

# Get Deworming Right

ROTATION AND STRATEGIC DEWORMING HELP TO MANAGE RESISTANCE

Resistance to all compounds is growing. Be sure to select compounds, not brand names, to better manage compound resistance.



The ingredient in Panacur® (fenbendazole) POWERPAC is the ONLY one FDA approved to treat all stages of encysted small strongyles.



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

## DEWORMER COMPOUND COMPARISON

COMPOUND NAME

	Small Strongyles	Encysted Small Strongyles	Roundworms	Large Strongyles & Pinworms	Bots	Tapeworms
panacur® (fenbendazole) POWERPAC						
panacur® (fenbendazole) PASTE						
safe-guard® (fenbendazole) PASTE/EQUI-BITS®*						
MOXIDECTIN +/- PRAZIQUANTEL **						**
IVERMECTIN +/- PRAZIQUANTEL **						**
PYRANTEL						

\* Do not use for horses intended for human consumption

\*\* The Addition of Praziquantel Treats Tapeworms



# Defend Your Horse

## What You Need to Know to Combat Intestinal Parasites



## Before You Begin...



### WHY GET A FECAL?

A properly timed fecal egg count (FEC) test ensures you are treating your horse for the actual parasites present and that the dewormers you are using are still working. Results help plan the right rotational program. And getting test samples is easy.

- **Scoop up fist-sized fresh manure in marked zip-close baggy**
- **Keep cool; deliver within 12 hours to vet**
- **Review test results with your vet**
- **Best done spring or fall, but helpful anytime**

### WHAT NEXT?

Select the right program for your horse using these three steps:

1. **Know the Enemy**
2. **Know Your Horse**
3. **Know the Plan**

### STEP ONE:

## Know the Enemy

#### TARGET:

### SMALL STRONGYLES

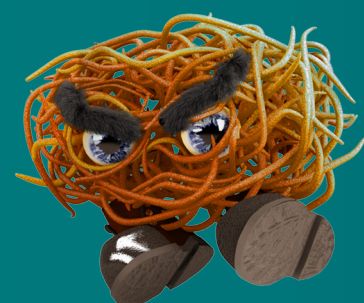
Adult small strongyles live in the large intestine, producing eggs expelled in feces. All 3 major deworming compounds kill adults. However, the worst family members are the encysted larvae that burrow into intestinal walls and contribute to poor condition. The abrupt, large emergence of larvae from the walls can cause a potentially fatal case of colic or severe diarrhea. Only two drugs can kill encysted small strongyles: a five-day larvicidal dose of Panacur® (fenbendazole) POWERPAC or moxidectin.



#### TARGET:

### ROUNDWORMS

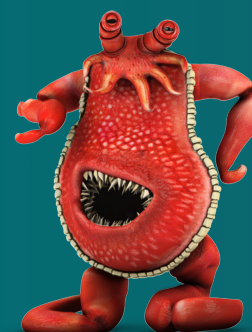
Roundworms, or ascarid larvae, migrate through intestinal walls to the liver and then to the lungs, often causing severe damage to both respiratory and digestive systems. Foals and young horses under age 2 are the most vulnerable. Foals should be treated with a double-dose of fenbendazole at 8 to 12 weeks of age, as roundworms have become less susceptible to some, or all, of the other major compounds in some regions or on certain farms.



#### TARGET:

### LARGE STRONGYLES

Also called bloodworms, large strongyle larvae weaken abdominal artery walls causing symptoms that range from diarrhea and weight loss to potentially fatal colic due to obstruction of blood flow. While all compounds are effective against adults, if no resistance, only macrocyclic lactones and larvicidal dosages of fenbendazole are effective against larvae. Young horses are most vulnerable.



#### TARGET:

### PINWORMS

Eggs are laid around the anus of an infected horse. Horses will rub the tail and rectal area to relieve itching caused by the adhesive nature of the deposited eggs, resulting in hair loss and raw skin patches. It affects all ages, and any of the 3 major deworming compounds will kill pinworms.



#### TARGET:

### BOTS

In late summer, bot flies lay eggs on a horse's hair, mainly on the legs. When licked by the horse, the eggs hatch into larvae which live in the stomach up to 7 months, causing digestive problems. All ages are vulnerable each year. Ivermectin or moxidectin can be used at the end of the grazing season as a treatment for bots.



#### TARGET:

### TAPEWORMS

Adult tapeworms live in the intestines, causing local bowel irritation and disrupting intestinal motility. Young horses are more susceptible to infection and clinical signs of disease, although all ages can be affected. Symptoms include poor growth in young horses, poor overall condition, inflamed intestines, diarrhea and colic. Praziquantel or a double dose of pyrantel are the only effective treatments for tapeworms.



### STEP TWO:

## Know Your Horse

#### FOALS

Roundworms can cause severe health problems in foals. Treat with double-dose fenbendazole at 8-12 weeks old, then continue properly timed dewormer treatments.



#### ADOLESCENTS

Yearlings through age 2 are susceptible to all parasites as immune systems develop. 4 to 6-step rotational deworming may be recommended.



