with sugar⁹
- ✓ **Manufactured in Germany**
to the highest quality standards⁴

5 - Oxalic acid is approved by the EMA (European Medicines Agency) as an active ingredient for organic varroa treatments. Please contact your local organic certifier if you have any question related to the use of your mite treatment // 6 - Read the instructions carefully before use // 7 - CVMP assessment report for Oxybee (EMA/ V/C/004296/0000) - 2017 // 8 - Poster G. Braun et al., DVG-Fachgruppentagung "Parasitologie und parasitäre Krankheiten", Hannover, Germany, Juni 12-14, 2017 // 9 - If mixing made in the respect of the instructions (cf. 6.3 of the Oxybee SPC)



Varroa EasyCheck[®]

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3 in 1 Varroa monitoring

Three different monitoring methods using the same tool: Alcohol wash, sugar roll and CO₂ injection!

- ✓ **Select the method you prefer** depending on the time of the year and on you objective
- ✓ **Quick and easy to use**
- ✓ **Reliable:** gives you a clear estimation so you can decide what is the best strategy for your hive
- ✓ **Durable and reusable**



APIVAR®

The original
Amitraz strip



Amitraz-based miticide

A UNIQUE AMITRAZ BASED PRODUCT

Simple and safe composition
of two ingredients¹

Apivar is the only amitraz-based varroa treatment containing
only amitraz and the plastic strip.
Comparable products contain additional excipients.



● 1 - Amitraz

Amitraz targets the octopamine receptors of the varroa mite, causing excessive stimulation of its octopaminergic synapses, leading to tremors, convulsions, detachment and death of the parasite.²

The amitraz used in the production of Apivar is of **veterinary pharmaceutical quality**.

● 2 - Plastic polymer

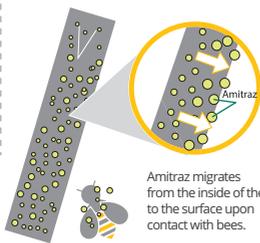
Specially designed to ensure a **continuous release of amitraz on the surface of the strip** after its placement in the hive.
The polymer strip was chosen for its rigidity and its ability to continuously release the active ingredient during the treatment.

The special manufacturing process results in an even distribution of amitraz within the whole strip, not only on the surface.

As Apivar works by contact, the active ingredient is continuously delivered each time the bees pick up the molecule from the surface.



1 Bees walk on the strips, **picking up amitraz molecules**.



Amitraz migrates from the inside of the strip to the surface upon contact with bees.

2 The bees distribute amitraz through contact with each other.



3 Amitraz targets the octopamine receptors of the varroa mite, **leading to tremors, convulsions, detachment and death of the parasite**.

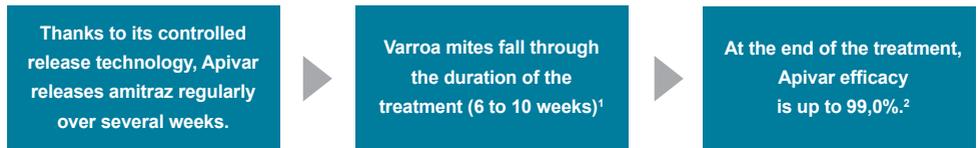


4 The mite population drops and subsequent mite generations are also killed.





A single application, long period of protection

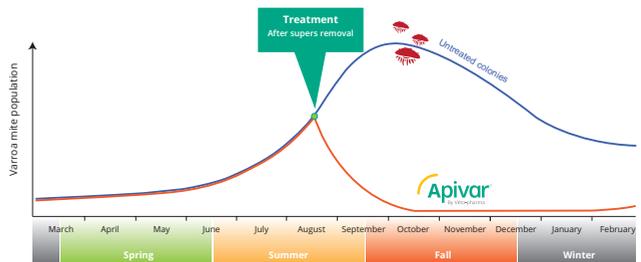


The plastic polymer of Apivar strips has been developed to continuously release amitraz over at least 10 weeks¹, killing several successive generations of varroa mites.

Therefore, mite falls at the beginning of an Apivar treatment may be lower than in a flash treatment. This is normal and does not mean the treatment is ineffective.

