

SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Alverin 18.7 mg/g Oral Paste for Horses

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each g contains:

Active substance:

Ivermectin: 18.7 mg

Excipients:

| Qualitative composition of excipients and other constituents |
|--|
| Maize Oil |
| Polysorbate 80 |
| Apple Flavour |
| Silica Colloidal Anhydrous |

A yellow, gel-like oral paste of uniform consistency.

3. CLINICAL INFORMATION

3.1 Target species

Horses

3.2 Indications for use for each target species

Treatment of parasitic nematode or arthropod infestations in horses due to:

Large strongyles

Strongylus vulgaris (adults and arterial larval stages)

S. edentatus (adults and tissue larval stages)

S. equinus (adults)

Triodontophorus spp. (adults)

Triodontophorus brevicauda

Triodontophorus serratus

Craterostomum acuticaudatum (adults)

Small Strongyles

Adults and immature (fourth stage larvae) small strongyles or cyathostomes including benzimidazole-resistant strains:

Coronocylus spp.

Coronocylus coronatus

Coronocylus labiatus

Coronocylus labratus

Cyathostomum spp.

Cyathostomum catinatum

Cyathostomum pateratum

Cylicocylus spp.

Cylicocyclus ashworthi
Cylicocyclus elongatus
Cylicocyclus insigne
Cylicocyclus leptostomum
Cylicocyclus nassatus
Cylicocyclus radiatus
Cylicostephanus spp.
Cylicostephanus asymmetricus
Cylicostephanus bidentatus
Cylicostephanus calicatus
Cylicostephanus goldi
Cylicostephanus longibursatus
Cylicostephanus minutus
Cylicodontophorus spp.
Cylicodontophorus bicornatus
Gyalocephalus capitatus
Parapoteriostomum spp.
Parapoteriostomum euproctus
Parapoteriostomum mettami
Petrovinema spp.
Petrovinema poculatum
Poteriostomum spp.
Poteriostomum imparidentatum

Lungworms (adult and immatures)

Dictyocaulus arnfieldi

Pinworms (adult and immatures)

Oxyuris equi

Ascarids (adults and third & fourth stage larvae)

Parascaris equorum (see section 3.4)

Hairworms (adults)

Trichostrongylus axei

Large-mouth stomach worms (adults)

Habronema muscae

Neck threadworms (microfilariae)

Onchocerca spp.

Intestinal threadworms (adults)

Strongyloides westeri

Stomach bots (oral and gastric stages)

Oral and gastric stages of *Gasterophilus* spp.

3.3 Contraindications

Not for use in species other than the target species as severe adverse reactions, including fatalities in dogs may occur.

Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

3.4 Special warnings

Care should be taken to avoid the following practices because they increase the risk of development of resistance and could ultimately result in ineffective therapy:

- Too frequent and repeated use of anthelmintics from the same class, over an extended period of time.
- Underdosing, which may be due to underestimation of body weight, misadministration of the product, or lack of calibration of the dosing device.

Suspected clinical cases of resistance to anthelmintics should be further investigated using appropriate tests (e.g. Faecal Egg Count Reduction Test). Where the results of the test (s) strongly suggest resistance to a particular anthelmintic, an anthelmintic belonging to another pharmacological class and having a different mode of action should be used.

Resistance to macrocyclic lactones (which includes ivermectin) has been reported in *Parascaris equorum* in horses in a number of countries within the EU. Therefore, the use of this product should be based on local (regional, farm) epidemiological information about susceptibility of gastro-intestinal nematodes and recommendations on how to limit further selection for resistance to anthelmintics.

Ivermectin is not effective against the encysted larval stages of the small strongyles.

Veterinary advice should be given on appropriate dosing programs and stock management to achieve adequate parasite control and reduce the likelihood of anthelmintic resistance developing. In the event that a product is suspected of being ineffective, the animal owner is advised to seek veterinary advice.

