Apivar®
By Véto-pharma

veto-pharma.eu

**Manufactured in France**
to the highest quality standards


# The worldwide Varroa treatment leader

## • Frequently Asked Questions •

Worldwide
**Varroa**
treatment
**leader**
**30+**
countries

**5+**
**million**
colonies
treated
per year

**www.veto-pharma.eu**

**facebook.com/vetopharma**

Véto-pharma
Committed to apiculture

# Apivar®

By Véto-pharma

# > Summary

## PART 1 – Strategy for combating Varroa



## PART 2 - In practice

# > Summary

## PART 3 – Effectiveness and safety



## PART 4 – Other anti-Varroa treatment solutions



## PART 5 - APIVAR® – Product characteristics

## 1 Why treat against Varroa?

*Varroa destructor* is an acarid that causes the following types of harm to adult bees and their broods:

- Physical injuries,
- Despoilment (regular taking of hemolymph),
- Behavior disruption, and
- Vector (transmitting viruses and other infectious agents).


These actions are generally harmful to both individual and collective immunity, all the more so as it is known that Varroa infestation interacts with other agents stressful to the colony. Consequently, the presence of *Varroa destructor* causes a reduction in bee lifespan proportional to the rate of infestation, which is particularly problematic in winter, since adult bees that were parasitized during their development will not be able to survive the cold period successfully and contribute to the growth of the colony in spring.

**A study published in 2010[1] (Yves Le Conte, Marion Ellis, and Wolfgang Ritter) shows that an infested, non-treated colony may die in a period of between 6 months and 2 years. This time is determined not only by the capacity of the Varroa to reproduce in the brood, but also by pressure from neighboring hives. A high density of bees combined with a severe Varroa infestation increases the speed of death of the colony (Ritter et al., 1984[1]). Failing to treat certain colonies may thus endanger one or more populations.**

Thus, the objective of regular treatment against Varroa is not only to control the infestation of the treated colony, but also to limit more collectively stress from parasitic populations and their health impact on neighboring apiaries and on the apicultural population in general.

### GOOD TO KNOW:

Varroa reproduction takes place in the capped brood cell. Varroa visible on the backs of bees are solely adult females, called phoretic Varroa.

## 2 How does Apivar treatment work?

**THE APIVAR STRIP IS A COMBINATION OF TWO COMPONENTS:**

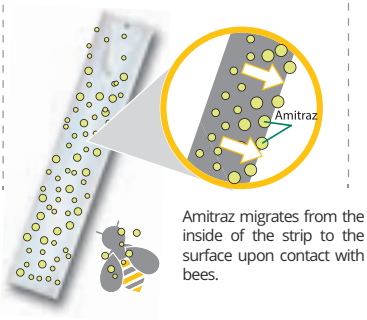
- **Amitraz** is an acaricide. It acts on acarids by blocking Varroas' nerve transmissions in octopamine receptors, which causes paralysis in the parasite. The Varroa can no longer cling to the bee, lets go of its back, and falls to the bottom of the hive. Incapable of feeding, the Varroa dies of starvation secondary to paralysis. The amitraz used in the production of Apivar is of veterinary pharmaceutical quality, thus ensuring a high level of quality.

- **Plastic polymer strip:** specially designed to ensure a regular release of amitraz on the surface of the strip after its placement in the hive.

Apivar works by contact: the active ingredient is delivered continuously over time. As bees walk on the strip's surface they pick up molecules of the active ingredient and then distribute them throughout the colony.

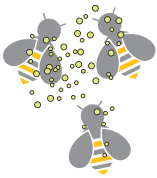
### Mode of action of Apivar® in the hive

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




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 **Mites on the bees are exposed to the amitraz** which leads to **paralysis and starvation**.

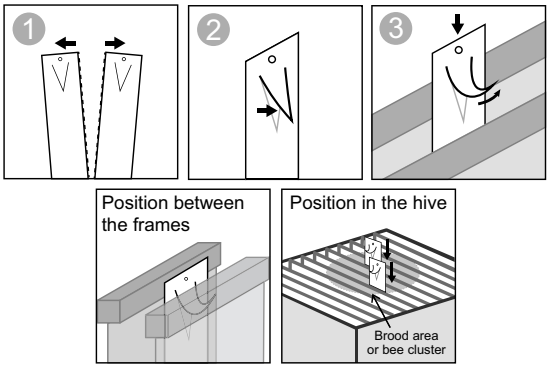
4 **The mite population drops and subsequent mite generations are also killed.**

**Slow release technology :**

Apivar is a treatment designed to act over time to treat several reproductive cycles of Varroa and to limit re-infestation. The plastic polymer strips release amitraz continuously over at least a 6-week period, so Varroa falls in the beginning of the treatment may be lower than during a flash treatment. However, Varroa falls rise dramatically as the active ingredient in Apivar continues to spread throughout the colony, killing generation after generation of mites. For more information, see question 25.

## 3 What are the recommendations for optimum effectiveness?

**USING APIVAR:**




**Make sure that honey suppers are not installed**

1. Separate the double strip.
2. Push the strip's V-shaped die-cut outside.
3. Push each strip between the head of 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.*

**Brood center** **Brood edge**

### Positioning the strips correctly:

The effectiveness of the treatment is tied to contact with the strips by the bees transporting amitraz into the hive; therefore **it is necessary to position the strips vertically at the heart of the brood area or the bee cluster** (and not on the edges of the brood) to promote as much contact as possible.

