

**Equest & Equest Pramox Oral Gel for Horses Annual Wormer Pack**

	Revised	AN
Equest Oral Gel	March 2019	00628/2018
Equest Pramox Oral Gel	April 2019	00673/2018

## **SUMMARY OF PRODUCT CHARACTERISTICS**

### **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Equest Oral Gel, 18.92 mg/g, oral gel for horses and ponies

(Sweden: Cydectin Vet)

### **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each g contains:

#### **Active substance:**

Moxidectin 18.92 mg

#### **Excipients qsp:**

Benzyl Alcohol (E1519) 37.84 mg

Disodium Edetate 0.24 mg

For a full list of excipients, see section 6.1.

### **3. PHARMACEUTICAL FORM**

Oral Gel.

Yellow Gel.

### **4. CLINICAL PARTICULARS**

#### **4.1 Target species**

Horses and ponies.

#### **4.2 Indications for use, specifying the target species**

The veterinary medicinal product is indicated for treatment of infections caused by moxidectin sensitive strains of:

– Large strongyles:

- . *Strongylus vulgaris* (adults and arterial stages)
- . *Strongylus edentatus* (adults and visceral stages)
- . *Triodontophorus brevicauda* (adults)
- . *Triodontophorus serratus* (adults)
- . *Triodontophorus tenuicollis* (adults)

– Small strongyles (adults and intraluminal larval stages):

- . *Cyathostomum* spp.
- . *Cylicocyclus* spp.
- . *Cylicostephanus* spp.
- . *Cylicodontophorus* spp.

. *Gyalocephalus* spp.

– Ascarids:

. *Parascaris equorum* (adult and larval stages)

– Other species:

. *Oxyuris equi* (adult and larval stages)

. *Habronema muscae* (adults)

. *Gasterophilus intestinalis* (L2, L3)

. *Gasterophilus nasalis* (L2, L3)

. *Strongyloides westeri* (adults)

. *Trichostrongylus axei*

The veterinary medicinal product has a persistent efficacy of two weeks against small strongyles. The excretion of small strongyles eggs is suppressed for 90 days.

The veterinary medicinal product is effective against (developing) intramucosal L4 stages of small strongyles. At 8 weeks after treatment, early (hypobiotic) EL3 stages of small strongyles are eliminated.

#### **4.3 Contraindications**

Do not administer to young foals less than 4 months.

Do not administer in case of known hypersensitivity to the active ingredient or to any other milbemycins and to any other ingredients of the veterinary medicinal product.

#### **4.4 Special warnings for each target species**

None.

#### **4.5 Special precautions for use**

##### Special precautions for use in animals

To avoid overdosing, care should be taken to accurately dose foals, especially low body weight foals or pony foals.

Do not use the same syringe to treat more than one animal unless horses are running together or in direct contact with each other in the same premises. Equest has been formulated specifically for use in horses only. Dogs or cats may be adversely affected by the concentration of moxidectin in this veterinary medicinal product if they are allowed to ingest spilled paste or have access to used syringes. Neurological signs (such as ataxia, muscle tremor and convulsions) and digestive clinical signs (such as hypersalivation) were recorded.

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

Avoid direct contact with skin and eyes.

The use of protective gloves is recommended.

Wash hands or any exposed area after use.

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

In the event of eye contact, flush the eye with copious amounts of clean water and seek medical advice.

## Other precautions regarding impact on the environment

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance; therefore, exposure of the environment to moxidectin must be limited to the extent possible. Treatments should be administered only when necessary and should be based on faecal egg counts or evaluation of the risk of infestation at the animal and/or herd level. In order to reduce the emission of moxidectin to surface water and based on the excretion profile of moxidectin when administered as the oral formulation to horses, treated animals should not have access to watercourses during the first week after treatment.

Like other macrocyclic lactones, moxidectin has the potential to adversely affect non-target organisms:

- Faeces containing moxidectin excreted onto pasture by treated animals may temporarily reduce the abundance of dung feeding organisms. Following treatment of horses with the product, levels of moxidectin that are potentially toxic to dung beetles and flies may be excreted over a period of more than 1 week and may decrease dung fauna abundance.
- Moxidectin is inherently toxic to aquatic organisms including fish. The product should be used only according to the label instructions.