3.5 Special precautions for use

Special precautions for safe use in the target species:

Since ivermectin is highly bound to plasma proteins, special care should be taken in cases of sick animals or in nutritional conditions associated with low plasma protein levels.

The product has been formulated specifically for use in horses only. Dogs and cats (especially Collies, Old English Sheep dogs and related breeds or crosses) and also turtles and tortoises may be adversely affected by the concentration of ivermectin in this product if they are allowed to ingest spilled paste or have access to used syringes.

Parasite resistance to any particular class of anthelmintic may develop following frequent, repeated use of an anthelmintic of that class.

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

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

Wash hands after use.

This product may cause skin and eye irritation. Therefore, the user should avoid contact of the product with the skin and the eyes. In the case of contact, rinse immediately with plenty of water.

In the case of accidental ingestion or eye irritation after contact seek medical advice immediately and show the package leaflet or the label to the physician.

Special precautions for the protection of the environment:

Long term effects on dung insects caused by continuous or repeated use cannot be excluded. Therefore repeat treatments on a pasture within a season should only be given on the advice of a veterinarian.

3.6 Adverse events

Horses:

| | |
|--|--|
| Very rare (<1 animal / 10,000 animals treated, including isolated reports): | oedema (not otherwise specified) ¹ and pruritus ¹ abdominal pain colic loose stool oral oedema |
|--|--|

¹In some horses carrying heavy infection of *Onchocerca microfilariae*; such reactions are assumed to be the result of death of large numbers of microfilariae. These signs resolve within a few days but symptomatic treatment may be advisable.

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 respective contact details.

3.7 Use during pregnancy, lactation or lay

Can be used in pregnant mares and in breeding stallions.

3.8 Interaction with other medicinal products and other forms of interaction

Ivermectin increases the effects of GABA agonists.

3.9 Administration routes and dosage

Oral use.

Administer orally at the recommended dose level of 0.2 mg ivermectin per kilogram of bodyweight. Each syringe delivers 120 mg ivermectin, sufficient to treat 600 kg of bodyweight.

To ensure administration of a correct dose, body weight should be determined as accurately as possible.

If animals are to be treated collectively rather than individually, they should be grouped according to their bodyweight and dosed accordingly, in order to avoid under or overdosing.

Dosing instructions:

Each weight marking on the syringe plunger will deliver sufficient paste to treat 100 kg bodyweight. Unlock the knurled ring by making 1/4 turn and slide the knurled ring up the plunger shaft so that the side nearest the barrel is at the prescribed weight marking. Turn the knurled ring 1/4 turn to lock in place. Remove the plastic cap from the tip of the nozzle. Make sure the horse's mouth contains no feed. Insert the syringe into the horse's mouth at the interdental space. Advance the plunger as far as it will go, depositing the medication on the base of the tongue.

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

Mild transitory signs (slowed pupillary light response and depression) have been seen at a dose of 1.8 mg/kg (9 times the recommended dose level). Other signs seen at higher doses include mydriasis, ataxia, tremors, stupor, coma and death. The less severe signs have been transitory. No antidote has been identified; however, symptomatic therapy may be beneficial.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Meat and offal: 21 days.

Not authorised for use in animals producing milk for human consumption.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QP54AA01

4.2 Pharmacodynamics

Ivermectin is a member of the macrocyclic lactone class of endectocides which have a unique mode of action. Compounds of the class bind selectively and with high affinity to glutamate-gated chloride ion channels which occur in invertebrate nerve and muscle cells. This leads to an increase in the permeability of the cell membrane to chloride ions with hyperpolarization of the nerve or muscle cell, resulting in paralysis and death of the parasite. Compounds of this class may also interact with other ligand-gated chloride channels, such as those gated by the neurotransmitter gamma-aminobutyric acid (GABA).

The margin of safety for compounds of this class is attributable to the fact that mammals do not have glutamate-gated chloride channels, the macrocyclic lactones have a low affinity for other mammalian ligand-gated chloride channels and they do not readily cross the blood-brain barrier.