Place 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 the most symmetric way as possible inside the brood area or bee cluster, avoiding the edges of this area. The strips should be placed in such a way that the bees can have free access to both sides.

### Comply with the recommended number of strips:

**The recommended dosage is two strips per hive. Apivar is most effective when applied at the specified dosage.** This maximizes the number of contacts of bees with a large enough quantity of amitraz to eliminate as many Varroa as possible.

**Leave strips in the hive between 6 to 10 weeks according to the size of the brood.**

The larger the brood is, the longer the strips should be left in the limit of 10 weeks.
Not re-use the strips.
Remove the strips after the treatment.

**Respect the duration of treatment:**

To avoid encouraging the development of resistance, do not leave the strips in place throughout the winter season.

### Treat all of the hives at the same time:

Adult Varroa mites attach themselves to adult bees and are transferred to new hives whenever hives are robbed, when males migrate from one hive to another, and when pollen is gathered by foraging bees. Hive member exchanges, meetings of colonies, artificial swarming and even bee shipments may infest a hive that has previously been healthy. **To prevent this, check your hives regularly and treat all of them at the same time.**

### Check strip positions during the treatment:

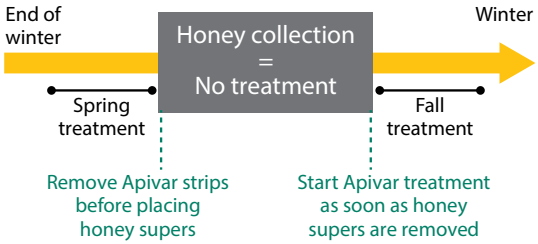
Brood areas can shift slowly within the hive, so it is important to make sure Apivar strips remain near the brood. We recommend checking the position of the strips during the treatment or at the end of the treatment. **If you discover that the brood area has moved away from the Apivar strips, relocate the strips near the brood area.** Strips must be removed after a maximum of 10 weeks.

## 4 When and how many times per year can I use Apivar?

**Apivar can be used any time when supers are not on the hives.**

The purpose of the spring treatment is to decrease mite populations (and reduce the risk of colony loss) during the nectar-collecting season, thereby maximizing honey yield. The spring treatment must be completed before honey supers are installed.

Apivar can also be applied late summer though fall, after honey supers are removed, to reduce mite load in the colony before winter bees are produced. This will maximize the strength of the colony for wintering. Fall treatments should be initiated as soon as honey supers are removed.




Optimize the power of Apivar by scheduling hive treatments as shown above.


## 5 Why shouldn't I leave Apivar strips in my hives over winter?

Although the practice of leaving strips in the hive over winter does not appear to be harmful, it is not recommended because the amount of active ingredient being released by the strips is supposed to be lower at the end of the treatment period (and varies depending on wax or propolis deposited by the colony on the strips' surface). This could probably result in an opportunity to develop resistance to the active ingredient.

Strips must be removed after 10 weeks of treatment.

## 6 Can repeated treatments with Apivar cause resistance?

**USDA-ARS scientist Frank A. Eischen suggests that the fast hydrolysis (degradation) of amitraz in beeswax and honey could prevent the selective pressure of genetically resistant mites, which would explain amitraz's effectiveness over time[2].**

In addition, even with repeated and prolonged use of Apivar for more than 20 years, **the average effectiveness of Apivar remains stable**, as proven, for example, by annual effectiveness monitoring conducted in France by FNOSAD* (See question 21).

This is due to the controlled dose of amitraz delivered by Apivar in hives, as well as to the high instability of amitraz, which prevents its accumulation in hive (see question 22). Moreover, the mode of action of amitraz (which is not directly lethal) is less likely to cause resistance[3].

**Fédération Nationale des Organisations Sanitaires Apicoles Départementales, or the National Federation of Departmental Apicultural Health Organizations; see question 21*

## 7 Does outside temperature influence the effectiveness of Apivar? Is the product more effective in warm weather?

The diffusion of amitraz within the colony occurs thanks to the contact of bees with the strip, and then of these bees with each other. Consequently, it is not directly linked to the ambient temperature.

However, it is known that low temperatures may reduce the activity of bees within the colony, which may result in fewer contacts with the strip[4].

**In practice:**

Apivar can be introduced (when required by the health situation) as soon as hive activity resumes in the spring, or the withdrawal of supers even when outside temperatures are high, without risk to the colony.

## 8 Can Apivar® treatments be done in feeding periods?

There are no counter-indications for feeding colonies at the same time as Apivar strips are inserted into the hives, as the system does not disturb feeding activity.

Also, feeding causes an increase in activity in the colony, which mechanically causes increased contacts between bees and the strips. Treating against Varroa during feeding may thus increase the apparent effectiveness of the treatment and the number of contacts between bees and strips.


**In practice:**

Feeding and Apivar can be commenced at the same time as part of preparations for the winter season.

## 9 Can Apivar treatments be administered during honey flows?

Apivar cannot be used in the hive if the honey supers are installed.

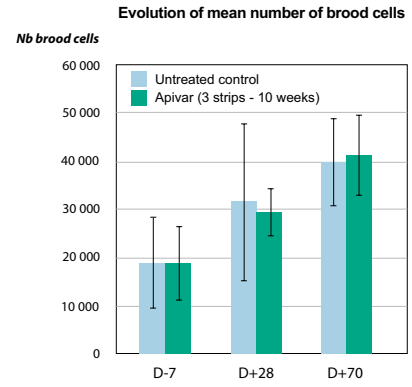
## 10 Can Apivar treatments be carried out in the presence of brood?