### **4.6 Adverse reactions (frequency and seriousness)**

Ataxia, depression, abdominal pain, muscle tremor, flaccid lower lip and swelling of the muzzle could be observed on very rare occasions in young animals. These adverse effects are usually transient and disappear spontaneously in most cases.

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

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

### **4.7 Use during pregnancy, lactation or lay**

The veterinary medicinal product has been shown to be safe for use in pregnant and lactating mares.

### **4.8 Interaction with other medicinal products and other forms of interaction**

None known.

### **4.9 Amounts to be administered and administration route**

A single oral dose of 400 µg moxidectin/kg bodyweight using the calibrated syringe. Before the first dose, hold the syringe with the capped end pointing to the left and so that you can see the weight measurements and tick marks (small black lines). Set the syringe to zero by moving the dial ring so the left side is set at the first full black mark and depress the plunger, safely discarding any paste that is expelled.

To dose the product, hold the syringe as previously described. Each tick mark relates to 25 kg of body weight and to 10mg moxidectin. Turn the dial ring until the left side of the ring lines up with the weight of the animal.

Use of a scale or weight tape is recommended to ensure accurate dosing.

A single syringe treats a 700 kg horse.

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

Adverse reactions may occur at 2 times the recommended dose in foals and 3 times the recommended dose in adults. The symptoms are depression, inappetance, ataxia and flaccid lower lip in the 8 to 24 hours following treatment. Symptoms of moxidectin overdose are the same as those observed in very rare occasions at the recommended dosage. In addition, hypothermia and lack of appetite may occur. There is no specific antidote.

#### **4.11 Withdrawal period(s)**

Meat and offal: 32 days

### **5. PHARMACOLOGICAL PROPERTIES**

Pharmacotherapeutic group: Endectocides (milbemycins)

ATCvet code: QP54AB02

#### **5.1 Pharmacodynamic properties**

Moxidectin is a parasiticide active against a wide range of internal and external parasites and is a second generation macrocyclic lactone of the milbemycin family. Moxidectin interacts with GABA and glutamate gated chloride channels. The net effect is to open the chloride channels on the postsynaptic junction to allow the inflow of chloride ions and induce an irreversible resting state. This results in flaccid paralysis and eventual death of parasites exposed to the drug.

The veterinary medicinal product is effective against benzimidazole resistant strains of cyathostomes.

#### **5.2 Pharmacokinetic properties**

Moxidectin is absorbed following oral administration with maximum blood concentrations being achieved 8 hours post application.

Bioavailability by the oral route is 40%. The drug is distributed throughout the body tissues but due to its lipophilicity it is selectively concentrated in the fat.

The elimination half life is 28 days.

Moxidectin undergoes partial biotransformation by hydroxylation in the body and the only significant route of excretion is the faeces.

#### **5.3 Environmental properties**

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance. In particular, in acute and chronic toxicity studies with algae, crustaceans and fish, moxidectin showed toxicity to these organisms, yielding the following endpoints:

Organism		EC50	NOEC
Algae	<i>S. capricornutum</i>	>86.9 µg/l	86.9 µg/l
Crustaceans (Water fleas)	<i>Daphnia magna</i> (acute)	0.0302 µg/l	0.011 µg/l
	<i>Daphnia magna</i> (reproduction)	0.0031 µg/l	0.010 µg/l
Fish	<i>O. mykiss</i>	0.160 µg/l	Not determined
	<i>L. macrochirus</i>	0.620 µg/l	0.52 µg/l
	<i>P. promelas</i> (early life stages)	Not applicable	0.0032 µg/l
	<i>Cyprinus carpio</i>	0.11 µg/l	Not determined

EC<sub>50</sub>: the concentration which results in 50% of the test species individuals being adversely affected, i.e. both mortality and sub-lethal effects.

NOEC: the concentration in the study at which no effects are observed.

This implies that when allowing moxidectin to enter water bodies, this may have a severe and lasting impact on aquatic life. To mitigate this risk, all precautions for use and disposal must be adhered to.

## 6. PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Benzyl alcohol (E1519)  
 Disodium edentate  
 Poloxamer 407  
 Simethicone  
 Sodium phosphate dibasic  
 Sodium dihydrogen phosphate  
 Propylene glycol  
 Polysorbate 80  
 Water.