As the curve above illustrates, treatment over several weeks like Apivar helps control the overall colony infestation to lower the varroa mite pressure for longer.

Modeling the Varroa population with an Apivar treatment applied at the end of the season



A long-acting treatment like Apivar kills several successive generations of varroa mites during the treatment period. As a result, the colony remains clean for the long term.



1 - If brood is present, leave the strips in place for 10 weeks (cf. 4.9 of the Apivar SPC)
 2 - Ensayo de eficacia Apivar (Campaña 2019) - Pinafranqueado (Cáceres) - EUROMIEL

APIVAR'S QUALITY AND SAFETY

Apivar is a product of Véro-pharma, a French pharmaceutical company that develops and markets innovative products to help beekeepers prevent and control hive diseases and infestations for 25 years.

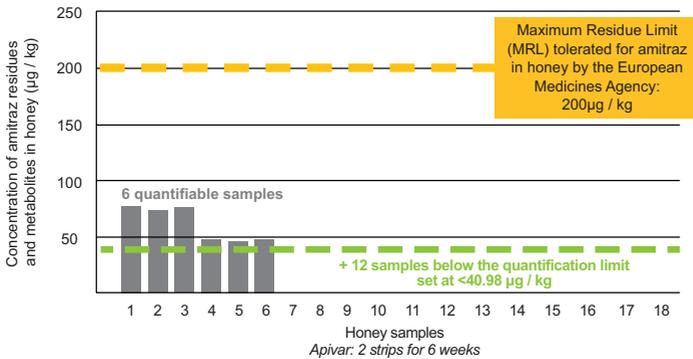
Apivar is manufactured in a dedicated facility operated to the highest standards in pharmaceutical manufacturing. Each batch is strictly controlled and analyzed before commercialization.

As a result, beekeepers around the globe can be confident that each Apivar strip is consistent, safe for bees and humans, and meets or exceeds stringent pharmaceutical quality standards.



Preserve the quality of honey

Concentration of residues [amitraz + metabolites] in honey¹



Thanks to its unique composition and its controlled release technology, Apivar guarantees respect for the quality of your honeys.

At the recommended dosage, the level of residues of amitraz + metabolites for Apivar is well below the Maximum Residue Limit (MRL) set by the European Medicines Agency.² The majority of samples are even below the quantification threshold.

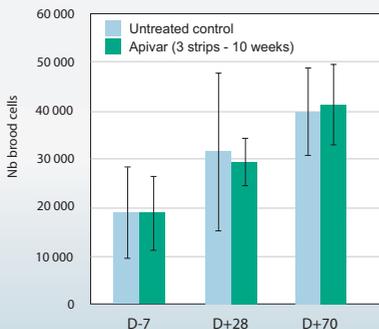
1 - Study carried out in France in 2015 on 40 colonies (5 modalities of 8 colonies) during a period of 6 weeks to 10 weeks. Method tested: Apivar with 2 strips per hive for 6 weeks. Installation of the supers at the removal of the strips. 40-days honeyflow, then dosage of the residues in the supers. TESTAPI study No. 226-2015 (Field study to collect specimens from honeybee colonies (*Apis mellifera* L.) for analysis, following Spring in-Hive Application of 500 mg amitraz strips)

2- Commission Regulation (EU) No 37/2010 of 22 December 2009 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin

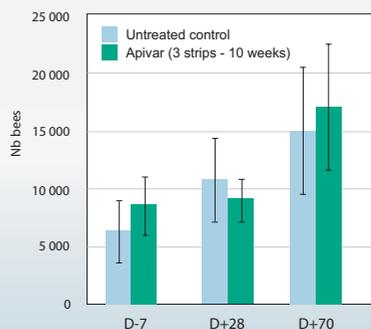
No negative effect for brood or bees

Total population before and after a ten-week treatment with 1.5 times the dosage of Apivar

Evolution of mean number of brood cells



Evolution of mean honey bee population



Reference: Apivar registration dossier (2015), Study 2026-2015 - Testapi

25 YEARS OF RELIABILITY: EFFICACY AND WINTER SURVIVAL

Efficacy in Europe

Recent studies were conducted in Europe, between 2017 and 2019, with efficacy rates from 97.0% to 99.0%.