#### ADULT HIGH-SHEDDERS

The five to 20 percent of adult horses considered to be "high-shedders" may need to be on a 4 to 6-step rotational deworming program. High-shedders are determined by a fecal egg count test. Veterinary consultation is advised.



#### ADULT LOW-SHEDDERS

Most adult horses have good immune systems and are less sensitive to parasite infestation. They may only need to be treated 3 times per year.



#### SENIORS

Horses over age 15 usually can continue on the same rotational program as younger adults unless afflicted by health issues. Consult with a veterinarian.



#### NEW HORSES

If deworming program is unknown in a new horse, a five-day Panacur® POWERPAC treatment is recommended upon arrival and before being turned out to pasture. A follow up treatment with a different drug class may also be warranted.

### STEP THREE:

## Know the Plan

Once parasite enemies are identified and understood, the right deworming program can be planned for each individual horse, based first on age and then on other conditions that may include regional climate, living conditions, stocking density, time on pasture, and a fecal test. Good management includes providing a clean environment and reviewing deworming programs with your vet each year.

**Suggested deworming: see chart for details.**

#### FOALS:

### 5-6 STEP ROTATION

See Inside	1	
1	2-3 MONTHS	SAFE-GUARD® or PANACUR® PASTE
2	4-5 MONTHS	See Inside 2 PYRANTEL PAMOATE
3	6-7 MONTHS	See Inside 3 SAFE-GUARD® PASTE/ EQUI-BITS® or PANACUR® PASTE
4	8-9 MONTHS	IVERMECTIN +/- PRAZIQUANTEL
5	11-12 MONTHS	PANACUR® POWERPAC

#### ADOLESCENTS:

### 4-6 STEP ROTATION

1	SPRING	IVERMECTIN
2a	EARLY SUMMER	See Inside 4 PYRANTEL PAMOATE
2b	LATE SUMMER	See Inside 4 SAFE-GUARD® PASTE/ EQUI-BITS® or PANACUR® PASTE
3	EARLY FALL	PYRANTEL PAMOATE
4	LATE FALL	IVERMECTIN +/- PRAZIQUANTEL
5	LATE WINTER/ EARLY SPRING	PANACUR® POWERPAC or MOXIDECTIN

#### ADULT HIGH-SHEDDERS:

### 4-6 STEP ROTATION

(CHECK WITH YOUR VETERINARIAN)

See Inside	5	
1	LATE WINTER/ EARLY SPRING	PANACUR® POWERPAC
2	SPRING	See Inside 6 IVERMECTIN or MOXIDECTIN
3	EARLY FALL	SAFE-GUARD® PASTE/ EQUI-BITS® or PANACUR® PASTE
4	LATE FALL	IVERMECTIN or MOXIDECTIN +/- PRAZIQUANTEL

#### ADULT LOW-SHEDDERS:

### 2-3 STEP ROTATION

1	LATE WINTER/ EARLY SPRING	PANACUR® POWERPAC
2	SPRING	See Inside 5 PYRANTEL PAMOATE
3	LATE FALL	IVERMECTIN +/- PRAZIQUANTEL

#### SENIORS:

### CHECK WITH YOUR VET

Similar to adults but age related. Conditions that suppress the immune system may require a special program.



#### NEW HORSES:

### Panacur® POWERPAC

We recommend all incoming horses start out with Panacur® POWERPAC before entering your stable.



For more information please visit:  
[www.GetDewormingRight.com](http://www.GetDewormingRight.com)



# Get Deworming Right

WHAT YOU NEED TO KNOW TO COMBAT INTESTINAL PARASITES



## BEFORE YOU BEGIN: GET THE SCOOP ON YOUR HORSE'S POOP




A fecal exam is the most reliable way to be sure you're treating your horse for the right parasites. Check with your veterinarian before starting any deworming program.



## THE USUAL SUSPECTS

### 1. KNOW THE ENEMY

Smart horse owners know the best offense against equine parasites is a strong defense based on identifying and understanding the enemies that threaten your horse's health. Check out the six worst offenders below.