### 6.2 Major incompatibilities

None known.

### 6.3 Shelf life

Shelf-life of the veterinary medicinal product as packaged for sale: 2 years  
 Shelf-life after first opening the immediate packaging: 6 months.

### 6.4 Special precautions for storage

Store below 25 °C

### 6.5 Nature and content of immediate packaging

High density polyethylene syringe containing 14,8 g of gel with a graduated plunger with a low density polyethylene piston and cap packed as follows:

- Box containing one syringe.
- Box containing 10 individually boxed syringes.
- Box containing 20 syringes.

Not all pack sizes may be marketed.

#### **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 material derived from such veterinary medicinal products should be disposed of in accordance with local requirements. Do not contaminate watercourses with the product. The product is toxic for fish and aquatic organisms.

### **7. MARKETING AUTHORISATION HOLDER**

Zoetis UK Limited  
5th Floor, 6 St. Andrew Street  
London  
EC4A 3AE

### **8. MARKETING AUTHORISATION NUMBER**

Vm 42058/4057

### **9. DATE OF FIRST AUTHORISATION**

15 January 1999

### **10. DATE OF REVISION OF THE TEXT**

March 2019

Approved : 05 March 2019



### **SUMMARY OF PRODUCT CHARACTERISTICS**

#### **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Equest Pramox 19.5 mg/g + 121.7 mg/g oral gel

Names used:

EQUEST PRAMOX ORAL GEL in all the countries except  
Germany: EQUEST PRAMOX 19.5 mg/g + 121.7 mg/g Gel zum eingeben

Spain: EQUEST PRA-MOX  
Portugal and Poland: EQUEST PRAMOX 19.5 mg/g + 121.7 mg/g oral gel  
Denmark: Equest Pramox  
Sweden: Cydectin Comp Vet.

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each g contains:

### Active substances

Moxidectin	19.5 mg
Praziquantel	121.7 mg

### Excipients

Benzyl alcohol (E1519)	220.0 mg
Butylhydroxytoluene (E321)	0.8 mg

For a full list of excipients, see section 6.1

## 3. PHARMACEUTICAL FORM

Oral Gel.  
Pale yellow to orange/pink oral gel.

## 4. CLINICAL PARTICULARS

### 4.1 Target species

Horses.

### 4.2 Indications for Use, specifying the target species

In horses:

For the treatment of mixed cestodes and nematodes or arthropods infections, caused by moxidectin and praziquantel sensitive strains of:

- Large strongyles:
  - . *Strongylus vulgaris* (adult stages)
  - . *Strongylus edentatus* (adult stages)
  - . *Triodontophorus brevicauda* (adults)
  - . *Triodontophorus serratus* (adults)
  - . *Triodontophorus tenuicollis* (adults)
  
- Small strongyles (adults and intraluminal larval stages):
  - . *Cyathostomum* spp
  - . *Cylicocyclus* spp
  - . *Cylicostephanus* spp
  - . *Cylicodontophorus* spp
  - . *Gyalocephalus* spp
  
- Ascarids:
  - . *Parascaris equorum* (adults)
  
- Other species:
  - . *Oxyuris equi* (adult stages)
  - . *Habronema muscae* (adults)
  - . *Gasterophilus intestinalis* (L2, L3)
  - . *Gasterophilus nasalis* (L2, L3)
  - . *Strongyloides westeri* (adults)
  - . *Trichostrongylus axei* (adult stages)
  
- Tapeworm (adults):

- . *Anoplocephala perfoliata*
- . *Anoplocephala magna*
- . *Paranoplocephala mammillana*

The egg reappearance period of small strongyles is 90 days.

The product is effective against (developing) intramucosal L4 stages of small strongyles. At 8 weeks after treatment, early (hypobiotic) EL3 stages of small strongyles are eliminated.

#### 4.3 Contraindications

Do not administer to young foals less than 6.5 months old

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

**The product has been formulated specifically for use in horses only. Dogs and cats may be adversely affected by the concentration of moxidectin in this product if they are allowed to ingest spilled gel or have access to used syringes.**

#### 4.4 Special warnings for each target species

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;
- Under-dosing which may be due to underestimation of body weight, misadministration of the product, or lack of calibration of the dosing device (if any).
- 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.