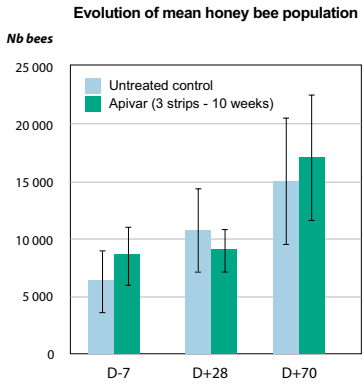
**Yes, Apivar can be used in the presence of brood. This is one of the major advantage for a long duration treatment, that will be able to cover several reproduction cycles of varroa mites.**

In fact, the extended release of amitraz over several weeks enables it to be active over several Varroa reproductive cycles, which leads to the effective control of Varroa. The brood is where Varroa reproduce and are most numerous, so it is important to carry out treatment at this location in order to maximize the concentration of amitraz in this part of the colony.

**Field trials shows that Apivar has no negative effect on brood and bee population :**

Total population before and after a ten-week treatment with 1.5 times the dosage of Apivar[5]




Be aware that the general recommendations of use (see question 3) need to be followed: 2 strips per hive, positioning the strips in the center of the brood area or bee cluster, duration of the treatment is between 6 to 10 weeks and depends on the brood size : the larger the brood is, longer the strips should be left not exceeding 10 weeks.

**In practice:**
Push each strip between the head of 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.

## 11 Can Apivar treatments be carried out in hives with limited brood or in the absence of brood?

Yes, Apivar is also effective with limited brood or in the absence of brood (due to natural or artificial lack of egg-laying activity), and particularly safe for the colony and the future resumption of egg-laying by the queen.

Dosage is 2 strips per hive and the duration of treatment is 6 to 10 weeks (see the general recommendations in question 3).

Strips have to be positioned in the center of the bee cluster.

## 12 Can Apivar be used in the presence of queen cells?

There are no counter-indications to the use of Apivar in the presence of queen cells, or non-mated young queens. The use of Apivar is safe and the product was developed with the primary objective of not harming the colony, or its constituents.

For beekeepers rearing queens, it is recommended that colonies be treated prior to commencement of queen rearing activities, and strips be removed before starting the production of queens, in the absence of specific data concerning Apivar use while rearing queens.

## 13 Can the application of the strips be dangerous for the queen?

Strips have been designed to be sufficiently rigid to be inserted very easily between the frames. They should be slowly and gently inserted – without forcing or pushing – to allow the bees (and the queen) to move away from the strips during the insertion. Once strips are in place, the bees become accustomed to their presence and begin to walk on them, beginning the process of distributing the active ingredient within the hive.

## 14 What should be done in the case of propolized strips? Do the strips need to be scratched during treatment to increase their effectiveness?

Propolization of Apivar strips is generally rare and doesn't matter very much. When it is noted, it is recommended to remove the propolis on the surface of the strip by simply scraping it with the hive tool before repositioning it in the brood. Propolis may hinder bees' contact with the surface of the strip and therefore limits the diffusion of amitraz within the colony. For more information, see question 15.

### GOOD TO KNOW:

When a foreign element penetrates the hive, the bees initially try to eliminate it if it disturbs them. Propolization is secondary and it varies according to colony whether destruction can take place and whether the disturbance is significant.

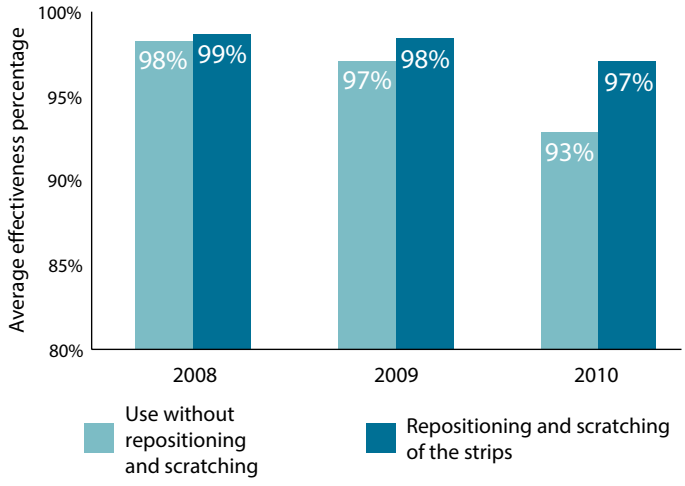
**In practice:**
Scratch the strips with a hive-tool in case strips are covered by propolis and/or wax. For sanitary reasons, do not forget to clean the frame-lifter after this type of operation.

## 15 Is a systematic repositioning of the strips necessary during treatment?

As shown by the results of a study conducted by a French association, ADAPI*, the repositioning of the strips and scratching them during treatment can improve Apivar efficacy. ADAPI compared the effects of an Apivar treatment with and without the repositioning of strips; the Apivar strips were scratched using the hive tool and repositioned in the cluster at mid-treatment. **As showed by the chart bellow, efficacy is increased after the repositioning of the strips.**

**Association pour le Développement de l'Apiculture Provençale, or Association for the Development of Provincial Apiculture*

**Results of ADAPI study on the repositioning of strips[6]**




## 16 How long will Apivar strips remain effective after opening the package?

Apivar strips are vacuum-packed to preserve their effectiveness. To guarantee a high concentration of active ingredient in the hive, Apivar strips must be used immediately after opening the packaging. Discard any unused product.

