**What is Apitraz® and how does it work?**

**Apitraz**® is a veterinary medicine product designed by Laboratorios Calier S.A. for the treatment of external parasitism caused by *Varroa destructor* in honey bees (*Apis mellifera*).1

Every multilayer sachet contains 10 white rectangular plastic strips with two tabs and a marker fold line1. There allow an easier handling and placement of the strips in the hive1.

**Apitraz**® strip is composed by 500 mg of *amitraz*1.

**Why should we treat against Varroa mites?**

Because *Varroa destructor* is a parasite that weaks the bees by feeding off haemolymph. It decreases honey bee body defences and acts as vector of viruses, which will produce serious pathological disorders and will predispose them to suffer other illness, being able to collapse or kill our hives. We should always treat our hives against Varroa in order to protect them and avoid re-infestations of surrounding hives.

It is required to diagnose varroosis in order to know the rate of infestation in the colonies and establish a proper treatment, depending on the season, the amount of brood in the colony and the method of the diagnosis.

In high rates of infestation, the normal physiology of the colony is threatened and we must treat, but we won’t be always able to save the hive, it will depend on the swarm force.

**At levels above the 3% in adult honey bees, we should treat quickly**, because our bee-hives are in serious danger to collapse.

On the other hand, *Varroa destructor* is a real plague for honey bees and beekeepers in a majority of countries all over the world. Its control is a matter of global concern of the worldwide beekeeping industry.
The strips are designed specifically per each type of bee-hive:

- **Large strip (30 cm length)**: Hives type Layens and Dadant.
- **Short strip (25 cm length)**: Hives type Langstroth (*perfección*).

### LAYENS´ TYPE

- Surface area: 240 dm²
- Dimensions: 49 x 34.5 x 41 cm

### DADANT´S TYPE

- Surface area: 220 dm²
- Dimensions: 46.5 x 38 x 31 cm

### LANGSTROTH´S TYPE

- Surface area: 160 dm²
- Dimensions: 46.5 x 38 x 24 cm

Can we treat any type of bee-hive with Apitraz®?
What is amitraz, and how does it work?

**Amitraz** is a parasiticide belonging to the formamidine group of insecticides. It has a neurotoxic action. The principal mode of action is interaction with octopamine receptors in the central nervous system (CNS) of ectoparasites which induces increased neuronal activity, abnormal behavior, detachment and death\(^1\).

**Which amounts are recommended to be administered?**

It is recommended to use **2 strips per hive**\(^1\) regardless of size of the colony.

At this dose, **Apitraz\(^\circ\)** is completely safe for honey bees. Does not affect to vital functions of the hive neither to queen’s bee behavior.

At the amount listed, **Apitraz\(^\circ\)** doesn’t leave residues in wax or honey.

Therefore, is a recommended product in a public health and biosafety point of view\(^2\) and it isn’t toxic for honey bees or beekeepers.

**Which is the administration route?**

It is in-hive use. We must hang each strip between two frames of honeycomb food stores by two tabs located on one end of the strip. Moreover, there is an orifice between the two tabs in order to insert a wire to give extra stability.
Can I place the strips on the brood frames?

NO. We must place the strips surrounding the brood frames, making sure that they reach the brood area.

How long must Apitraz® strips stay in-hive?

Apitraz® strips must stay in-hive for 6 weeks\(^1\). Nevertheless, some studies show that extending the treatment with Apitraz® 4 weeks more, prolongs its efficacy\(^2,3,4\). Therefore, our recommendation is to treat between 60 and 80 days.

When should I treat my hives with Apitraz®?

In some countries, legal regulations obligate to treat the colonies against varroosis at least once a year\(^5\).

The product should be used when the amount of brood is low relative to peak levels. In addition, the product should be applied when the bees are still active, i.e. before the bees form a winter cluster, the exact timing of which can vary between climatic zones (i.e. from September to December in the Mediterranean area). Therefore, levels of brood and climatic conditions must be considered prior to product application\(^1\).

If a second treatment is required and depending on the climate zone, we should do it before honey collection and at the beginning of the spring.

Should we treat all the hives at the same time?

All colonies in the same apiary should be treated simultaneously to avoid robbery\(^1\) and bee transfers, which could spread Varroa. In addition, we should treat the surrounding apiaries to avoid re-infestations.

A PROPER USE OF THE PRODUCT IS REQUIRED FOR OPTIMUM EFFECTIVENESS
What is recommended after removal?

After removal, Apitraz® strips should be disposed of in accordance with local requirements¹.

Is Apitraz® effective?

YES. Apitraz® has a proven effectiveness of over 98% (when the amount of brood is low and there are only 1 or 2 brood frames)²,³,⁴.

Which are the recommendations for getting higher efficacy of Apitraz®?

» The active ingredient of Apitraz® is amitraz, which can be easily hydrolysed avoiding its accumulation in wax and honey². Moreover, prevents its prolonged contact with Varroa, avoiding the habituation of the parasite to amitraz. Thus, minimizes the appearance of resistances.

» Apitraz® is composed by a plastic polymer that allows a slow and continuous release of amitraz during all the treatment.

» Amitraz acts by contact only. We must ensure that the active ingredient contacts with Varroa. Therefore, we must use the suitable strip for each type of bee-hive according to its length.