For optimum control of bots, the product should be administered in the autumn, after the end of the fly season and before spring as the larvae may start to pupate and therefore are less sensitive to treatment.

**Parasite resistance to a particular class of anthelmintic may develop following frequent, repeated use of an anthelmintic of that class. The veterinarian should give advice regarding appropriate dosing programmes and stock management to achieve adequate parasite control for both tapeworm and roundworm infestations.**

#### 4.5 Special Precautions for Use

##### Special precautions for use in animals

To avoid overdosing, care should be taken to accurately dose foals, especially low body weight foals or pony foals.

**Do not use the same syringe to treat more than one animal unless horses are running together or in direct contact with each other in the same premises.**

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

This product may cause eye irritation, skin irritation and skin sensitisation.

**Avoid contact with skin and eyes.**

**Use protective gloves.**

**Wash hands or any exposed area after use.**

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

**In the event of eye contact flush the eye with copious amount of clean water and seek medical advice.**

**In case of accidental ingestion, seek medical help and show the doctor the package insert.**

### **Other precautions**

In order to limit the impact of moxidectin on dung fauna, and due to insufficient data regarding environmental risk of praziquantel, horses should not be turned out onto pasture within 3 days of treatment.

### **Other precautions regarding impact on the environment**

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance; therefore, exposure of the environment to moxidectin must be limited to the extent possible. Treatments should be administered only when necessary and should be based on faecal egg counts or evaluation of the risk of infestation at the animal and/or herd level. In order to reduce the emission of moxidectin to surface water and based on the excretion profile of moxidectin when administered as the oral formulation to horses, treated animals should not have access to watercourses during the first week after treatment.

Like other macrocyclic lactones, moxidectin has the potential to adversely affect non-target organisms:

- Faeces containing moxidectin excreted onto pasture by treated animals may temporarily reduce the abundance of dung feeding organisms. Following treatment of horses with the product, levels of moxidectin that are potentially toxic to dung beetles and flies may be excreted over a period of more than 1 week and may decrease dung fauna abundance.
- Moxidectin is inherently toxic to aquatic organisms including fish. The product should be used only according to the label instructions.

### **4.6 Adverse reactions**

Mouth pain, flaccid lower lip, swelling of the muzzle, hypersalivation and anorexia have been observed in rare cases. Ataxia has been reported on rare occasions and lethargy in very rare cases. These adverse effects are transient and disappear spontaneously

In case of very high worm burdens, destruction of the parasites may cause a mild transient colic and loose faeces in the treated horse.

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

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

### **4.7 Use during pregnancy, lactation or lay**

The veterinary medicinal product has been shown to be safe for use in breeding, pregnant and lactating mares. The administration of the product does not adversely affect the fertility of the mares.

### **4.8 Interaction with other medicinal products and other forms of interaction**

The effects of GABA agonists are increased by moxidectin.

#### **4.9 Amount to be administered and administration route**

A single oral dose of 400 µg moxidectin/kg bodyweight and 2.5 mg praziquantel/kg bodyweight using the calibrated syringe of one gradation per 25 kg live weight.

To ensure administration of a correct dosage, body weight should be determined as accurately as possible; accuracy of the dosing should be checked.

Use of a scale or weight tape is recommended to ensure accurate dosing.

Before the first dose, hold the syringe with the capped end pointing to the left and so that you can see the weight measurements and tick marks (small black lines). Set the syringe to zero by moving the dial ring so the left side is set at the first full black mark and depress the plunger, safely discarding any paste that is expelled.

To dose the product, hold the syringe as previously described. Each tick mark relates to 25 kg of body weight and to 10mg moxidectin/62.5 mg praziquantel. Turn the dial ring until the left side of the ring lines up with the weight of the animal.

A single syringe treats a 700 kg horse.

In the case of cestode treatment the dose of praziquantel in the product has been selected to the top end of the dosing range.

Veterinary advice should be given on appropriate dosing programmes and stock management to achieve optimum parasite control.

#### **4.10 Overdose (symptoms, emergency procedure, antidotes if necessary)**

Transient adverse reactions may occur at the recommended treatment dose in foals. In adults transient adverse reactions may occur at 3 times the recommended dose. The symptoms are depression, inappetence, ataxia, flaccid lower lip in the 8 to 24 hours following treatment.