These results show a consistent efficacy even after 25 years of use in France, the first country where Apivar was authorised.

Country	Year	Type and nb of hives	Treatment	Efficacy (%)
Spain ¹	2019	Layens 10 colonies	Apivar 2 strips 6 weeks	98.4 %
Spain ²	2018	Layens 7 colonies		96.9 %
Greece ³	2018	Langstroth 30 colonies	Apivar 2 strips 10 weeks	97.3 %
France ⁴	2018	Dadant 18 colonies		98.3 %
France ⁵	2017	Dadant 15 colonies		99.0 %

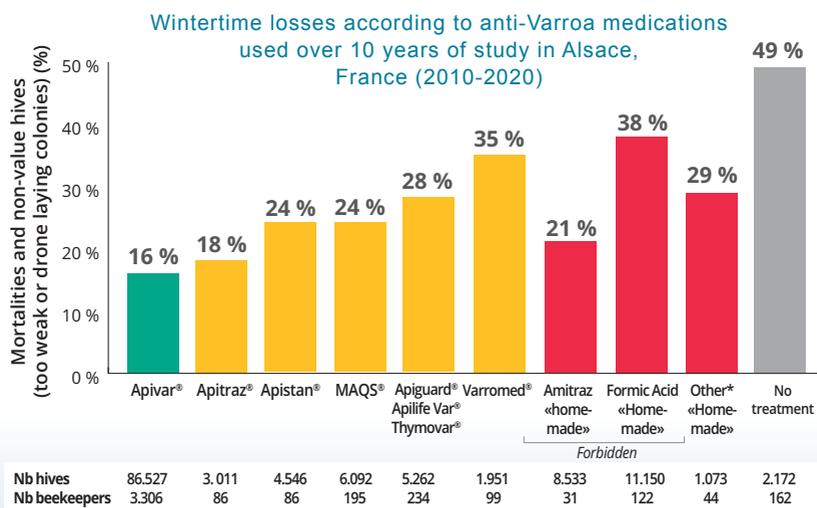
References:

1. Ensayo de eficacia Apivar (Campaña 2019) - Pinofranqueado (Cáceres) - EUROMIEL
2. Ensayo de eficacia de campo del producto antiparasitario "Oxybee" (2018) - EUROMIEL
3. Harizanis, Antonopoulos, Kavoussanou (2019). Field Trial by Agricultural University of Athens in Cooperation with Vétro-pharma to test the Efficacy of Apivar® in Fall 2018.
4. Testapi – Rapport d'étude 353-2018 (GLP Study)
5. Testapi – Rapport d'étude 302-2017 (GLP Study)

Winter survival: 10 years of winter losses in France



In a winter mortality monitoring study with more than 80,000 hives over ten years, the mean mortality of the colonies treated with Apivar was significantly lower compared with other organic and conventional treatments.

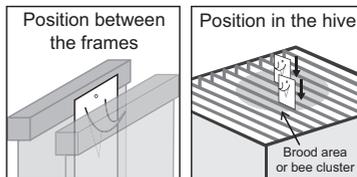
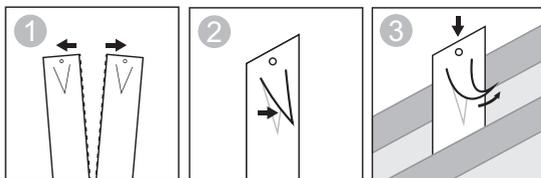


*Various homemade treatments (essential oils, thymol, propolis,...). Some of these treatments are forbidden.

HOW TO USE APIVAR AND INCREASE THE EFFICACY OF YOUR TREATMENT¹

Make sure that honey supers are not installed, and wear plastic or nitrile gloves to touch the strips:

1. Separate the double strip.
2. Push the strip's V-shaped die-cut outside.
3. Push each strip between two frames inside the brood area or the bee cluster with a minimum distance of 2 frames between strips. The strips should be placed in such a way that the bees can have free access to both sides.



Alternatively, the strips can be hung by the hole in the V-shaped die-cut, using a small clove or toothpick fixed on the frame.



