

# Eprizero<sup>®</sup> (eprinomectin)

**POUR-ON** for Beef and Dairy Cattle

Eprizero<sup>®</sup> Pour-On  
for treatment and  
control of 39 species  
and stages of  
parasites

**ZERO**  
days meat  
withdrawal

**99.9%  
Effective**  
against the  
major species  
and stages of  
parasites

**SAME**  
active ingredient  
and dosing  
regimen as  
Eprinex<sup>®</sup>  
(eprinomectin)



## STOPS PARASITES AT THEIR SOURCE FOR LONGER CONTROL AND SAFETY

Provides excellent  
broad-spectrum treatment  
and control against internal  
and external parasites,  
and return on investment,  
in a convenient pour-on  
formulation.

Research shows that the  
active ingredient in  
Eprizero<sup>®</sup> Pour-On  
outperformed Cydectin<sup>®</sup>  
(moxidectin), Ivomec<sup>®</sup>  
(ivermectin) and Dectomax<sup>®</sup>  
(doramectin) in head-to-head  
university studies.<sup>1</sup>

Parasites adversely affect beef  
production and especially  
profitability by impacting  
weaning weights, weaned  
calf crop and feed efficiency.  
Treating for parasites with a  
broad-spectrum product  
like Eprizero<sup>®</sup>, has shown an  
economic return of \$201/head.<sup>2</sup>

### RAIN IS NOT AN ISSUE

Where rain is an issue after treatment, the active ingredient  
in Eprizero<sup>®</sup> Pour-On was 99% effective against adults and  
immature larvae (L4) of the most economically significant  
internal parasites (worms) and nematodes found in cattle.<sup>3</sup>



Norbrook offers Eprizero<sup>®</sup> Pour-On  
in convenient 1 Liter, 2.5 Liter, 5 Liter  
and 20 Liter sizes for economical  
per-dose application.

**IMPORTANT SAFETY INFORMATION:** No meat or milk withdrawal is required when used according to label. Do not use in calves intended for veal or unapproved animal species as severe adverse reactions, including fatalities in dogs, may result.



ANADA 200-563, Approved by FDA

# Eprizero® (eprinomectin)

## POUR-ON for Beef and Dairy Cattle

### Parasiticide

Contains 5 mg eprinomectin/mL

### Not for use in calves to be processed for veal.

### INTRODUCTION

Eprizero® Pour-On delivers effective internal and external parasite control in one application. Eprizero Pour-On contains eprinomectin, a unique avermectin. Its broad-spectrum efficacy in a weatherproof formulation, mean g safety, zero slaughter withdrawal and zero milk discard, make it a convenient product for parasite control in beef and dairy cattle, including lactating dairy cattle.

### MODE OF ACTION

Eprinomectin 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.

### INDICATIONS

Eprizero (eprinomectin) Pour-On is indicated for the treatment and control of gastrointestinal roundworms (including inhibited *Ostertagia ostertagi*, lungworms, grubs, sucking and biting lice, chorioptic and sarcoptic mange mites, and from flies in beef and dairy cattle of all ages, including lactating dairy cattle. Applied at the recommended dose volume of 1 mL/10 kg (22 lb) body weight, it achieves a dose level of 500 mcg eprinomectin/kg body weight. Eprizero Pour-On is indicated for the effective treatment and control of the following parasites:

### Gastrointestinal Roundworms

*Haemonchus placei* (adults and L4)  
*Ostertagia ostertagi* (including inhibited L4) (adults and L4)  
*Trichostrongylus axei* (adults and L4)  
*Trichostrongylus colubriformis* (adults and L4)  
*Trichostrongylus axei* (adults only)  
*Cooperia oncophora* (adults and L4)  
*Cooperia punctata* (adults and L4)  
*Cooperia sunnibada* (adults and L4)  
*Nematodirus helveticus* (adults and L4)  
*Oesophagostomum radiatum* (adults and L4)  
*Bonosaurus phlebotomus* (adults and L4)  
*Strongylides papillosus* (adults only)  
*Trichostrongylus axei* (adults only)

### Lungworms

*Dictyocaulus viviparus* (adults and L4)

### Cattle Grubs (all parasitic stages)

*Hypoderma lineatum*  
*Hypoderma bovis*

### Lice

*Dermania bovis*  
*Lingulinius vituli*  
*Haematopinus eurysternus*  
*Solenopotes capillatus*

### Manage Mites

*Chorioptes bovis*  
*Sarcoptes scabiei*

### Horn Flies

*Haematobia irritans*

### Persistent Activity

Eprizero (eprinomectin) Pour-On for Beef and Dairy Cattle has been proved to effectively control infections for 21 days after treatment and *Haematobia irritans* for 7 days after treatment.

### Use Conditions

Varying weather conditions, including rainfall, do not affect the efficacy of Eprizero Pour-On.

### Management Considerations for Treatment of External Parasites

For best results Eprizero Pour-On should be applied to all cattle in the herd. Cattle introduced to the herd later should be treated prior to introduction. Consult your veterinarian or an entomologist for the most effective timing of applications for the control of external parasites.