**In practice:**

We recommend you install Apivar strips in the hive immediately after opening the package.

## 17 Will sunlight affect the Apivar strips?

The active ingredient in Apivar strips is sensitive to light, so prolonged exposure to sunlight or other light sources could potentially decrease its effectiveness.[7]

Apivar strips are packaged in a multi-layer foil pouch that protects the strips from light. Once the packaging is opened, the strips are placed inside the hive, where they are further protected from light sources.

**In practice:**

We recommend you install Apivar strips in the hive immediately after opening the package.

## 18 Will storing Apivar strips in my vehicle during the summer affect their effectiveness?

As long as the packaging has not been opened, and the strips are therefore kept in a vacuum, temperatures until 30°C will not affect the quality of Apivar.

In any case, keeping the product in a vehicle is not recommended for long periods, and where possible it is preferable to keep the product below 30°C.

## 19 How should I dispose of used Apivar strips?

After removing the strips from the hive, they should be disposed of in accordance with instructions and local regulations. Regulatory requirements vary from location to location, so be sure to ask about disposal requirements in your area. Please read and follow all label instructions.

## 20 The bees are hollowing out the wax around the strips. What does this mean?

When any foreign body is introduced into a hive, the colony will try to destroy it. Next, depending on the disturbance created, the intruder may be propolized (in the case of cadavers or certain aggressive treatment products) and the colony will reorganize the space around it.

The insertion of a rigid plastic strip reduces the space available between frames. To be able to move quickly, the bees hollow out the wax around the strips. Therefore this is not a behavior meant to avoid the strips.

In fact, during the inspection of colonies in the process of being treated, it is very common to note total normal movement of the bees in contact with the strip.

This behavior is normal for the colony, it isn't a direct effect of the strips. With the removal of the strips at the end of treatment, which eliminates the disturbance caused by their presence, the wax will be spread out again and cells will not be abandoned and will receive the queen's eggs.

## 21 Are Apivar strips subjected to effectiveness testing? Is Apivar still effective after regular use?

In order to be registered in European countries as a medecine, Apivar has been subject to a variety of stringent regulatory studies and evaluations in compliance with applicable pharmaceutical standards.
In addition to that, several independent studies are carried every year in different countries.
For example, in France – where Apivar has been approved for large-scale use since 1995 – annual evaluations consistently demonstrate that Apivar remains a safe and effective means of controlling Varroa mite infestations.

**Latest results regarding the effectiveness of Apivar in various countries:**

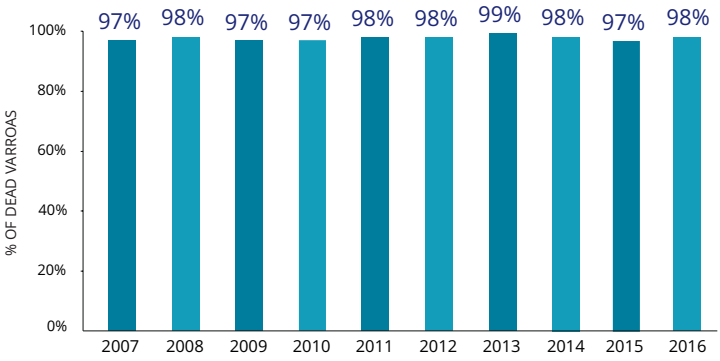
- In France, FNOSAD* has conducted an annual nationwide check of the effectiveness of anti-Varroa medications since 2007. The results show an average effectiveness of at least 97% for 10 years[8].
- This average effectiveness has remained constant between 2007 and 2016 even with repeated and frequent Apivar use in French beehives, as well as variable levels of infestation depending on the region and the year.

*Fédération Nationale des Organisations Sanitaires Apicoles Départementales, or the National Federation of Departmental Apicultural Health Organizations

### France (from 2007 to 2016)

**Mean efficacy on more than 100 colonies per year in different apiaries located in different regions of France[8]**

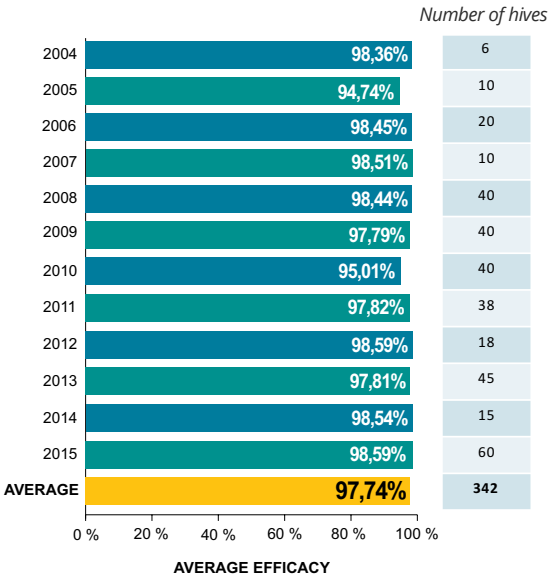
*National Effectiveness Monitoring of the French Federation of Sanitary Beekeeping Organizations ( FNOSAD ) of 2007-2016*