4.3 Pharmacokinetics

Maximum plasma concentration

In the horse the maximum plasma concentration (average of 32 ng/ml) is reached 6 hours after administration of a dose rate of 0.3 mg ivermectin per kg bodyweight. This peak falls off gradually to an average level of 2 ng/ml at 10 days.

Excretion: length of time and route

Ivermectin residues (expressed as dihydro B1a) in the liver, muscle, kidney, fat and blood were determined with a liquid chromatographic method with fluorescence detection. No residue (except one 28 day fat sample) reached the limit of detection of > 2 ppb 21, 28 and 42 days post dose.

Environmental properties

Extremely dangerous to fish and aquatic life.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

Not applicable.

5.2 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years.

This is a single use product. The cap should be replaced after use and remaining product should be discarded.

5.3 Special precautions for storage

This veterinary medicinal product does not require any special storage conditions.

5.4 Nature and composition of immediate packaging

Dose graduated disposable polyethylene oral syringe containing 6.42 g. The cartons contain one or twenty syringes.

Not all pack sizes may be marketed.

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

Medicines should not be disposed of via wastewater or household waste. Do not contaminate ponds, waterways or ditches with the product or used container.

The veterinary medicinal product should not enter water courses as ivermectin may be dangerous for fish and other aquatic organisms.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

To be completed nationally.

7. MARKETING AUTHORISATION NUMBER(S)

To be completed nationally.

8. DATE OF FIRST AUTHORISATION

To be completed nationally.

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

To be completed nationally.

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the Union Product Database.

LABELLING AND PACKAGE LEAFLET

A. LABELLING

PARTICULARS TO APPEAR ON THE OUTER PACKAGE

Carton of 1 or 20 syringes

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Alverin 18.7 mg/g Oral Paste.

2. STATEMENT OF ACTIVE SUBSTANCES

Ivermectin: 18.7 mg/g

3. PACKAGE SIZE

1 x 6.42 g syringe
20 x 6.42 g syringes

4. TARGET SPECIES

Horses

5. INDICATIONS

6. ROUTES OF ADMINISTRATION

Oral use.
The recommended dose is 0.2 mg ivermectin per kilogram of bodyweight.

7. WITHDRAWAL PERIODS

Withdrawal period:
Meat and offal: 21 days.

Not authorised for use in animals producing milk for human consumption.

8. EXPIRY DATE

Exp. {mm/yyyy}

This is a single use product. Replace cap and discard contents after use.

9. SPECIAL STORAGE PRECAUTIONS

10. THE WORDS “READ THE PACKAGE LEAFLET BEFORE USE”

Read the package leaflet before use.

11. THE WORDS “FOR ANIMAL TREATMENT ONLY”

For animal treatment only.

12. THE WORDS “KEEP OUT OF THE SIGHT AND REACH OF CHILDREN”

Keep out of the sight and reach of children.

13. NAME OF THE MARKETING AUTHORISATION HOLDER

To be completed nationally.

14. MARKETING AUTHORISATION NUMBERS

To be completed nationally.

15. BATCH NUMBER

Lot {number}

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

Syringe Label

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Alverin Oral Paste for Horses

2. QUANTITATIVE PARTICULARS OF THE ACTIVE SUBSTANCES

Ivermectin 18.7 mg/g

3. BATCH NUMBER

Lot {number}

4. EXPIRY DATE

Exp. {mm/yyyy}

This is a single use product. Replace cap and discard contents after use.

B. PACKAGE LEAFLET

PACKAGE LEAFLET

1. Name of the veterinary medicinal product

Alverin 18.7 mg/g Oral Paste for Horses

2. Composition

Each g contains:

Active substance:

Ivermectin: 18.7 mg

A yellow, gel-like oral paste of uniform consistency.

3. Target species

Horses.