### Chlorotic Mange: In clinical studies evaluating the efficacy of eprinomectin against chlorotic mange mites, mites were not recovered from skin scrapings taken 8 weeks after treatment; however, chronic skin lesions were still present on some animals.

### Horn flies: For optimal control of horn flies, as Eprizero Pour-On provides 7 days of persistent activity against horn flies, the product should be used as part of an integrated control program utilizing other control methods to provide extended control.

### DOSSAGE

The product is formulated only for external application to beef and dairy cattle. The dose rate is 1 mL/10 kg (22 lb) of body weight. The product should be applied topically along the backbone in a narrow strip extending from the withers to the tailhead.

### ADMINISTRATION

**Squeeze-Measure-Pour System (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 container. Select the correct dose rate by rotating the adjuster top in either direction to position the dose indicator to the appropriate level. Hold the container 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. Fill the container 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), fill the dispensing cap to the additional amount required to provide the total dose for that animal and apply as directed.

### Container (94.5 fl oz/2.5 liter pack, 169 fl oz/5 liter pack)

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. Gently prime the dosing applicator, checking for leaks. Follow the applicator gun manufacturer's directions for adjusting the dose and care of the applicator gun following use.

### Container (676 fl oz/20 liter container with draw-off device)

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. Gently prime the dosing applicator, checking for leaks. Then follow the applicator gun manufacturer's directions for 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 tube 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

### ANIMAL SAFETY

Tolerance and toxicity studies have demonstrated the margin of safety for eprinomectin in cattle. In toxicity studies, application of 3 times the recommended dose had no adverse effects on neonatal calves and application of up to 5 times the recommended dose 3 times at 7 day intervals had no adverse effects on 8 week old calves. In the tolerance study, one of 6 cattle treated once at 10 times the recommended dose showed clinical signs of myiasis. Application of 3 times the recommended dose had no adverse effect on breeding performance of cows or bulls.

### RESIDUE WARNINGS

When used according to label directions, neither a pre-slaughter drug withdrawal period nor a milk discard time is required; therefore, meat and milk from cattle treated with Eprizero (eprinomectin) Pour-On may be used for human consumption at any time following treatment. A withdrawal period has not been established for pre-ruminating calves. Do not use in calves to be processed for veal.

### WARNING

**Keep this and all drugs out of the reach of children. NOT FOR USE IN HUMANS.**

As with any topical medication intended for treatment of animals, skin contact should be avoided. If accidental skin contact occurs, wash immediately with soap and water. If accidental eye exposure occurs, flush eyes immediately with water. The safety data sheet (SDS) contains more detailed occupational safety information. To report adverse effects, obtain an SDS or for assistance, contact Norbrook at 1-866-591-5777.

### PRECAUTIONS

This product is for topical application only. Do not administer orally or by injection. Do not apply to areas of the backline covered with mud or manure.

Eprizero Pour-On is not recommended for use in species other than cattle. Severe adverse reactions have been reported in other species treated with products containing compounds of this class.

### When to Treat Cattle with Grubs

Eprizero Pour-On is effective against 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 (variable fly) season. While this is not peculiar to eprinomectin, destruction of *Hypoderma lineatum* (cattle grub) 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 Eprizero Pour-On at the end of the fly season may be re-treated with Eprizero Pour-On 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 eprinomectin comes in contact with soil, it readily and tightly binds to the soil and becomes inactive over time. Free invertebrate eprinomectin may adversely affect fish and certain aquatic organisms. Do not permit cattle to enter lakes, streams or ponds for at least 6 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 by incineration. As with other avermectins, eprinomectin 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.

### ADVERSE REACTIONS

No adverse reactions were observed during clinical trials.

### STORAGE CONDITIONS

Store container in the carton to protect from light and at temperatures up to 86° F/30° C. Storage at temperatures up to 104° F/40° C is permitted for a short period of time; however, such exposure should be minimized.

### HOW SUPPLIED

Eprizero (eprinomectin) Pour-On for Beef and Dairy Cattle is available in 1 L/33.8 fl oz container with a squeeze-measure-pour system, or in a 2.5 L/84.5 fl oz or 5 L/169 fl oz container or 20 L/676 fl oz container intended for use with appropriate automatic dosing equipment.

### Restricted Drug (California) - Use Only as Directed.

Made in the UK  
Manufactured by:  
Norbrook Laboratories Limited  
Newry, BT35 6PU, Co. Down, Northern Ireland.

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<sup>1</sup> Paul A, Hutchens D, Hart D, Maciel AE, Robertson C, Gross SJ. Comparison of Eprinomectin with other macrocyclic lactones in cattle. Proceedings, 45th Annual Meeting of the American Association of Veterinary Parasitologists, Salt Lake City, Utah. 2000.

<sup>2</sup> Lawrence JD, Ibarbura MA. Economic analysis of pharmaceutical technologies in modern beef production in a bioeconomy era. Iowa State University. 2009. Available at <http://www.econ.iastate.edu/faculty/lawrence/Pharma%202007%20Update.pdf>. Accessed March 2, 2009.

<sup>3</sup> Cruthers L, Sloan R. Comparative efficacy of commercial pour-on parasiticides applied to wet cattle. Proceedings, 44th Annual Meeting of the American Association of Veterinary Pathologists, 1999, 29.