

SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Oxuvlar 5.7%, 41.0 mg/ml concentrate for solution for honey bees

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

1 ml of product contains:

Active substance:

Oxalic acid 41.0 mg (equal to 57.4 mg oxalic acid dihydrate)

Excipient:

For the full list of excipients, see section 6.1

3. PHARMACEUTICAL FORM

Concentrate for solution.
Achromatic, clear solution.

4. CLINICAL PARTICULARS

4.1 Target species

Honey bee (*Apis mellifera*)

4.2 Indications for use, specifying the target species

For the treatment of varroosis on honey bees (*Apis mellifera*) due to varroa mites (*Varroa destructor*).

4.3 Contraindications

The oxalic acid dihydrate solution must not be used on colonies with brood since it is not effective on varroa which are inside brood cells.

4.4 Special warnings for each target species

The efficacy may vary between colonies due to the conditions of use (presence of brood, temperature, reinfestations etc.). The product should be used as a treatment within an Integrated Pest Management program with mite drop regularly monitored. The use of different substances for year round treatments is recommended to avoid the risk of resistance.

The **trickling application** must be used in the broodless colony in autumn/winter as a single treatment at outdoor temperatures between 5 °C and –15 °C.

The **spraying application** (autumn/winter or spring/summer) must be used in the broodless colony as a single treatment at outdoor temperatures above 8 °C. A

second spraying treatment after a 2 week interval is only recommended for heavily infested colonies with a remaining infestation of over 6% after the first treatment. The application of high amounts of oxalic acid could lead to higher bee mortality and queen losses; therefore, the exact dosing is necessary.

4.5 Special precautions for use

Special precautions for use in animals:

Avoid disturbance to the hives the days after treatment. If bees are treated more than once per generation, it can result in damage to the bees and a reduction in strength of colony.

The summer treatments of swarms, artificial swarms or man-made broodless colonies must be followed by an autumn or winter treatment against varroa. Do not spray on frames used for honey production in the same season.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:

This product is an acidic solution and could cause severe irritation of the skin, eyes and oral and respiratory mucosa. Avoid all direct contact with the product, including accidental ingestion and inhalation of the spray mist. Personal protective equipment consisting of protective clothing, **chemical resistant gloves** and **safety glasses** should be worn. Additionally, a protective **mask type FFP2** should be worn for the spraying application.

In case of accidental ingestion, clean mouth with water and drink afterwards plenty of water or milk. Do not induce vomiting. In case of skin or eye contact immediately rinse thoroughly with water and remove contact lenses. If skin/eye irritation persists, or if the product has been inhaled or ingested, seek medical advice immediately and show the package leaflet or the label to the physician.

4.6 Adverse reactions (frequency and seriousness)

The colony may become slightly agitated during treatment. The trickling treatment can lead to a slight weakening of colonies in spring. The trickling or spraying treatment can increase bee mortality.

The frequency of adverse reactions is defined using the following convention:

- very common (more than 1 in 10 colonies treated displaying adverse reaction(s))
- common (more than 1 but less than 10 colonies in 100 colonies treated)
- uncommon (more than 1 but less than 10 colonies in 1,000 colonies treated)
- rare (more than 1 but less than 10 colonies in 10,000 colonies treated)
- very rare (less than 1 colony in 10,000 colonies treated, including isolated reports).

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 against varroosis.

4.9 Amounts to be administered and administration route

The product must be used as follows:

A) Trickling application

Preparation of the ready-to-use 3.5% (m/V) oxalic acid dihydrate trickling solution:

Pre-warm the oxalic acid dihydrate solution container in a water bath (30–35 °C). Remove it from the water bath and open the sealed container. Add the required amount of sugar (sucrose) as used for feeding the bees:

- **275 g sugar** when using the 275 g bottle
- **1 kg sugar** when using the 1000 g bottle

Close the container and shake vigorously until the sugar is completely dissolved. The solution is now ready to use and should be applied lukewarm.

Administration:

Fill a syringe (60 ml) or similar device through the wide opening of the container with the needed amount of ready-to-use solution to treat a colony. The dose per comb side is 0.25 ml/dm² for Western/Central Europe and 0.4 ml/dm² for Southern Europe.

Amounts of ready-to-use trickling solution per occupied row		
	Western/Central Europe	Southern Europe
Small frames (DNM, National, Simplex, WBC, Zander)	3–4 ml	5–6 ml
Large frames (Dadant, Swiss Hive)	5–6 ml	8–10 ml
Maximum dose per hive	50 ml	80 ml

For two storey hives, trickle first the lower brood chamber and then the upper brood chamber. The mite drop will continue during 3 weeks.

The ready-to-use trickling solution is enough to treat between 6–15 colonies when using the 275 g bottle or between 20–50 colonies when using the 1000 g bottle. The ready-to-use trickling solution has to be used immediately and cannot be stored after preparation.