4. Indications for use

Treatment of parasitic nematode or arthropod infestations in horses due to:

Large strongyles

Strongylus vulgaris (adults and arterial larval stages)

S. edentatus (adults & tissue larval stages)

S. equinus (adults)

Triodontophorus spp. (adults)

Triodontophorus brevicauda

Triodontophorus serratus

Craterostomum acuticaudatum (adults)

Small Strongyles

Adult and immature (fourth stage larvae) small strongyles or cyathostomes, including benzimidazole-resistant strains:

Coronocylus spp.

Coronocylus coronatus

Coronocylus labiatus

Coronocylus labratus

Cyathostomum spp.

Cyathostomum catinatum

Cyathostomum pateratum

Cylicocylus spp.

Cylicocylus ashworthi

Cylicocylus elongatus

Cylicocylus insigne

Cylicocylus leptostomum

Cylicocylus nassatus

Cylicocylus radiatus

Cylicostephanus spp.

Cylicostephanus asymmetricus

Cylicostephanus bidentatus

Cylicostephanus calicatus

Cylicostephanus goldi
Cylicostephanus longibursatus
Cylicostephanus minutus
Cylicodontophorus spp.
Cylicodontophorus bicornatus
Gyalocephalus capitatus
Parapoteriostomum spp.
Parapoteriostomum euproctus
Parapoteriostomum mettami
Petrovinema spp.
Petrovinema poculatum
Poteriostomum spp.
Poteriostomum imparidentatum

Lungworms (adult and immatures)

Dictyocaulus arnfieldi

Pinworms (adult and immatures)

Oxyuris equi

Ascarids (adults and third & fourth stage larvae)

Parascaris equorum (see section 6)

Hairworms (adults)

Trichostrongylus axei

Large-mouth stomach worms (adults)

Habronema muscae

Neck threadworms (microfilariae)

Onchocerca spp.

Intestinal threadworms (adults)

Strongyloides westeri

Stomach bots

Oral and gastric stages of *Gastrophilus* spp.

5. Contraindications

Not for use in species other than the target species as severe adverse reactions, including fatalities in dogs may occur.

Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

6. Special warnings

Special warnings:

Care should be taken to avoid the following practices because they increase the risk of development of resistance and could ultimately result in ineffective therapy:

- Too frequent and repeated use of anthelmintics from the same class, over an extended period of time.
- Underdosing, which may be due to underestimation of body weight, misadministration of the product, or lack of calibration of the dosing device.

Suspected clinical cases of resistance to anthelmintics should be further investigated using appropriate tests (e.g. Faecal Egg Count Reduction Test). Where the results of the test (s) strongly suggest resistance to a particular anthelmintic, an anthelmintic belonging to another pharmacological class and having a different mode of action should be used.

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Ivermectin is not effective against the encysted larval stages of the small strongyles.

Veterinary advice should be given on appropriate dosing programs and stock management to achieve adequate parasite control and reduce the likelihood of anthelmintic resistance developing. In the event that a product is suspected of being ineffective, the animal owner is advised to seek veterinary advice.

Special precautions for safe use in the target species:

Since ivermectin is highly bound to plasma proteins, special care should be taken in cases of sick animals or in nutritional conditions associated with low plasma protein levels.

The product has been formulated specifically for use in horses only. Dogs and cats (especially Collies, Old English Sheep dogs and related breeds or crosses) and also turtles and tortoises may be adversely affected by the concentration of ivermectin in this product if they are allowed to ingest spilled paste or have access to used syringes.

Parasite resistance to any particular class of anthelmintic may develop following frequent, repeated use of an anthelmintic of that class.

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

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

Wash hands after use.

This product may cause skin and eye irritation. Therefore, the user should avoid contact of the product with the skin and the eyes. In the case of contact, rinse immediately with plenty of water.

In the case of accidental ingestion or eye irritation after contact seek medical advice immediately and show the package insert or the label to the physician

Special precautions for the protection of the environment:

Long term effects on dung insects caused by continuous or repeated use cannot be excluded. Therefore repeat treatments on a pasture within a season should only be given on the advice of a veterinarian.

