SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

API-Bioxal 44.2 mg/ml bee-hive solution

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substance:

Oxalic acid	44.2 mg
(as oxalic acid dihydrate	62.0 mg)

Excipients:

For the full list of excipients, see section 6.1

3. PHARMACEUTICAL FORM

Bee-hive solution.
Clear colourless-light yellow liquid.

4. CLINICAL PARTICULARS

4.1 Target species

Honey bees *(Apis mellifera)*

4.2 Indications for use, specifying the target species

Treatment of varroosis caused by *Varroa destructor* in honey bees *(Apis mellifera)*.

4.3 Contraindications

None.

4.4 Special warnings for each target species

For greatest efficacy, the product should only be used when the quantity of brood in the colony is non-existent or at its lowest levels. Oxalic acid does not penetrate wax so will not kill mites within capped brood and therefore the presence of brood may noticeably reduce the efficacy of the product. As such, the product should be used in winter or following manipulation of the colony to produce a broodless state in summer (e.g. by queen caging).
With regard to summer treatments following queen caging, highest levels of efficacy were achieved when a caging period of at least 25 days was used, at which point the

colonies were completely broodless. Despite proper treatment, seriously damaged colonies may not survive due to the effects of varroa infestation.

All colonies in the same apiary should be treated simultaneously to avoid reinfestations.

Integrated Pest Management Programme

The efficacy may vary between colonies due to the conditions of use (residue presence of brood, temperature, reinfestations etc.). The product should therefore be used as a treatment amongst others within an Integrated Pest Management program, and mite drop regularly monitored.

4.5 Special precautions for use

i). Special precautions for use in animals

Administer the treatment without supers. Avoid disturbance to the hives during the days after the treatment.

ii). Special precautions to be taken by the person administering the veterinary medicinal product to animals

This product is a highly acidic solution that may cause severe irritation to the skin and eyes. Avoid contact with the skin, eyes and mucous membranes. When handling the product wear protective clothing, chemical-resistant gloves, and safety glasses. After application, wash hands with soap and water and thoroughly wash any clothing that comes into contact with the product. In case of accidental spillage onto the skin, wash the affected areas immediately with running water. In case of accidental eye contacts, flush the eyes immediately with clear running water for 10 minutes.

Accidental ingestion may cause severe adverse reactions. Children should not come into contact with this veterinary medicinal product. In case of accidental ingestion, clean mouth with water and drink plenty of water or milk. Do not induce vomiting. Seek medical advice immediately.

Do not eat, drink or smoke while handling the product.

Special precautions for the protection of the environment: Not applicable.

iii). Other precautions

None

4.6 Adverse reactions (frequency and seriousness)

Target species: Honey bees (Apis mellifera)

Very common (>1 colony/ 10 colonies treated):	Slight agitation (during treatment) Increased adult bee mortality (after treatment)

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or the national competent authority via the national reporting system. See also the last section of the package leaflet for contact details.

4.7 Use during pregnancy, lactation or lay

Not applicable.

4.8 Interaction with other medicinal products and other forms of interaction

Do not use simultaneously with other acaricides.

4.9 Amount(s) to be administered and administration route

In-hive use, the product must be used as follows:

Posology and method of administration by trickling:

The dosage required is 5 ml per seam (gap between top bars of frames) of bees. Maximal dose is 50 ml per hive. Up to two treatments per year (winter and/or spring-summer season in brood-free colonies).
The treatment should be made in a single administration. The product should be administered using a syringe along the length of each seam of bees.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

Significantly higher bee mortality was observed in hives that received by trickling a triple dosages of product. In addition, when overdosed, the over-wintering capacity of colonies was diminished and there may be detrimental effects on colony development in the future.

4.11 Withdrawal period(s)

Honey: Zero days
Do not use in colonies with supers or during honey flow.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Ectoparasiticides for topical use, Incl. insecticides, organic acids, oxalic acid.

ATC Vet Code: QP53AG03.

5.1 Pharmacodynamic properties

Oxalic acid is an Organic acid. Oxalic acid is highly effective against phoretic varroa mites. Studies on the mode of action of oxalic acid have indicated that its low pH is a major contributor to the acaricidal effect. Oxalic acid has been shown to concentrate

on mite legs and the edges of the exoskeleton, but none was detected in the alimentary system of mites. Therefore, mites are thought to receive the acid by contact.

5.2 Pharmacokinetic particulars

Oxalic acid, the active ingredient of the product, is a natural honey constituent and its concentration in honey depends on the botanical source. No increase of oxalic acid residues over the natural content of honey is to be expected as a consequence of proper product administration. After product treatments, oxalic acid distributes into the intestine and haemolymph of honeybees where its concentration rises temporarily.

When 4.2% oxalic acid (in 60% sucrose syrup) was administered by trickling, peak contamination of worker bees occurred within 4 days post-treatment, declining to 9% and 2% of the maximum value at 7 and 11 days post-treatment, respectively. Oxalic acid was detected in the alimentary system and haemolymph of bees.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Glycerol
Water, purified.

6.2 Major Incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf life after first opening the immediate packaging: 12 months.

6.4 Special precautions for storage

Do not refrigerate or freeze.
Store in the original package.
Keep the container tightly closed in order to protect from moisture.

6.5 Nature and composition of immediate packaging

500 ml bottle: White opaque high-density polyethylene bottles with child – resistant screw cap (HDPE) and tamper-evident seal;

Available in pack sizes of 1 x 500 mL bottle

6.6 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal product should be disposed of in accordance with local requirements.

API-Bioxal should not be allowed to contaminate water courses as this may be dangerous for fish and other aquatic organisms. The product should not be disposed of via wastewater.

7. MARKETING AUTHORISATION HOLDER

Chemicals Laif S.P.A
Viale dell'Artigianato 13
35010 Vigonza (PD)
Italy

8. MARKETING AUTHORISATION NUMBER

Vm 23101/5000

9. DATE OF FIRST AUTHORISATION

12 July 2023

10. DATE OF REVISION OF THE TEXT

July 2023

PROHIBITION OF SALE, SUPPLY AND/OR USE

Not applicable.

11. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product not subject to prescription.

Approved 12 July 2023