Symptomatic treatment is not generally necessary and recovery is generally complete within 24 to 72 hours. There is no specific antidote.

#### **4.11 Withdrawal period**

Meat and offal: 64 days.

Milk: not permitted for use in lactating mares producing milk for human consumption.

### **5. PHARMACOLOGICAL PROPERTIES**

Therapeutic group: antiparasitic product, endectocide

**ATCVet code** : QP 54 AB 52, moxidectin combination

#### **5.1 Pharmacodynamic properties**

Moxidectin is a parasiticide active against a wide range of internal and external parasites and is a second generation macrocyclic lactone of the milbemycin family. Moxidectin interacts with GABA receptors and chloride channels. The net effect is to open the chloride channels on the postsynaptic junction to allow the inflow of chloride ions and induce an irreversible resting state. This results in flaccid paralysis and eventual death of parasites exposed to the drug.

Praziquantel is a parasiticide widely used in many species as an anthelmintic.

Praziquantel is quickly absorbed via the tegument of the parasite and distributed. *In vitro* and *in vivo* important lesions of the tegument of the parasite are seen that provoke contraction and paralysis of the parasite. Praziquantel modifies the permeability of the parasitic membrane to calcium ions, which disrupts the metabolism of the parasite.

The product is effective against benzimidazole resistant strains of cyathostomes.

#### **5.2 Pharmacokinetic particulars**

Moxidectin is absorbed orally and maximum blood concentration is achieved approximately 6 to 8 hours after administration.

The drug is distributed throughout the body tissues but due to its lipophilicity it is selectively concentrated in the fat.

The elimination half-life is 11 days.

**Moxidectin undergoes partial biotransformation by hydroxylation in the body and the only significant route of excretion is the faeces.**

**Praziquantel is quickly and almost totally absorbed in the body, rapidly distributed to all organs, half life elimination is less than 1 hour in horses. Praziquantel is rapidly metabolised in the liver. Its principal metabolite is a related 4-hydroxycyclohexyl component.**

### 5.3 Environmental properties

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance. In particular, in acute and chronic toxicity studies with algae, crustaceans and fish, moxidectin showed toxicity to these organisms, yielding the following endpoints:

Organism		EC50	NOEC
Algae	<i>S. capricornutum</i>	>86.9 µg/l	86.9 µg/l
Crustaceans (Water fleas)	<i>Daphnia magna</i> (acute)	0.0302 µg/l	0.011 µg/l
	<i>Daphnia magna</i> (reproduction)	0.0031 µg/l	0.010 µg/l
Fish	<i>O. mykiss</i>	0.160 µg/l	Not determined
	<i>L. macrochirus</i>	0.620 µg/l	0.52 µg/l
	<i>P. promelas</i> (early life stages)	Not applicable	0.0032 µg/l
	<i>Cyprinus carpio</i>	0.11 µg/l	Not determined

EC<sub>50</sub>: the concentration which results in 50% of the test species individuals being adversely affected, i.e. both mortality and sub-lethal effects.

NOEC: the concentration in the study at which no effects are observed.

This implies that when allowing moxidectin to enter water bodies, this may have a severe and lasting impact on aquatic life. To mitigate this risk, all precautions for use and disposal must be adhered to.

## 6. PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Benzyl alcohol (E1519)  
Butyl hydroxytoluene (E321)  
Anhydrous colloidal silica  
Ethanol, anhydrous  
Polysorbate 80  
Ethyl cellulose  
Propylene glycol dicaprylate/dicaprate

### 6.2 Major incompatibilities

None known.

### 6.3 Shelf life

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

Shelf life after first opening the immediate packaging: 6 months

### 6.4 Special precautions for storage

Do not store above 25°C.

### 6.5 Nature and composition of immediate packaging

HDPE syringe containing 14.4 g of gel with graduated polypropylene plunger and LDPE cap packed as follows:

Box containing one syringe.

- Box containing 10 individually boxed syringes.
- Box containing 20 individually boxed syringes
- Box containing 20 syringes

Not all pack size may be marketed.

#### **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 material derived from such veterinary medicinal products should be disposed of in accordance with local requirements. Do not contaminate watercourses with the product. The product is toxic for fish and aquatic organisms.

