

Noromectin[®]

(ivermectin)

POUR-ON for Cattle

Contains 5 mg ivermectin/mL

ANADA 200-272, Approved by FDA

Parasiticide

Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism.

Introduction

Noromectin (ivermectin) Pour-On delivers internal and external parasite control in one convenient low-volume application.

Indications

Noromectin Pour-On applied at the recommended dose level of 500 mcg/kg is indicated for the effective control of these parasites.

Gastrointestinal Roundworms

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| <i>Ostertagia ostertagi</i> (including inhibited stage) | (adults and L ₄) |
| <i>Haemonchus placei</i> | (adults and L ₄) |
| <i>Trichostrongylus axei</i> | (adults and L ₄) |
| <i>T. colubriformis</i> | (adults and L ₄) |
| <i>Cooperia oncophora</i> | (adults and L ₄) |
| <i>Cooperia punctata</i> | (adults and L ₄) |
| <i>Cooperia surnabada</i> | (adults and L ₄) |
| <i>Strongyloides papillosus</i> | (adults) |
| <i>Oesophagostomum radiatum</i> | (adults and L ₄) |
| <i>Trichuris</i> spp. | (adults) |

Lungworms

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|-------------------------------|------------------------------|
| <i>Dictyocaulus viviparus</i> | (adults and L ₄) |
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Cattle Grubs

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| <i>Hypoderma bovis</i> <i>H. lineatum</i> | (parasitic stages) |
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Mites

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| <i>Sarcoptes scabiei</i> var. <i>bovis</i> |
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Lice

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| <i>Linognathus vituli</i> <i>Haematopinus eurysternus</i> <i>Damalinea bovis</i> <i>Solenopotes capillatus</i> |
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Horn Flies

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| <i>Haematobia irritans</i> |
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Persistent Activity

Noromectin Pour-On has been proved to effectively control infections and to protect cattle from re-infection with: *Oesophagostomum radiatum* and *Dictyocaulus viviparus* for 28 days after treatment; *Cooperia punctata* and *Trichostrongylus axei* for 21 days after treatment; *Ostertagia ostertagi*, *Haemonchus placei*, *Cooperia oncophora* and *Cooperia surnabada* for 14 days after treatment; *Damalinea bovis* for 56 days after treatment.

Treatment of Cattle for Horn Flies

Noromectin Pour-On controls horn flies (*Haematobia irritans*) for up to 28 days after dosing. For best results Noromectin Pour-On should be part of a parasite control program for both internal and external parasites based on the epidemiology of these parasites. Consult your veterinarian or an entomologist for the most effective timing of applications.

Dosage

The dose rate is 1 mL for each 22 lb of body weight. The formulation should be applied along the topline in a narrow strip extending from the withers to the tailhead.

Administration

Collapsible Pack (33.8 fl oz/1 liter pack with dispensing cap)

The dispensing cap is graduated in 5 mL increments. Each 5 mL will treat 110 lbs body weight. When body weight is between markings, use the next higher increment. Attach the dispensing cap to the bottle. Select the correct dose rate by rotating the adjuster top in either direction to position the dose indicator to the appropriate level. Hold the bottle upright and gently squeeze it to deliver a slight excess of the required dose as indicated by the calibration lines. By releasing the pressure, the dose automatically adjusts to the correct level. Tilt the bottle to deliver the dose. The "closed-off-shut" position will close the system between dosing. If the animal being treated weighs more than 550 lbs (250 kg), refill the dispensing cap to the additional amount required to provide the total dose for that animal and apply as directed.

Collapsible Pack (84.5 fl oz/2.5 liter pack; 169 fl oz/5 liter pack with dosing gun/applicator)

Because of the solvents used in Noromectin Pour-On, the applicator gun from Simcro Tech, or equivalent, is recommended. Other applicators may exhibit compatibility problems resulting in locking, incorrect dosage or leakage. Remove the shipping cap from the backpack container and replace with the vent cap provided. Attach the hose from the automatic dosing equipment to the outlet from the vent cap. Follow the applicator gun manufacturer's directions for priming the gun, adjusting the dose, and care of the applicator gun following use.

Container (676 fl oz/20 liter container with draw-off device and dosing gun/applicator)

Because of the solvents used in Noromectin Pour-On, the draw-off device and applicator gun from Simcro Tech, or equivalent, is recommended. Other applicators may exhibit compatibility problems resulting in locking, incorrect dosage or leakage. Screw Feedlot pack cap and dip tube onto the 20 liter drum ensuring a tight fit. Connect the long 3m feed tube at one end to the spigot on the Feedlot pack cap and the other end to the applicator gun. Then follow the applicator gun manufacturer's directions for priming the gun, adjusting the dose, and care of the applicator gun following use.

