

What is the difference between Api-Bioxal and 'generic oxalic' acid found in the market?

The distinction lies in European legislation, which outlines the characteristics of the two products to ensure quality, safety (for both the environment and people), and effectiveness.

Api-Bioxal is a specialised veterinary medicine for treatment of Varroaosis. It's primary ingredient is oxalic acid, supplemented with excipients that modify pharmacokinetics and enhance effectiveness. This formulation ensures stability and meets the quality standards for application to bees. Additionally, Api-Bioxal comes with comprehensive instructions detailing proper use and potential adverse reactions, including overdose scenarios.

The constituents of Api-Bioxal adhere to European quality and production standards for medicinal products. Each veterinary medicine in Europe possesses a unique marketing authorisation number, ensuring traceability, quality control, and ongoing safety monitoring. These measures safeguard the health of users, the environment and animals, ensuring that the risk-to-benefit ratio remains favourable.

In contrast, market-available oxalic acid is classified as a chemical substance. While it may exhibit pharmacological activity, it is not a substitute for veterinary medicines. Such substances lack excipients, and producers are not obligated to guarantee the purity and safety necessary for animal use. Common oxalic acid lacks a marketing authorisation number and cannot feature instructions for animal use or claims of disease treatment. Consequently, these substances do not undergo risk-to-benefit assessments. In essence, they do not ensure safety for animal or environmental use when employed as treatments.

What Is the difference between Api-Bioxal solution and Api-Bioxal soluble powder?

The Api-Bioxal solution introduces a new pharmaceutical formulation with updated excipients, where glycerol replaces sugar and colloidal silica found in the Api-Bioxal powder. However, the active ingredient and its concentration remain unchanged, ensuring consistent effectiveness. The inclusion of these new excipients in the liquid form ensure it is long-lasting and convenient, facilitating the action of the active ingredient. Nevertheless, the heightened ease of use of Api-Bioxal solution comes at the expense of its applicability via sublimation, a method exclusive to Api-Bioxal powder. Comparative studies have shown the two forms have equal efficacy.

How many hives are treated with Api-Bioxal solution?

The number of hives that can be treated with Api-Bioxal solution depends on the number of frames populated by bees in each hive. Considering that the dosage required is 5ml per frame space occupied by bees, on average 15 hives can be treated with a 500ml bottle.

What is glycerol used for in Api-Bioxal solution?

Glycerol helps retain the water in the solution to avoid rapid dehydration, which is important for the active ingredient to work properly. Glycerol retains moisture better than sugar, it is more stable and allows the solution to be stored at room temperature for an extended period of time.

Is glycerol harmful to bees?

No it is not harmful to bees. Glycerol is naturally present in all living cells and is used in many products from cosmetics to food.

What is the concentration of oxalic acid in the solution?

The concentration of the active ingredient, anhydrous, is 4.2%

Does the effectiveness of oxalic acid depend on its concentration in the solution or on the quantity of solution administered?

The effectiveness depends on the concentration of oxalic acid in the solution and not on the quantity of solution administered. So the higher the concentration, the greater the effectiveness, within the limits of tolerance.

What is the shelf-life of Api-Bioxal after first opening?

The solution must be used within 12 months from the date of first opening and no later than the date indicated on the label (3 years). After this period, the package must be disposed of with its contents, according to current legislation.

How can I store Api-Bioxal solution?

The Api-Bioxal solution must be stored in a cool and dry place, away from heat sources or direct sunlight. It should not be refrigerated or frozen. The solution must be stored in the closed original bottle, kept away from food and out of reach of children.

Can I apply Api-Bioxal when the supers are in place?

No, it is not possible to treat the hives with the supers in place or during the collection of honey intended for human consumption.

How is Api-Bioxal Solution applied?

Api-Bioxal solution must be dripped in the gap between the top bars of frames, directly onto the bees. The amount of solution to be dripped is 5 ml for each gap populated by bees, for a maximum of 50ml per colony. The 50ml maximum is for double broods as well.

With what tool can I administer Api-Bioxal solution?

The solution can be dripped through a 50ml syringe (without needle and not necessarily sterile), or through special applicators available on the market (E.g. Dosa-Laif®, available at www.thorne.co.uk).

Can I apply it sprayed?

No, this method of application is not intended. Spraying solutions at 4.2% w/v of oxalic acids has proved to be poorly tolerated by bees and does not increase effectiveness (Nanetti et al. 2003).

What is the effectiveness of the product?

In field studies, carried out according to the guidelines of the EMA (European Medicines Agency), the treatment demonstrated an effectiveness of more than 90%.

How long after application, does the treatment take effect? And how long does it last?

Once applied, the treatment acts quickly, within 24-48 hours and has the fall of most parasites in the phoretic phase. Its killing capacity of varroa does not last for more than ten days, a period in which it manages to kill more than 90% of the varroa population dispersed on adult bees.

Why shouldn't repeated treatments be done?

Single treatments are sufficient to kill most varroa mites from the adult bees, not justifying repeated applications. If multiple treatments are performed in a short period (within 7 days), an overdose condition would occur. There could be a slight increase in daily bee mortality in the days following the treatment. If it is necessary to repeat the treatment, (e.g. reinfestation cases) consider an interval of at least 30 days between one treatment and the other.

In which season of the year can I use Api-Bioxal?

Api-Bioxal can be used throughout the year, the only condition is the absence or reduction of the brood inside the hive in order to get high effectiveness.

Can I use Api-Bioxal in the summer?

Yes, Api-Bioxal can be used in this season, on colonies with absence or reduction of brood. This condition can be obtained thanks to some beekeeping techniques such as the caging of the queen (at least 25 days) or the removal of the brood.

Some advantages of the artificial brood stop are:

- It allows bees to recover energy and strength in view of winter, since after the artificial brood stop there is a clear increase of the total levels of proteins and vitellogenin, which are markers of well-being
- Bees have more time to clean the frames, improving the general health of the colony.

Do I need to warm up Api-Bioxal solution before use?

It is not necessary to warm up the solution before application.

Is Api-Bioxal effective in presence of uncapped brood?

The active ingredient of Api-Bioxal is not able to reach the mite inside the brood cells. It is important to wait until the whole brood is born and wait for the absence of larvae, under which the mite can hide. A particular behaviour of this mite is to hide under the larva waiting for the capping of the brood cell.

What about the tolerance for queens?

No negative effects on the queens have been observed in the field tests carried out with Api-Bioxal.

Can I apply the treatment in cold weather?

Yes, no negative effects were observed in the tests carried out at low temperatures (-4 to 0 ° C), both in the short and long term.

Can I use Api-Bioxal in organic beekeeping?

Yes, according to the European Regulation 2018/848 that refers to organic production.