#### **7. MARKETING AUTHORISATION HOLDER**

Zoetis UK Limited  
5th Floor, 6 St. Andrew Street  
London  
EC4A 3AE

#### **8. MARKETING AUTHORISATION NUMBER**

Vm 42058/4058

#### **9. DATE OF FIRST AUTHORISATION**

29 June 2006

#### **10. DATE OF REVISION OF THE T SUMMARY OF PRODUCT CHARACTERISTICS**

#### **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Equest Pramox 19.5 mg/g + 121.7 mg/g oral gel

Names used:

EQUEST PRAMOX ORAL GEL in all the countries except

Germany: EQUEST PRAMOX 19.5 mg/g + 121.7 mg/g Gel zum eingeben

Spain: EQUEST PRA-MOX

Portugal and Poland: EQUEST PRAMOX 19.5 mg/g + 121.7 mg/g oral gel

Denmark: Equest Pramox

Sweden: Cydectin Comp Vet.

#### **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each g contains:

##### **Active substances**

Moxidectin	19.5 mg
Praziquantel	121.7 mg

##### **Excipients**

Benzyl alcohol (E1519)	220.0 mg
Butylhydroxytoluene (E321)	0.8 mg

For a full list of excipients, see section 6.1

### 3. PHARMACEUTICAL FORM

Oral Gel.

Pale yellow to orange/pink oral gel.

### 4. CLINICAL PARTICULARS

#### 4.1 Target species

Horses.

#### 4.2 Indications for Use, specifying the target species

In horses:

For the treatment of mixed cestodes and nematodes or arthropods infections, caused by moxidectin and praziquantel sensitive strains of:

- Large strongyles:
  - . *Strongylus vulgaris* (adult stages)
  - . *Strongylus edentatus* (adult stages)
  - . *Triodontophorus brevicauda* (adults)
  - . *Triodontophorus serratus* (adults)
  - . *Triodontophorus tenuicollis* (adults)
  
- Small strongyles (adults and intraluminal larval stages):
  - . *Cyathostomum* spp
  - . *Cylicocyclus* spp
  - . *Cylicostephanus* spp
  - . *Cylicodontophorus* spp
  - . *Gyalocephalus* spp
  
- Ascarids:
  - . *Parascaris equorum* (adults)
  
- Other species:
  - . *Oxyuris equi* (adult stages)
  - . *Habronema muscae* (adults)
  - . *Gasterophilus intestinalis* (L2, L3)
  - . *Gasterophilus nasalis* (L2, L3)
  - . *Strongyloides westeri* (adults)
  - . *Trichostrongylus axei* (adult stages)
  
- Tapeworm (adults):
  - . *Anoplocephala perfoliata*
  - . *Anoplocephala magna*
  - . *Paranoplocephala mammillana*

The egg reappearance period of small strongyles is 90 days.

The product is effective against (developing) intramucosal L4 stages of small strongyles. At 8 weeks after treatment, early (hypobiotic) EL3 stages of small strongyles are eliminated.

### **4.3 Contraindications**

Do not administer to young foals less than 6.5 months old

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

The product has been formulated specifically for use in horses only. Dogs and cats may be adversely affected by the concentration of moxidectin in this product if they are allowed to ingest spilled gel or have access to used syringes.

### **4.4 Special warnings for each target species**

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;
- Under-dosing which may be due to underestimation of body weight, misadministration of the product, or lack of calibration of the dosing device (if any).
- 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.

For optimum control of bots, the product should be administered in the autumn, after the end of the fly season and before spring as the larvae may start to pupate and therefore are less sensitive to treatment.

Parasite resistance to a particular class of anthelmintic may develop following frequent, repeated use of an anthelmintic of that class. The veterinarian should give advice regarding appropriate dosing programmes and stock management to achieve adequate parasite control for both tapeworm and roundworm infestations.

### **4.5 Special Precautions for Use**

#### Special precautions for use in animals

To avoid overdosing, care should be taken to accurately dose foals, especially low body weight foals or pony foals.

Do not use the same syringe to treat more than one animal unless horses are running together or in direct contact with each other in the same premises.

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

This product may cause eye irritation, skin irritation and skin sensitisation.

Avoid contact with skin and eyes.

Use protective gloves.

Wash hands or any exposed area after use.