1 - Apivar SPC - § 4.9

Apivar works by contact!

Always place the strips in the brood center, and adjust the strips at mid-treatment if the cluster has moved. Feeding during treatment can also help to make the bees move inside the hive, and thus increase the contacts.

There is no temperature constraint when using Apivar:

It can be used throughout the season, in any climate, when the supers are not placed on the hives.

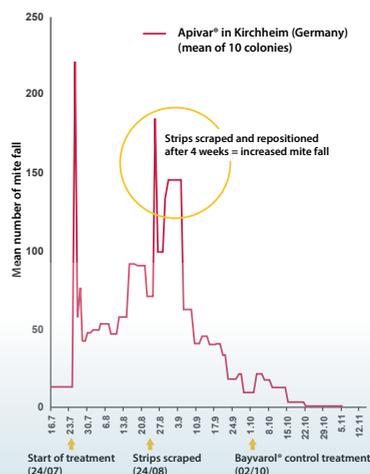
Leave strips in the hive between 6 to 10 weeks depending on the size of the brood.

The larger the brood area is, the longer the strips should be left in the hive. Do not reuse the strips. Remove the strips at the end of the treatment. Open packs should be used immediately.

Repositioning and scraping the strips to improve the Apivar efficacy

As shown by the results of a study conducted in Germany in 2018, scraping and repositioning the strips at mid-treatment can significantly increase the daily mite fall. A second peak of falls is observed after 08/24, day of scraping and repositioning.

The systematic scraping at mid-treatment (and possible repositioning, if the bee cluster has moved) increases the number of direct contacts between the bees and the strips, thereby improving the effectiveness of the treatment.



Reference - *Bienen&natur* (08.2019). *Feldtest mit Apivar*. PD Dr. Peter Rosenkranz and Thomas Kustermann.

Suitable for organic²

Beekeeping 

OXYBEE®

Oxalic acid-based medicine with glycerol, sucrose and essential oils


First
authorised formulation of
oxalic acid with glycerol
available in the
European Union.¹



Oxybee is an innovative varroa mite treatment based on oxalic acid, sucrose, glycerol and essential oils (anise and eucalyptus), authorized in organic beekeeping.²

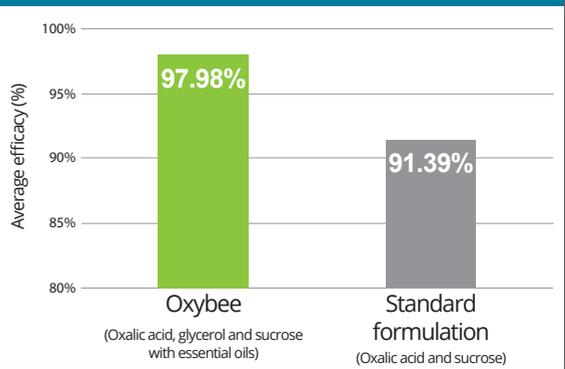
The combination of sucrose and glycerol in the oxalic acid solution is a key advantage of Oxybee.³

The formulation of oxalic acid in combination with sucrose and glycerol increased the mortality of varroa mites in laboratory tests.³⁻⁴

The formation of small droplets of solution that last longer in the colony (increased hygroscopy) is assumed to be the cause of this effect, enabling a better distribution of oxalic acid solution in the hive.³⁻⁴

As a result, field data have shown a higher efficacy of Oxybee compared to a standard formulation of oxalic acid and sucrose.⁵

Field trials have shown a higher efficacy of Oxybee compared to the standard formulation of oxalic acid and sucrose.⁵



1 - European Union, except Austria.

2 - Oxalic acid is approved by the EMA (European Medicines Agency) as an active ingredient for organic varroa treatments.

Please contact your local organic certifier if you have any question related to the use of your mite treatment.

3 - CVMP assessment report for Oxybee (EMA/V/C/004296/0000) - 2017

4 - Milani (2001) - Activity of oxalic acid and citric acids on the mite Varroa destructor in laboratory assays - Apidologie 32 (2001) 127-138 © INRA/DIB-AGIB/EDP Sciences, 2001

5 - Poster G. Braun et al., DVG-Fachgruppentagung "Parasitologie und parasitäre Krankheiten", Hannover, Germany, Juni 12-14, 2017.