## France (from 2004 to 2015)

**Results of 12 years of follow-up of Apivar treatments by ADAPI[9]**

*Effectiveness of apivar (10 weeks of treatment) in late summer on different apiaries in the South of france from 2004 to 2015*

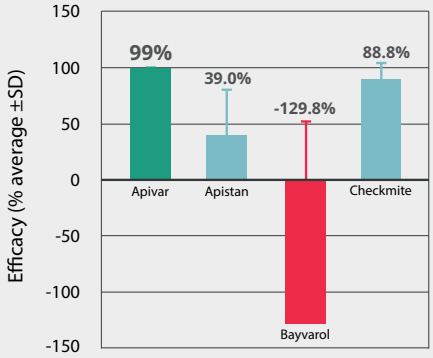



**At the governmental level, in its 2009 report on bee colony mortality, AFSSA (Agence Française de Sécurité Sanitaire des Aliments, or the French Agency for Food Health Safety) recommended the preferential use of Apivar against Varroa.[10]**

In Canada, a 2011 study showed Apivar's superiority over Checkmite, Apistan, and Bayvarol.

## Alberta - Canada (2011)

**Efficacy of Apivar® on the Varroa mite, Varroa destructor, in Alberta Canada[11]**

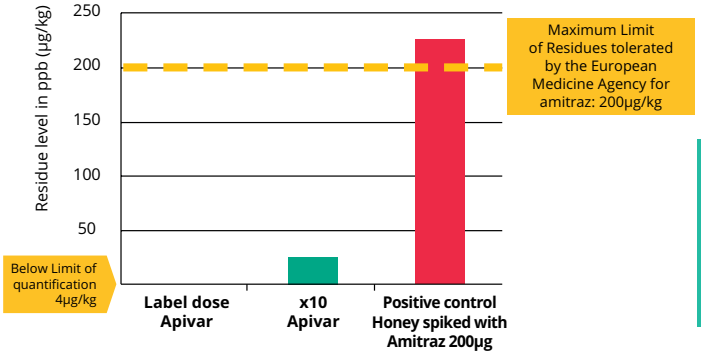


## 22 Have Apivar strips been subjected to acaricide residue tests in honey and wax?

**The lack of residue in honey is related to the instability of amitraz in an acidic medium (Berzas Nevado et al., 1990).[12]**

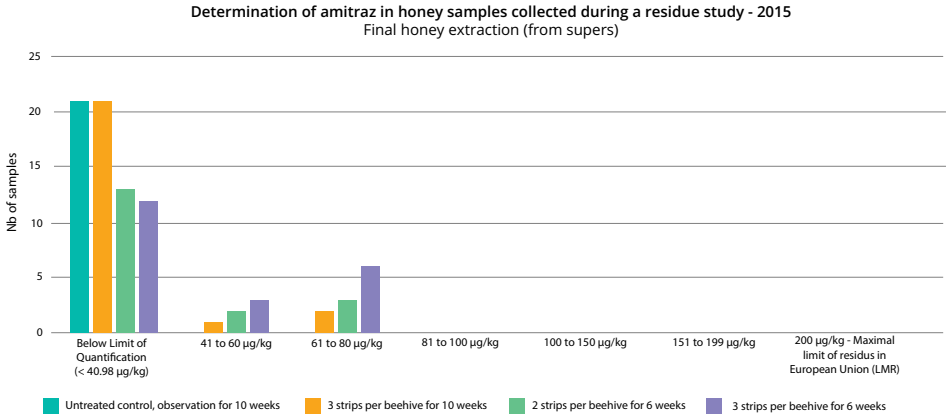
Studies have been conducted to measure the level of amitraz and its residues in honey after an Apivar treatment.

In this study[13] of Jeff Pettis (USDA-ARS, Beltsville, MD USA) to analyse residue transfer into honey from hives treated with Apivar®, none of the parent compound, amitraz was detected in honey, even in colonies treated with X10 Apivar label dosage. For metabolites, amounts of residues were very limited and detectable only for the group treated at 10 fold the recommended dosage, and always far below the acceptable Maximum Limit of Residues (MLR).




**The use of Apivar in autumn does not cause problematic residue in honey harvested the following spring.**

At this study[14], samples of honey where collected after a spring treatment. Amitraz and its metabolites were detected below the limit of quantifications for the large majority of honey samples, and far bellow the acceptable Maximum Limit of Residues (MLR) tolerated by the European Medicine Agency (EMA) when detected:



## 23 The treatment takes a long time; does amitraz need to build up in the hive?

Apivar strips must be left in the hive for a minimum of six weeks in order to cover several Varroa reproductive cycles.

This long treatment is not necessarily synonymous with accumulation; amitraz is very sensitive to hydrolysis, meaning that it is rapidly destroyed after release upon contact with water in an acidic environment.[15] Therefore it does not remain in wax or honey during or after treatment.[16] (See question 22)

However, it is still important to remove the strips at the end of treatment in order to prevent the presence of low quantities of amitraz in the hive. Failing to remove the strips is a poor practice that encourages the development of possible resistance.