» Always use 2 strips, ensuring that they reach the brood area. They must be separated from each other and surrounding the colony.
» Correct handling and following of the instructions of Apitraz® by beekeepers is required for optimum effectiveness. Contact between the bees and amitraz strip impregnates the Varroa outer cuticle and consequently amitraz acts against this mite. The strips shouldn’t be cut or it shouldn’t be done any other handling not mentioned in the package leaflet.

» A proper use of Apitraz® at the right time is key to achieve the best performance. We obtain positive results when the amount of brood is low (1 or 2 brood frames), but the best effectiveness is when there’s no brood. In the spring, while the brood rises (from 2 to ≥6 brood frames), the effectiveness drops due to Varroa mites hide and breed inside the cells and no product acts there, particularly when they are sealed.

» We always must treat our bee-hives in high rates of infestation, but we won’t be always able to save the hive, it will depend on the swarm force. As well as we will avoid re-infestations of the surrounding apiaries.

» Respect the recommended treatment period. Don’t forget that no product acts against Varroa mites inside the sealed cells. Therefore, sometimes there will be Varroa mites during the treatment, even if we are treating for few weeks. It doesn’t mean that the product doesn’t work, but it follows the natural rule that recently-born bees are parasitized by Varroa mites. Apitraz® is designed in order to act and last during several cycles of birth. Don’t remove Apitraz® strips before the end of the treatment.
How long can strips be kept after opening the sachet?

We should use immediately Apitraz® strips after first opening¹ to ensure a good preservation of the strips.

Is there a monitoring of the efficacy of amitraz?

Recent field studies have been carried out on a regular basis to monitor the efficacy of several active ingredients (including amitraz) from authorised veterinary medicinal products used in recent years. These showed amitraz efficacy to reduce varroosis for the most part of bee-hives in the apiary².

Is the efficacy still very good despite the frequent use of amitraz?

YES. Amitraz is the active ingredient of Apitraz®. Several treatments composed by this molecule demonstrated a greater efficacy against Varroa and an ongoing effect³.

Apitraz® strip allows a slow and continuous release of amitraz during all the treatment.
Is amitraz submitted to residues trials?

Amitraz (Apitraz®) has been registered for Varroa treatment and it’s use has been approved for the European Medicines Agency which ensures it’s safety.

Furthermore, several residues trials from different acaricides in wax have identified very slow amount (trace) of amitraz in the form of its metabolite (2,4-Dimetilformamida) due to its hydrolysis.

Unlike other acaricides amitraz does not accumulate in the wax.

Is it recommended to treat at the same time as feeding?

There is no contraindication to feed and treat at the same time. Apitraz® does not affect feeding.

Indeed, feeding increases activity in the colony and probably can also increase the contact of bees with the Apitraz® strips.

Can Apitraz® strips be covered by propolis?

YES, they can. In addition, strips covered by propolis show that bees have come into contact with them and therefore they are working properly.

The strips never get too covered by propolis to compromise the correct release of amitraz. Several studies where the treatment was prolonged, showed that the efficacy still good despite the presence of propolis.

If the strips show no signs of propolis, it could be that they are not coming into contact with bees. Thus, there isn’t a proper management of them.

Apitraz® IS A VETERINARY MEDICINAL PRODUCT. NEEDS TO BE SUPPLIED ONLY ON VETERINARY PRESCRIPTION. PLEASE, ASK YOUR VETERINARIAN FOR FURTHER INFORMATION.

References:
1. Apitraz® spanish SPC. Last update: June 2016.
**Apitraz® 500 mg bee-hive strips for honey bees**

**Composition:** Each strip contains: Active substance: Amitraz 500 mg.

**Indications:** Treatment of external parasitosis caused by *Varroa destructor* sensitive to amitraz.

**Target species:** Honey bees (*Apis mellifera*).

**Amounts to be administered and administration route:** In-hive use. Use two strips per hive, hang each between two frames of honeycomb food stores. Place the strips between frames where the bees exhibit the greatest mobility. Hang the strips in such a way as to provide bees with free access to both sides, whilst maintaining bee space. Hives types:

- Hives type Dadant, place one strip between the third and the fourth honeycombs and the other between the seventh and eighth honeycomb.
- Hives type Layens, place one strip between the fifth and sixth honeycomb and the other between the ninth and tenth honeycomb.

Strips must be removed after 6 weeks. The strips should not be cut.

**Precautions of use and application timetable:** The product should be used when the amount of brood is low relative to peak levels. In addition, the product should be applied when the bees are still active, i.e. before the bees form a winter cluster, the exact timing of which can vary between climatic zones. Therefore, levels of brood and climatic conditions must be considered prior to product application.

**Withdrawal period:** Honey: zero days. Do not use during honey flow. Do not harvest honey during the 6 week treatment period.

For animal treatment only. To be supplied only on veterinary prescription. Reg. N°: 2782 ESP
✓ Perfect strip per each type of bee-hive.
✓ A larger size that allows an efficient release of the active ingredient.
✓ Ready to use plug and play strip.
✓ Efficient release of the active ingredient.
✓ Excellent efficiency.
✓ Harmless product for bees and consumers.

Distributed in Ireland and the United Kingdom:

By Duggan Veterinary Supplies Ltd.
Holycross Thurles
Co Tipperary Ireland
E41 A093
Tel: +353 504 43169
Email: Sales@dugganvet.ie

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LABORATORIOS CALIER, S.A.
Barcelona - Spain
www.calier.com