HIGH EFFICACY in naturally and artificially brood-free colonies

Oxybee should be trickled only on brood-free colonies, as the treatment acts quickly and only targets the phoretic mites.

TREATMENT IN WINTER ON BROOD-FREE COLONIES

Use at the end of autumn or in winter, when the queen stops laying eggs and the bees form a winter cluster.

WHAT TO DO IF YOU HAVE BROOD IN YOUR HIVES

If you wish to use Oxybee but there is brood in your hives (either in winter in the Southern countries, or during the season when there are no supers on your hives) you have to create an artificial brood-break:

- Either by caging the queen for 25 days before applying the treatment (which is a widely used method in Italy).
- Or by a complete brood removal, or splitting the colonies.

Thanks to these methods, beekeepers can pick their preferred timing for an Oxybee application depending on the type of operation they run as well as the local climate and seasonality.

Oxybee® field trial conducted in Spain in Nov/Dec 2018¹

Mean efficacy **97.94%**

- Product applied in compliance with instructions.
- Study conducted on 10 Layens hives.
- Complete brood removal
- 1 application (trickling) in December 2018

References:

- 1 - Veterinario Asociación Cacereña de Apicultores, Spain (2018) - Ensayo de eficacia de campo del producto antiparasitario Oxybee.
- 2 - Médicaments de lutte contre Varroa - Tests d'efficacité 2017 - FNOAD - La Santé de l'abeille n°285, Mai-Juin 2018
- 3 - When there is no supers on the hives
- 4 - Oxybee SPC - § 4.9

EVALUATION OF AN OXALIC ACID-BASED TREATMENT AFTER QUEEN CAGING

In 2017, a trial was carried out in France on 24 colonies to test the effectiveness of oxalic acid as a late summer treatment.²

- Queen caged for 25 days
- Application of oxalic acid by trickling
- Counting of natural mite fall for 15 days

The oxalic acid solution killed over 95% of varroa mites within 6 days, and achieved 99% effectiveness within 15 days after application.

Queen caging is therefore an effective method allowing the use of oxalic acid in season (without honey supers).³



Example of a queen cage to attach on a frame

© www.apimbru.com

USING OXYBEE®⁴

- ✓ Always use without honey supers, and above 3 °C.
- ✓ Only apply to brood-free colonies.
- ✓ One treatment per generation of bees.
- ✓ Use on hives with accessible vertical frames from above.
- ✓ Respect the maximum dose of 54ml per colony:
The application of a higher concentrated oxalic acid dihydrate solution can lead to a significantly reduced over-wintering strength of the treated hives.



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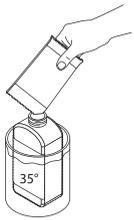
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Easy-to-use solution for trickling
35g oxalic acid dihydrate
1000g reconstituted solution

One 750g bottle
containing 35g of
oxalic acid dihydrate

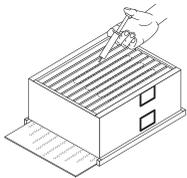
Two 125g sachets
of sucrose powder
(with Anise and
Eucalyptus essential oils)



- Write the date of opening on the bottle. Place the bottle with oxalic acid dihydrate solution in lukewarm water (30-35°C) to warm up the liquid. The bees will thank you!
- Pour all the sucrose powder (2 sachets) into the oxalic acid dihydrate solution bottle. A funnel can be helpful!



- Close the bottle tightly and shake it until the powder is fully dissolved.



- Open the hive and remove propolis bridges so you can easily see the bees and reach them. Use a syringe or a drenching gun to dribble 5-6ml of solution per seam occupied by bees. You can use a plastic tube to fill the syringe by aspiration.

Storage recommendations:



BEFORE MIXING:

Shelf life of the veterinary medicinal product as packaged for sale is two years.



AFTER MIXING:

The ready-to-use solution can be stored for one year in a refrigerator (2°C – 8°C).

When re-using the bottle, warm it up a little bit, so the bees better accept the drops on them.