## 24 Is Apivar more toxic than pyrethrinoids?

**Checks of Apivar safety were conducted before its release onto the market in Europe, and two types of potential toxicities were assessed:**

- Toxicity for the animal being treated (bees and queens) – a study has shown that at five times the recommended dose for 6 weeks, Apivar presents no risk for exposed bees and queens, including for brood development.[17]

- Toxicity for humans after consumption of products due to residue in products such as honey and wax. This risk is taken into account by the fixing of the Maximum Residue Limit (MRL) acceptable in honey intended for human consumption. This dose is 200 ppb (or 200 mg for one ton of honey).[18]

Amitraz is a molecule that is highly sensitive to breakdown. When the molecule is released by the strip and transported by bees, it breaks down in a small amount of time (between a few hours and a few days). This high sensitivity prevents the accumulation of residue and contributes to the safety of using Apivar.

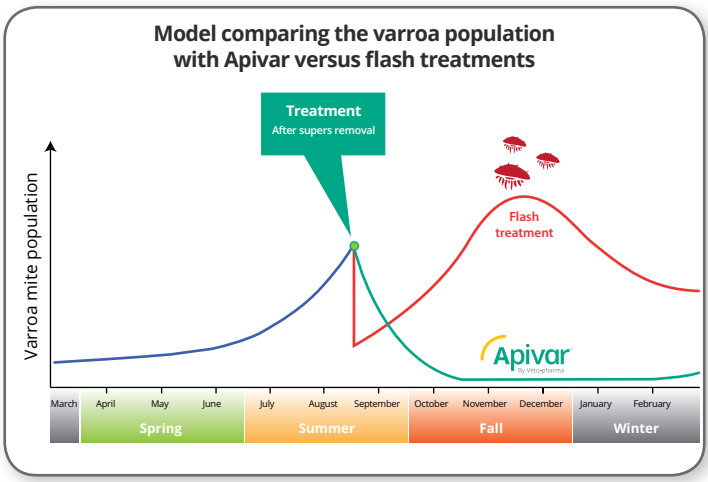
In 2007, ANSES Sophia Antipolis (the European Union reference laboratory for bee health) published a study on acaricide residues in honey and wax after treatment of colonies with Apivar, which showed an absence of amitraz residue after 24 hours.[12] Other studies have concluded that residues of the active ingredient and its metabolites are far lower than the authorized threshold (200 ppb in honey, or 200 mg in 1 ton of honey).[12]

On the other hand, studies conducted by S. BOGDANOV[19] and K. WALLNER[3] have shown the presence of residues in honey and wax (even after heat treatment) of flumethrin, fluvalinate, and coumaphos.Thus, molecules such as pyrethrinoids, which are much more stable in honey and wax than amitraz, have a higher risk of being present for a longer amount of time in products destined for human consumption.

## 25 I use liquid amitraz, is that as effective and risk-free as Apivar?

Most of the currently available illegal Varroa products are short-acting treatments that deliver an immediate "knock-down" effect in which many adult mites are killed quickly. These treatments only kill phoretic mites (the mites on the bees). As a result, the next generation of mites quickly recontaminates the colony. A quick kill may look impressive, but 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.

**The chart below illustrates how a single application of Apivar works to control Varroa mites through an entire beekeeping season, while illegal short-acting treatments fail to fully control mite infestation.**




### Comparison of winter mortality between authorized treatment and unauthorized treatment in apiculture[20]

| Treatment | 5 years mortality rate (2009-2015) | Number of hives |
|---|---|---|
| **Apivar®** | **14,1 %** | **17 242** |
| **Non authorised liquid amitraz** | **22,8 %** | **6 695** |

**Based on this data, the mortality gap represents an estimative value of 4 455 € in a 300-colony operation. This does not take into account the added value of improved honey production. Fore more data concerning winter mortality, see question 26.**

# 26 What is the difference between Apivar and Apitraz?

Apivar and Apitraz are two varroas treatment based on amitraz.
**But this amitraz-based composition doesn't mean that Apitraz is a generic of Apivar.**
They are indeed two very different treatments:

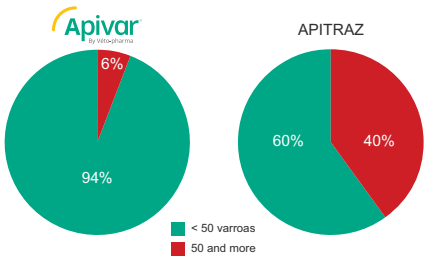
| | Apivar By Véto-pharma | APITRAZ |
|---|---|---|
| **Origin** | Manufactured in **France** | Origin of manufacture **not disclosed to the user** |
| **Safety and overdosage** | "After 1.5 times the recommended therapeutic dose for 10 weeks, **no adverse effects were observed on bees.**" [21] | "At 1.5 times the recommended dose, administered during a period of 8 weeks, **a small increase of bees mortality has been observed.**" [22] |
| **Composition** | Apivar contains **only 1 excipient (the plastic strip)** [23] | Apitraz containts **8 excipients** [24] |
| **Shelf life** | Apivar can be stored **2 years** at a temperature **not exceeding 30°C** [25-26] | Apitraz can be stored only **1 year** at a temperature **not exceeding 25°C** [27-28] |

## Best results of efficacy for Apivar during a comparative study with apitraz during fall 2016[29]

Apivar was more effective in the number of residual varroas at the end of treatment, as well as in the success rate of the treatment.