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

In the event of eye contact flush the eye with copious amount of clean water and seek medical advice.

In case of accidental ingestion, seek medical help and show the doctor the package insert.

### Other precautions

In order to limit the impact of moxidectin on dung fauna, and due to insufficient data regarding environmental risk of praziquantel, horses should not be turned out onto pasture within 3 days of treatment.

### Other precautions regarding impact on the environment

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance; therefore, exposure of the environment to moxidectin must be limited to the extent possible. Treatments should be administered only when necessary and should be based on faecal egg counts or evaluation of the risk of infestation at the animal and/or herd level. In order to reduce the emission of moxidectin to surface water and based on the excretion profile of moxidectin when administered as the oral formulation to horses, treated animals should not have access to watercourses during the first week after treatment.

Like other macrocyclic lactones, moxidectin has the potential to adversely affect non-target organisms:

- Faeces containing moxidectin excreted onto pasture by treated animals may temporarily reduce the abundance of dung feeding organisms. Following treatment of horses with the product, levels of moxidectin that are potentially toxic to dung beetles and flies may be excreted over a period of more than 1 week and may decrease dung fauna abundance.
- Moxidectin is inherently toxic to aquatic organisms including fish. The product should be used only according to the label instructions.

## **4.6 Adverse reactions**

Mouth pain, flaccid lower lip, swelling of the muzzle, hypersalivation and anorexia have been observed in rare cases. Ataxia has been reported on rare occasions and lethargy in very rare cases. These adverse effects are transient and disappear spontaneously

In case of very high worm burdens, destruction of the parasites may cause a mild transient colic and loose faeces in the treated horse.

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

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

## **4.7 Use during pregnancy, lactation or lay**

The veterinary medicinal product has been shown to be safe for use in breeding, pregnant and lactating mares.

The administration of the product does not adversely affect the fertility of the mares.

#### **4.8 Interaction with other medicinal products and other forms of interaction**

The effects of GABA agonists are increased by moxidectin.

#### **4.9 Amount to be administered and administration route**

A single oral dose of 400 µg moxidectin/kg bodyweight and 2.5 mg praziquantel/kg bodyweight using the calibrated syringe of one gradation per 25 kg live weight. To ensure administration of a correct dosage, body weight should be determined as accurately as possible; accuracy of the dosing should be checked. Use of a scale or weight tape is recommended to ensure accurate dosing.

Before the first dose, hold the syringe with the capped end pointing to the left and so that you can see the weight measurements and tick marks (small black lines). Set the syringe to zero by moving the dial ring so the left side is set at the first full black mark and depress the plunger, safely discarding any paste that is expelled.

To dose the product, hold the syringe as previously described. Each tick mark relates to 25 kg of body weight and to 10mg moxidectin/62.5 mg praziquantel. Turn the dial ring until the left side of the ring lines up with the weight of the animal.

A single syringe treats a 700 kg horse.

In the case of cestode treatment the dose of praziquantel in the product has been selected to the top end of the dosing range.

Veterinary advice should be given on appropriate dosing programmes and stock management to achieve optimum parasite control.

#### **4.10 Overdose (symptoms, emergency procedure, antidotes if necessary)**

Transient adverse reactions may occur at the recommended treatment dose in foals. In adults transient adverse reactions may occur at 3 times the recommended dose. The symptoms are depression, inappetence, ataxia, flaccid lower lip in the 8 to 24 hours following treatment. Symptomatic treatment is not generally necessary and recovery is generally complete within 24 to 72 hours. There is no specific antidote.

#### **4.11 Withdrawal period**

Meat and offal: 64 days.

Milk: not permitted for use in lactating mares producing milk for human consumption.

### **5. PHARMACOLOGICAL PROPERTIES**

Therapeutic group: antiparasitic product, endectocide

**ATCVet code** : QP 54 AB 52, moxidectin combination

#### **5.1 Pharmacodynamic properties**

Moxidectin is a parasiticide active against a wide range of internal and external parasites and is a second generation macrocyclic lactone of the milbemycin family.

Moxidectin interacts with GABA receptors and chloride channels. The net effect is to open the chloride channels on the postsynaptic junction to allow the inflow of chloride ions and induce an irreversible resting state. This results in flaccid paralysis and eventual death of parasites exposed to the drug.