Thanks to its specific content of glycerol, Oxybee offers the best storage condition:

12 MONTHS IN THE FRIDGE AFTER BEING MIXED

Other registered products* must be used within 30 days after reconstitution, and all non-used product is wasted.

**Other registered products without glycerol*

Easy to use

Ready-to-use: You only have to mix the powder with the liquid solution of the bottle.¹

Avoid dosage mistakes.

No need to prepare a separate syrup.

Economical

After mixing the two sachets in the bottle, you can keep Oxybee in the fridge for one year, offering the best storage condition compared to the other registered products.²

Quality

Oxybee is produced in Germany with the highest quality standards.³

The purity and quality of active ingredients ensure Oxybee's safety for the bees.

1-Read the instructions carefully before use

2-Other registered products without glycerol

3-Pharmaceutical standards



Download our Varroa Guide on www.varroa-easycheck.com to learn more about mite monitoring

Varroa EasyCheck[®]

3 in 1 Varroa monitoring

THREE DIFFERENT MONITORING METHODS IN THE SAME TOOL: ALCOHOL WASH, SUGAR ROLL AND CO2 INJECTION!

Why monitoring my hives?



Main objective:

Avoid a critical level of Varroa mite infestation that could lead to colony losses.

“Varroa monitoring is used to estimate the degree of Varroa infestation, optimize the treatment time, and confirm that treatment was successful.”

Avoid winter losses



1 colony saved ▶ 120€ value
10 colonies saved ▶ 1 200€ value

A 3% mite infestation can cut honey yield by up to 13 kilos/year¹



Secure honey production

1 - Maisonnasse, et al, 2014. A study conducted by INRA found that a 3% Varroa infestation cut honey production by 5 kilos of lavender honey per flow, or as much as 13 kilos per year.

When should I monitor my hives?

Period of the year	Objective
Early spring	Early detection makes it possible to plan effectively and assess the need for an early springtime treatment without honey supers. A second check will be necessary after the spring treatment to confirm its efficacy.
During a honey flow	Detect a massive Varroa build-up and plan possible intermittent treatment between honey flows.
Late July - August	Choose the best-suited late-season treatment depending on the level of infestation.
September - October - December	Ensure effectiveness of late summer treatment and assess the need for additional treatment in winter (when brood is absent) or early next spring.



Anatomy of a Varroa EasyCheck®

- ▶ **Tight-fitting lid is leak-free and comfortable to use**

- ▶ **Made from durable plastics**
- ▶ **A robust and reusable product**



- ▶ **Two lines indicating the volume for 200 or 300 bees**

- ▶ **Designed for effectiveness: Fallen mites pass through holes in the base and sides of the white basket**

HOW TO USE VARROA EASYCHECK®?

Varroa EasyCheck is the first 3 in 1 ready-to-use monitoring device that can be used for alcohol wash, sugar roll and CO₂ injection. The choice is up to you!



1. Alcohol wash

This method consists of immersing a sample of bees in alcohol and then gently shake the EasyCheck to detach the phoretic mites so they can be counted. This method leads to the loss of the sample, but it is the most consistent in terms of delivering accurate results. It has been recognized as the most accurate, reliable, and economical option for beekeepers.¹⁻²



2. Sugar roll

With this method, the bees are gently rolled with powdered sugar, causing the mites to separate from the bees. The EasyCheck is then gently shaken, causing the sugar and the mites to pass through the white basket's holes. It keeps the sample of bees alive, but the result may vary depending on use and humidity (clogging of the sugar).



3. CO₂ injection

In the CO₂ method, bees and mites are rendered unconscious by exposure to carbon dioxide gas. The sample of anesthetized bees is then gently shaken in the EasyCheck, causing the mites to fall from the bees and pass through the white basket's holes. Research conducted in Europe² indicates results that are similar in accuracy to those obtained by an alcohol wash.



For detailed instructions, pictures and videos, check the following link or scan the QR code: www.varroa-easycheck.com



1 - Honey Bee Health Coalition - Tools for Varroa Management 7th edition, Page 7

2 - Efficiency of Varroa monitoring methods, the benefits of standardized monitoring devices. Ludovic de Feraudy, Dr. Ulrike Marsky & Ph.D. Jiri Danihlik. - Apimondia 2019 proceeding.