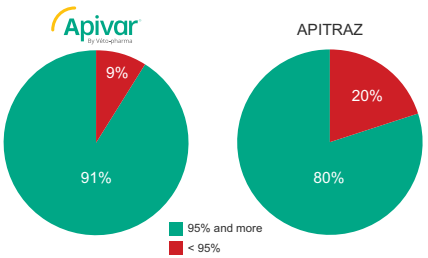
20% of the colonies treated with Apitraz did not reach the 95% threshold. This was only the case for 9% of colonies treated with Apivar.[29]

**Residual varroas after treatment**




| Residual varroas | APIVAR | APITRAZ |
|---|---|---|
| < 50 | 150 | 9 |
| 50 to 100 | 1 | 1 |
| 100 to 500 | 7 | 5 |
| More than 500 | 1 | |
| GRAND TOTAL | 159 | 15 |

**Achievement of 95% efficiency**




| Efficacy | APIVAR | APITRAZ |
|---|---|---|
| < 80% | 3 | |
| 80 to 90% | 4 | 1 |
| 90 to 95% | 7 | 2 |
| 95% and more | 145 | 12 |
| GRAND TOTAL | 159 | 15 |

*Efficacy tests conducted in France with 5 anti-varroa treatments, on 256 colonies.*

# 27 What effect does Apivar have on colony mortality in winter?

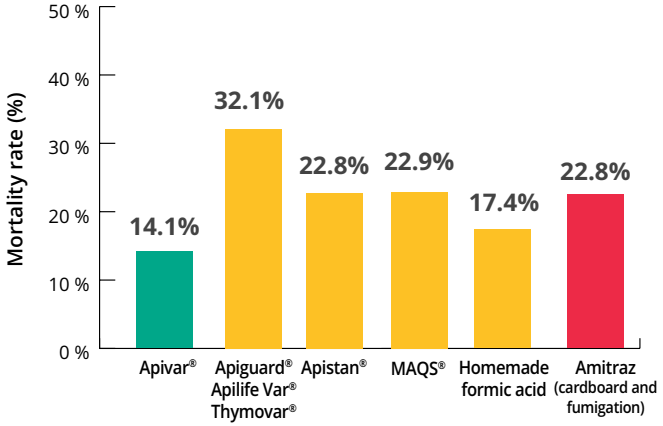
Monitoring of winter mortality over five years in apiaries in the Alsace region in France was conducted on a total of 28,268 colonies. Varroa treatment is the principal factor explaining winter mortalities. The high effectiveness and harmlessness of Apivar significantly reduce mortality in treated hives compared with the use of other treatments employed in France.

## Impact on winter mortality[20]

In winter mortality monitoring,
with more than 20 thousand hives over 7 years,
Apivar significantly reduced mortality
compared with other organic
and conventional treatments.

*Regional study report "Pertes hivernales 2014-2015 en Alsace". Chamber of Agriculture of the Alsace Region Ballis A. – June 2015*

**Wintertime losses according to anti-Varroa medications used over 7 years of study in Alsace, France (2009-2015)[20]**




| Number of colonies treated | 17 242 | 1 886 | 1 215 | 48 | 6 541 | 6 695 |
|---|---|---|---|---|---|---|

## 28 Can we be sure of the quality and quantity of amitraz present in the strips?

**Apivar is produced in France,** where its production must meet strict requirements for the legal quality level of the product.

**This involves:**

- Strict control of starting materials even before their use to guarantee their compliance.
- Control of manufacturing process.
- All batches released on the market are individually analysed, including for the quantity of amitraz present in the strips. No batch that fails to comply is placed on the market.

In addition, Véto-pharma controls the entire Apivar production chain from the supply of primary materials to release on the market. This means that Véto-pharma is able to guarantee the high quality of Apivar, in accordance with regulations in the different countries where the product is authorized.