Praziquantel is a parasiticide widely used in many species as an anthelmintic. Praziquantel is quickly absorbed via the tegument of the parasite and distributed. *In vitro* and *in vivo* important lesions of the tegument of the parasite are seen that provoke contraction and paralysis of the parasite. Praziquantel modifies the permeability of the parasitic membrane to calcium ions, which disrupts the metabolism of the parasite.

The product is effective against benzimidazole resistant strains of cyathostomes.

## 5.2 Pharmacokinetic particulars

Moxidectin is absorbed orally and maximum blood concentration is achieved approximately 6 to 8 hours after administration.

The drug is distributed throughout the body tissues but due to its lipophilicity it is selectively concentrated in the fat.

The elimination half-life is 11 days.

Moxidectin undergoes partial biotransformation by hydroxylation in the body and the only significant route of excretion is the faeces.

Praziquantel is quickly and almost totally absorbed in the body, rapidly distributed to all organs, half life elimination is less than 1 hour in horses. Praziquantel is rapidly metabolised in the liver. Its principal metabolite is a related 4-hydroxycyclohexyl component.

## 5.3 Environmental properties

Moxidectin fulfils the criteria for a (very) persistent, bioaccumulative and toxic (PBT) substance. In particular, in acute and chronic toxicity studies with algae, crustaceans and fish, moxidectin showed toxicity to these organisms, yielding the following endpoints:

Organism		EC50	NOEC
Algae	<i>S. capricornutum</i>	>86.9 µg/l	86.9 µg/l
Crustaceans (Water fleas)	<i>Daphnia magna</i> (acute)	0.0302 µg/l	0.011 µg/l
	<i>Daphnia magna</i> (reproduction)	0.0031 µg/l	0.010 µg/l
Fish	<i>O. mykiss</i>	0.160 µg/l	Not determined
	<i>L. macrochirus</i>	0.620 µg/l	0.52 µg/l
	<i>P. promelas</i> (early life stages)	Not applicable	0.0032 µg/l
	<i>Cyprinus carpio</i>	0.11 µg/l	Not determined

EC<sub>50</sub>: the concentration which results in 50% of the test species individuals being adversely affected, i.e. both mortality and sub-lethal effects.

NOEC: the concentration in the study at which no effects are observed.

This implies that when allowing moxidectin to enter water bodies, this may have a severe and lasting impact on aquatic life. To mitigate this risk, all precautions for use and disposal must be adhered to.

## 6. PHARMACEUTICAL PARTICULARS

## **6.1 List of excipients**

Benzyl alcohol (E1519)  
Butyl hydroxytoluene (E321)  
Anhydrous colloidal silica  
Ethanol, anhydrous  
Polysorbate 80  
Ethyl cellulose  
Propylene glycol dicaprylate/dicaprate

## **6.2 Major incompatibilities**

None known.

## **6.3 Shelf life**

Shelf life of the veterinary medicinal product as packaged for sale: 2 years  
Shelf life after first opening the immediate packaging: 6 months

## **6.4 Special precautions for storage**

Do not store above 25°C.

## **6.5 Nature and composition of immediate packaging**

HDPE syringe containing 14.4 g of gel with graduated polypropylene plunger and LDPE cap packed as follows:

Box containing one syringe.

- Box containing 10 individually boxed syringes.
- Box containing 20 individually boxed syringes
- Box containing 20 syringes

Not all pack size may be marketed.

## **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 material derived from such veterinary medicinal products should be disposed of in accordance with local requirements. Do not contaminate watercourses with the product. The product is toxic for fish and aquatic organisms.

## **7. MARKETING AUTHORISATION HOLDER**

Zoetis UK Limited  
5th Floor, 6 St. Andrew Street  
London  
EC4A 3AE

**8. MARKETING AUTHORISATION NUMBER**

Vm 42058/4058

**9. DATE OF FIRST AUTHORISATION**

29 June 2006

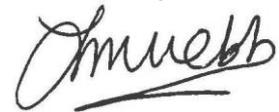
**10. DATE OF REVISION OF THE TEXT**

April 2019

**EXT**

April 2019

Approved: 17 April 2019

A handwritten signature in black ink, appearing to read 'J. Muellb', with a horizontal line underneath.

Approved: 17 April 2019

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