B) Spraying application

Preparation of the ready-to-use 3% (m/V) oxalic acid dihydrate spraying solution:

Add tap water to the solution:

- **250 g (250 ml) tap water** when using the 275 g bottle
- **900 g (900 ml) tap water** when using the 1000 g bottle

Close the container and shake. The solution is now ready to use.

Administration:

Fill a hand sprayer or similar device with the needed amount of ready-to-use solution. Spray 2–4 ml of the solution over each side of the comb that are covered by bees. If only half of the frame is covered with bees the dosage must be reduced by 50%. The maximum dose is 80 ml per hive. The total volume required varies with the hive system:

- Broodless colonies, man-made broodless colonies or swarms newly lodged in hives should be treated with a dose of 0.3 ml/dm² of comb fully covered with bees and for the most common hives as follows:

Hive system	Amounts of ready-to-use spraying solution per brood frame side covered with bees

DNM, National, Simplex, WBC, Zander	2–3 ml
Commercial beehive, Langstroth, Swiss hive	2.5–3.5 ml
AZ-hive (SI), Dadant	3–4 ml

- Swarms, artificial swarms in the cluster should be sprayed with 20–25 ml of the ready-to-use spraying solution per kg of bees.

For an accurate dosage spray with your hand sprayer 10 times into a measuring cup and calculate the volume for one pump action. Calculate how many pump actions are required to treat one side of a frame. The combs should be sprayed at a 45° inclination in order to minimize the direct spraying into the cells. The mite drop will continue during 3 weeks.

Treat the swarm, artificial swarm or man-made broodless colony in spring/summer as a single treatment when the majority of bees are inside the hive (in the evening).

The ready-to-use spraying solution is enough to treat between 5–10 colonies when using the 275 g bottle or between 25–40 colonies when using the large 1000 g bottle.

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

In Western/Central Europe, one treatment with a dose up to 4.6% (m/V) oxalic acid dihydrate in late autumn is tolerated well. Marginal bee losses are generally compensated by the colony. A significantly higher dose than recommended (higher than 5% (m/V)) can lead to twice the amount of natural bee loss and to a poor survival of the colony in spring. Repeated treatments within the same season can lead to increased bee mortality a negative effect on brood development and queen loss.

4.11 Withdrawal period(s)

Honey: zero days for correctly treated colonies. Administer the treatment without honey supers mounted.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: ectoparasiticides for topical use. Organic acids: Oxalic acid.

ATCvet code: QP 53 AG 03

5.1 Pharmacodynamic properties

Oxalic acid acts as a contact poison on phoretic *Varroa destructor* mites. The oxalic acid dihydrate solution is spread topically by physical contact between the bees. The mode of action is not fully understood but it is assumed that the low pH-value of the oxalic acid solution plays an important role.

5.2 Pharmacokinetic particulars

There is evidence that oxalic acid can penetrate the exoskeleton of honey bees. After administration of oxalic acid by trickling, contamination of adult bees was detected at 24 hours, reaching a peak one day later. Steep decreases were observed thereafter, reaching one sixtieth of the peak concentration at 11 days post-treatment. The

presence of oxalic acid has been demonstrated in bee haemolymph and the gastrointestinal tract.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Decalcified water

6.2 Major incompatibilities

Do not use simultaneously with other acaricides against varroosis. Contact with calcium-containing solutions can lead to precipitations. Corrosion sensitive materials should be prevented from contact with oxalic acid dihydrate solutions.

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 5 years
Shelf life after first opening of the immediate packaging and reconstitution according to directions:

- Trickling application: once reconstituted with sugar: use immediately.
- Spraying application: once reconstituted with tap water use within one year and within the products expiry date.

Do not use this veterinary medicinal product after the expiry date which is stated on the bottle. The expiry date refers to the last day of that month.

6.4 Special precautions for storage

Store below 30 °C. Do not refrigerate or freeze. Protect from frost. Store in the original container in an upright position. Keep the bottle tightly closed. Protect from direct sunlight. Discard unused material.

6.5 Nature and composition of immediate packaging

Rigid HDPE container closed with an aluminium seal and a PP child-proof cap.

Bottle sizes:

500 ml bottle containing 275 g oxalic acid dihydrate solution.

2000 ml bottle containing 1000 g oxalic acid dihydrate solution.

Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal products 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. The veterinary medicinal product should not enter water courses as this may be dangerous for fish and other aquatic organisms.

7. MARKETING AUTHORISATION HOLDER

Andermatt BioVet GmbH
Franz-Ehret-Str. 18
79541 Lörrach
Germany

8. MARKETING AUTHORISATION NUMBER

Vm 36234/4001

9. DATE OF FIRST AUTHORISATION

28 October 2016

10. DATE OF REVISION OF THE TEXT

July 2021

Approved 21 July 2021

A handwritten signature in black ink, appearing to read "Hunter.", is positioned below the approval date. The signature is stylized and cursive.