© Anatoli - Fotolia

**BIBLIOGRAPHICAL SOURCES:**


1- LE CONTE Y, ELLIS M, RITTER W (2010). Varroa mites and honey bee health: can Varroa explain part of the colony losses? Apidologie 41 (3) 353-363 (2010) DOI: http://dx.doi.org/10.1051/apido/2010017
2 - EISCHEN FA, GRAHAM RH (2014). Amitraz Resistance by Varroa destructor in US colonies - Jour. Econ. Entomol
3 - WALLNER K (1999). Varroacides and their residues in bee products - Apidologie 30 (2-3) 235-248 (1999) - DOI: http://dx.doi.org/10.1051/apido:19990212
4 - FAUCON JP, DRAJNUDEL P, CHAUZAT MP et AUBERT M (2007). Contrôle de l'efficacité du médicament APIVAR ND contre Varroa destructor, parasite de l'abeille domestique ; Revue Méd. Vét., 2007, 158, 6, 283-290
5 - Apivar registration dossier (2015). Study 2026-2015 - Testapi
6 - ADAPI (2012). Efficacité des médicaments AMM dans la lutte contre varroa, focus sur L'APIVAR®. La lettre du développement apicole en Provence N°23 Janvier 2012
7 - MRAD E (2011). Les antiparasitaires externes chez les carnivores domestiques, p.74
8 - FNOSAD (2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 et 2016). Etude d'efficacité des médicaments varroa - 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 et 2016.
9 - ADAPI (2016) - Résultats des suivis des traitements avec Apivar à l'ADAPI entre 2004 et 2015 – ADA France INFOS – Janvier 2016
10 - CHIRON J, HATTENBERGER AM (2009). Mortalités, effondrements et affaiblissements des colonies d'abeilles, rapport AFSSA
11 - NASR et al, 2012, Canadian Pest Surveillance Branch, Research and Innovation Division, Agriculture and Rural Development
12 - MARTEL AC, ZEGGANE S, AURIERES C, DRAJNUDEL P, FAUCON JP, AUBERT M (2007)Acaricide residues in honey and wax after treatment of honey bee colonies with Apivar or Asuntol 50 - Apidologie 38 (6) 534-544 (2007) DOI: http://dx.doi.org/10.1051/apido:2007038
13 - PETTIS J (2013). Amitraz residue transfer into honey from Apis mellifera hives treated with Apivar®, USDA-ARS, Beltsville, MD USA – 2013
14 - LC-MS/MS determination of amitraz(sum) (sum of amitraz and its degradation products DMPF, DMF and DMA) in honey samples collected during a residue study. Study ATL-15-1348 – Atlanbio – November 2nd, 2015.
15 - Corta, Edurne & Bakkali, A & Berrueta, Luis & Gallo, B & Vicente, F. (1999). Kinetics and mechanism of amitraz hydrolysis in aqueous media HPLC and GC-MS. Talanta. 48. 189-99. 10.1016/S0039-9140(98)00237-9.
16 - Amitraz (Bees) summary report (2) European Agency for the Evaluation of Medicinal Products – EMEA/MRL/572/99-FINAL; February 1999 - http://www.ema.europa.eu/docs/en_GB/document_library/Maximum_Residue_Limits_-_Report/2009/11/WC500010419.pdf
17 - Apivar registration dossier, study API002 (1993). Tolerance and residues in bee productions
18 - Apivar registration dossier (1993). Study API005
19 - S. BOGDANOV et al, ACARICIDE RESIDUES IN BEESWAX AND HONEY, 1997)
20 - BALLIS A (2014). Bilan de l'enquête régionale «Pertes hivernales 2013-2015 en Alsace ». Chambre d'Agriculture de Région Alsace
21 - RCP Apivar paragraphe 4.10 http://www.ircp.anmv.anses.fr/fiche.aspx?NomMedicament=APIVAR
22- RCP Apitraz paragraphe 4.10 http://www.ircp.anmv.anses.fr/rcp.aspx?NomMedicament=APITRAZ+500+MG+LANIERE+POUR+ABEILLES
23 - RCP Apivar paragraphe 6.1 http://www.ircp.anmv.anses.fr/fiche.aspx?NomMedicament=APIVAR
24 - RCP Apitraz paragraphe 6.1 http://www.ircp.anmv.anses.fr/rcp.aspx?NomMedicament=APITRAZ+500+MG+LANIERE+POUR+ABEILLES
25 - RCP Apivar paragraphe 6.3 http://www.ircp.anmv.anses.fr/fiche.aspx?NomMedicament=APIVAR
26 - RCP Apivar paragraphe 6.4 http://www.ircp.anmv.anses.fr/fiche.aspx?NomMedicament=APIVAR
27 - RCP Apitraz paragraphe 6.3 http://www.ircp.anmv.anses.fr/rcp.aspx?NomMedicament=APITRAZ+500+MG+LANIERE+POUR+ABEILLES
28 - RCP Apitraz paragraphe 6.4 http://www.ircp.anmv.anses.fr/rcp.aspx?NomMedicament=APITRAZ+500+MG+LANIERE+POUR+ABEILLES
29 - Etude d'efficacité des médicaments Varroa – FNOSAD – 2016. La Santé de l'Abeille, numéros 279, 5-6/2017

# High quality products **for healthy bees**

veto-pharma.eu

PASSION
TEAM SPIRIT
CUSTOMER SERVICE
HONEY BEE HEALTH
TECHNICAL SUPPORT
VARROA EXPERTISE
QUALITY
PHARMACEUTICAL STANDARDS
NUTRITION CONFIDENCE
ASIAN HORNET EFFICACY
MADE IN EUROPE
WORLD LEADER
#STOPVARROA
RELIABLE
PARTNER
SUPPORT

Apivar® By Véto-pharma

OXybee By Véto-pharma

varroa easyCheck By Véto-pharma

VespaCatch By Véto-pharma

NutriBee® Propolis By Véto-pharma

**APIVAR® 500 mg Amitraz Bee-hive strips for honey bees. Composition:** Each 15g strip contains 500 mg of amitraz (active substance).
**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.
**Adverse reactions:** A transient change in behavior (e.g. fleeing reaction, aggressive behavior) may be observed when the strips are first placed in the hive. This is believed to be a defensive behavior rather than an adverse reaction to the product, per se.
**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. v0917
**Apivar is a veterinary medicine subject to prescription.**

**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.
**Contraindication(s):** None.
**Adverse reactions:** In clinical trials, increased bee mortality was very commonly (more than 1 in 10 colonies treated displaying adverse reaction(s)) observed. This did not affect long-term development of colonies.
**Withdrawal period(s): Honey:** zero days. Do not use during honey flow. v0917
**Oxybee is a veterinary medicine.**

APV-20-EU-N01-06/17

**www.veto-pharma.eu**

**facebook.com/vetopharma**

**Véto-pharma** - 14 avenue du Québec - Courtaboeuf - 91140 Villebon-sur-Yvette - FRANCE
Tel.: +33 (0)1 69 18 84 80 - Fax.: +33 (0) 69 28 12 93 - info@vetopharma.com

Véto-pharma
Committed to apiculture