Useful tips to better fight the mite

Integrated

Pest management



- ✓ **Regular monitoring of mite infestation throughout the year, beginning in spring** (at least four times a year)
- ✓ **Check your mite infestation BEFORE and AFTER treatment.** This is the only way to know if your treatment was successful. *If you had 10 000 mites in your hive, the treatment could be 97% effective and you will still have 300 mites in your colony after treatment.*
- ✓ **Adapt your treatment strategy depending on your infestation** (do not stick to one treatment a year at the same date).
- ✓ **Stay informed about local infestation thresholds**
- ✓ **Renew brood comb every 2 or 3 years minimum**
- ✓ **Treat all colonies in an apiary at the same time** to prevent re-infestation
- ✓ **Rotate the active ingredients** (and not only the treatment!)
- ✓ **Use only registered treatments and respect the product labels and instructions**



What is a registered Varroa treatment?

A registered Varroa treatment is a veterinary medicine that has been approved by the competent authorities. A vet medicine is tested not only for efficacy, but also for its safety for the colony (bees, brood, queen), for the beekeeper and the final consumer of the hive products. Registered veterinary medicines have been tested at different concentrations and different applications (variation of the duration, posology, way of application) to find the best use. Please respect the instructions on the label and do not overdose to try to reach a higher efficacy. As your production will be part of the Human diet (honey, royal jelly, propolis), you must use only authorised treatments in your hives, to guarantee the safety and compliance of the hive products.

APIVAR® 500 mg Amitraz Bee-hive strips for honey bees. **Indication(s) for use:** Treatment of varroosis due to *Varroa destructor* sensitive to amitraz in honey bees. **Contraindication(s):** Do not use in case of known resistance to amitraz. **Withdrawal period(s):** **Honey:** zero days. Do not use during honey flow. Do not extract honey from the brood chamber. Do not harvest honey when the treatment is in place. Brood combs should be replaced with new foundation at last every three years. Do not recycle brood frames as honey frames. Read carefully the instructions on the product booklet label before use. **Special precautions to be taken by the person administering the veterinary medicinal product to animal:** This veterinary medicinal product contains amitraz which can lead to neurological side-effects in humans. Take particular care in case of concomitant treatment with monoamine oxidase inhibitors, hypotensive treatment or if you have diabetes. Amitraz may cause skin sensitization. Avoid contact with skin. In case of contact, wash thoroughly with soap and water. Avoid contact with eyes. In case of contact, rinse with plenty of water immediately. Usual beekeeping protective clothes including impervious gloves should be worn when handling the product. Do not eat, drink or smoke whilst handling the product. Keep children away during application of the product. Wash hands after use. Do not inhale or ingest. If side effects are noted, seek immediate medical assistance and show the label to the physician. v0917

OXYBEE powder and solution for 39,4 mg/ml bee-hive dispersion for honey bees. **Composition:** 1 ml of mixed bee-hive dispersion contains 39,4 mg of oxalic acid dehydrate. **Indication(s) for use :** For the treatment of varroosis (*Varroa destructor*) of honey bees (*Apis mellifera*) in brood free colonies. **Withdrawal period(s) :** **Honey:** zero days. Do not use during honey flow. **Special precautions :** This veterinary medicinal product is highly acidic and could have irritating and corrosive effects on the skin, eyes and mucous membranes. Personal protective equipment consisting of protective clothing, acid-proof gloves and safety glasses should be worn. **Marketing authorisation holder:** Dany Bienenwohl GmbH, Geyerspergerstr. 27, 80689 Munich, Germany. **Distributed by:** Vêto-pharma, 12-14 avenue de la Croix Martre 91120 Palaiseau, France. V0119

Apivar and Oxybee are veterinary medicines. Please ask advice to your veterinarian, pharmacist or sanitary organization. In case of persistence of clinical signs, consult with your veterinarian. Read carefully the instructions on the product label before use.

RIP VARROA

This is how we like them!



www.veto-pharma.eu
www.blog-veto-pharma.com
 facebook.com/vetopharma

 **Véto-pharma**
Committed to apiculture