When the interval between use of the applicator gun is expected to exceed 12 hours, disconnect the gun, draw off tubing and dip tub and cap from the product container, empty the product from the gun and tubing back into the container and replace the shipping cap.

| Weight | Dose |
|------------------|-------|
| 220 lb (100 kg) | 10 mL |
| 330 lb (150 kg) | 15 mL |
| 440 lb (200 kg) | 20 mL |
| 550 lb (250 kg) | 25 mL |
| 660 lb (300 kg) | 30 mL |
| 770 lb (350 kg) | 35 mL |
| 880 lb (400 kg) | 40 mL |
| 990 lb (450 kg) | 45 mL |
| 1100 lb (500 kg) | 50 mL |

Mode of Action

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.

Animal Safety

Studies conducted in the U.S.A. have demonstrated the safety margin for ivermectin. Based on plasma levels, the topically applied formulation is expected to be at least as well tolerated by breeding animals as is the subcutaneous formulation which had no effect on breeding performance.

RESIDUE INFORMATION: Cattle must not be treated within 48 days of slaughter for human consumption. Because a withdrawal time in milk has not been established, do not use in female dairy cattle of breeding age. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

WARNING! NOT FOR USE IN HUMANS

This product should not be applied to self or others because it may be irritating to human skin and eyes and absorbed through the skin. To minimize accidental skin contact, the user should wear a long-sleeved shirt and rubber gloves. If accidental skin contact occurs, wash immediately with soap and water. If accidental eye exposure occurs, flush eyes immediately with water and seek medical attention.

Keep this and all drugs out of the reach of children.

**WARNING! FLAMMABLE!
KEEP AWAY FROM HEAT, SPARKS, OPEN FLAME,
AND OTHER SOURCES OF IGNITION.**

The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. To report adverse effects, obtain an MSDS, or for assistance call Norbrook at 1-913-599-5777.

PRECAUTIONS

Store away from excessive heat (104°F/40°C) and protect from light.

Use only in well-ventilated areas or outdoors.

Close container tightly when not in use.

Cattle should not be treated when hair or hide is wet since reduced efficacy may be experienced.

Do not use when rain is expected to wet cattle within six hours after treatment.

This product is for application to skin surface only. Do not give orally or parenterally.

Cloudiness in the formulation may occur when Noromectin (ivermectin) Pour-On is stored at temperatures below 32° F. Allowing it to warm at room temperature will restore the normal appearance without affecting efficacy.

Antiparasitic activity of ivermectin will be impaired if the formulation is applied to areas of the skin with mange scabs or lesions, or with dermatoses or adherent materials, e.g. caked mud or manure.

Ivermectin has been associated with adverse reactions in sensitive dogs; therefore, Noromectin Pour-On is not recommended for use in species other than cattle.

When to Treat Cattle with Grubs

Noromectin Pour-On effectively controls all stages of cattle grubs. However, proper timing of treatment is important. For the most effective results, cattle should be treated as soon as possible after the end of the heel fly (warble fly) season. While this is not peculiar to ivermectin, destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions. Killing *Hypoderma lineatum* when it is in the esophageal tissues may cause bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. Cattle should be treated either before or after these stages of grub development.

Cattle treated with Noromectin Pour-On at the end of the fly season may be re-treated with Noromectin during the winter without danger of grub-related reactions. For further information and advice on a planned parasite control program, consult your veterinarian.

Environmental Safety

Studies indicate that when ivermectin comes in contact with the soil, it readily and tightly binds to the soil and becomes inactive over time. Free ivermectin may adversely affect fish or certain aquatic organisms. Do not permit cattle to enter lakes, streams or ponds for at least six hours after treatment. Do not contaminate water by direct application or by the improper disposal of drug containers. Dispose of containers in an approved landfill or by incineration.

As with other avermectins, ivermectin is excreted in the dung of treated animals and can inhibit the reproduction and growth of pest and beneficial insects that use dung as a source of food and for reproduction. The magnitude and duration of such effects are species and life-cycle specific. When used according to label directions, the product is not expected to have an adverse impact on populations of dung-dependent insects.

Package Information

Noromectin Pour-On is available in a 33.8 fl oz/1 L collapsible pack for use with the dispensing cap provided, or in an 84.5 fl oz/2.5 L collapsible pack, in a 169 fl oz/5 L collapsible pack and a 676 fl oz/20 L container intended for use with appropriate automatic dosing equipment.

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