Pregnancy and lactation:

Can be used in pregnant mares and in breeding stallions.

Interaction with other medicinal products and other forms of interaction:

Ivermectin increases the effects of GABA agonists.

Overdose:

Mild transitory signs (slowed pupillary light response and depression) have been seen at a dose of 1.8 mg/kg (9 times the recommended dose level). Other signs seen at higher doses include mydriasis, ataxia, tremors, stupor, coma and death. The less severe signs have been transitory. No antidote has been identified; however, symptomatic therapy may be beneficial.

Major incompatibilities:

Not applicable.

7. Adverse events

Horses:

| |
|---|
| Very rare (<1 animal / 10,000 animals treated, including isolated reports): |
| oedema (not otherwise specified) ¹ and pruritus ¹ , abdominal pain, colic, loose stool, oral oedema |

¹ In some horses carrying heavy infection of *Onchocerca microfilariae*; such reactions are assumed to be the result of death of large numbers of microfilariae. These signs resolve within a few days but symptomatic treatment may be advisable.

Reporting adverse events is important. It allows continuous safety monitoring of a product. If you notice any side effects, even those not already listed in this package leaflet, or you think that the medicine has not worked, please contact, in the first instance, your veterinarian. You can also report any adverse events to the marketing authorisation holder using the contact details at the end of this leaflet, or via your national reporting system.

8. Dosage for each species, routes and method of administration

Oral use

Administer orally at the recommended dose level of 0.2 mg ivermectin per kilogram of bodyweight. Each syringe delivers 120 mg ivermectin, sufficient to treat 600 kg of bodyweight.

Dosing instructions:

Each weight marking on the syringe plunger will deliver sufficient paste to treat 100 kg bodyweight. Unlock the knurled ring by making 1/4 turn and slide the knurled ring up the plunger shaft so that the side nearest the barrel is at the prescribed weight marking. Turn the knurled ring 1/4 turn to lock in place. Remove the plastic cap from the tip of the nozzle. Make sure the horse's mouth contains no feed. Insert the syringe into the horse's mouth at the interdental space. Advance the plunger as far as it will go, depositing the medication on the base of the tongue.

9. Advice on correct administration

To ensure administration of a correct dose, body weight should be determined as accurately as possible.

If animals are to be treated collectively rather than individually, they should be grouped according to their bodyweight and dosed accordingly, in order to avoid under- or overdosing.

10. Withdrawal periods

Meat and offal: 21 days.

Not authorised for use in animals producing milk for human consumption.

11. Special storage precautions

Keep out of the sight and reach of children.

This veterinary medicinal product does not require any special storage conditions.

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

12. Special precautions for disposal

Medicines should not be disposed of via wastewater or household waste. Do not contaminate ponds, waterways or ditches with the product or used container.

This veterinary medicinal product should not enter water courses as ivermectin may be dangerous for fish and other aquatic organisms.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and any national collection systems applicable to the veterinary medicinal product concerned. These measures should help to protect the environment. Ask your veterinary surgeon how to dispose of medicines no longer required.

13. Classification of veterinary medicinal products

Veterinary medicinal product subject to prescription.

14. Marketing authorisation numbers and pack sizes

Dose graduated disposable polyethylene oral syringe containing 6.42 g. The cartons contain one or twenty syringes.

Not all pack sizes may be marketed.

15. Date on which the package leaflet was last revised

To be completed nationally.

Detailed information on this veterinary medicinal product is available in the Union Product Database.

16. Contact details

Marketing authorisation holder and contact details to report suspected adverse reactions:

To be completed nationally.

Manufacturer responsible for batch release:

To be completed nationally.

17. Other information

Environmental properties

Extremely dangerous to fish and aquatic life.

(restrictions or conditions regarding supply and use: dependent on territory)