 <b>ROUNDWORMS</b>  <b>THREAT LEVEL: HIGH TO SEVERE</b> <b>LIFECYCLE:</b> Mature eggs are ingested when eaten through the feces and environment; larvae migrate through intestinal wall to the liver; blood carries larvae from the liver to lungs; larvae enter airways and are coughed up into mouth; larvae are swallowed and become adults in the small intestine; adults lay up to 200,000 eggs per day; eggs are expelled in feces. Approximate 80-day cycle. <b>SYMPTOMS:</b> Signs of respiratory disease including nasal discharge and cough; Signs of intestinal disease including weight loss, pot belly, poor condition, digestive problems, impaction colic, bowel rupture, and death in some cases. <b>AFFECTS:</b> Foals and young horses under age 2 are most vulnerable, as an infestation can severely affect both respiratory and digestive systems. Adult horses develop some immunity unless infestation is extreme and unchecked.	 <b>ENCYSTED SMALL STRONGYLES</b>  <b>THREAT LEVEL: MODERATE TO SEVERE</b> <b>LIFECYCLE:</b> Eggs in feces; 1st & 2nd stage larvae in soil or feces; 3rd stage larvae ingested by horses from mangers, grass, feed, etc.; larvae burrow (encyst) into intestinal walls for months or even years; when large numbers of cyathostomes emerge from "hibernation" within the intestinal wall and re-enter the intestines, severe disease can occur; adults live in large intestine and produce millions of eggs expelled in feces. <b>SYMPTOMS:</b> During the encysted stage the horse may have poor feed conversion and lethargy. Upon sudden emergence from encysted stage, loss of appetite, diarrhea, anemia, lethargy, colic, and even death in extreme cases can occur. <b>AFFECTS:</b> All ages are vulnerable, but younger horses and immunocompromised adults are most susceptible. Upon emergence, severe inflammation and bleeding in the intestine causes normal gut action to be affected, resulting in diarrhea, anemia, colic and occasionally death.	 <b>LARGE STRONGYLES</b>  <b>THREAT LEVEL: MODERATE TO SEVERE</b> <b>LIFECYCLE:</b> Eggs in feces; 1st & 2nd stage larvae in soil or feces; 3rd stage larvae ingested by horses from mangers, grass, feed, etc.; larvae migrate from large intestine through blood vessel walls or other organs; adults live in the large intestine and produce millions of eggs expelled in feces. <b>SYMPTOMS:</b> Weight loss, digestive problems due to obstructed blood flow to portions of the large intestine, dull coat, poor appetite, lethargy, pot belly, liver problems, colic, and even death in extreme cases. <b>AFFECTS:</b> Especially dangerous to young horses under age 2, and all horses if infestation is left unchecked. Migrating larvae damage blood vessels, intestinal walls, and organs such as the liver.	 <b>PINWORMS</b>  <b>THREAT LEVEL: MODERATE</b> <b>LIFECYCLE:</b> Eggs are laid around the anus of an infected horse; eggs fall to the ground and are ingested by other horses; eggs hatch in the stomach (occasionally other organs) and remain there until larvae are mature; larvae migrate to the large intestine and colon; adults migrate to the anus and lay eggs there before withdrawing back inside <b>SYMPTOMS:</b> The adhesive nature of the deposited eggs is irritating and causes horses to rub their tail and rectal area to relieve the itching resulting in damage to hair and skin. <b>AFFECTS:</b> Can affect all ages. Although relatively harmless to a horse's overall health, itching from pinworms can cause damage to hair and skin.	 <b>TAPEWORMS</b>  <b>THREAT LEVEL: MODERATE</b> <b>LIFECYCLE:</b> Horse ingests a mite infected with larval tapeworm; larvae develop into adult tapeworms in the intestine in about 2 months; adult tapeworms live in intestine and absorb food as it passes by; adults produce eggs that are passed in horse feces; mites eat eggs; eggs produce larval tapeworms inside the mites in 2 to 4 months <b>SYMPTOMS:</b> Poor growth in young horses, poor condition overall, inflamed intestines, intermittent diarrhea, and/or colic. <b>AFFECTS:</b> All ages are affected, as immunity isn't apparent. Young horses under age 2 may be more susceptible to problems. Heavy infestation may affect various areas of the intestinal tract, causing scarring or severe inflammation.	 <b>BOTS</b>  <b>THREAT LEVEL: LOW</b> <b>LIFECYCLE:</b> Bot flies (3 species) lay yellow or gray eggs on horse's hair on legs, mane, flanks, jaws, throat or lips in late summer; eggs enter the mouth when licked and hatch into larvae, remaining in the mouth up to 3 weeks; larvae migrate to stomach and small intestine and attach to the lining for about 7 months; larvae pass out in feces, enter the soil and over 2 months, develop into adult flies; adult flies lay eggs on hair on horse's legs and trunk. <b>SYMPTOMS:</b> Digestive problems, dull coat, and colic. <b>AFFECTS:</b> All ages can be affected. Bot larvae damage the lining of the stomach and small intestine, interfere with the passage of food, and may cause other digestive problems.
--	---	--	---	---	---

### 2. KNOW YOUR HORSE

Each individual horse faces a unique parasitic challenge, depending especially upon age, and then immunity level, environment, climatic region, and management practices.

### 3. KNOW THE PLAN

Once parasite enemies are known and understood, the right deworming program can be planned for each individual horse, based first on age and then on other conditions that may include regional climate conditions, stocking density, history of dewormer use, and results of fecal testing. Good management includes providing a clean environment and reviewing deworming programs each year.

<div><h3>FOALS</h3><p>(up to 1 year)</p><p>Roundworms can cause severe health problems in foals. Treat with a double dose of fenbendazole (4.6 mg/lb) at 8-12 weeks of age, then continue strategic dewormer treatments. (Suggested for small, closed herd operation)</p><p>See Below   1</p></div> <div></div> <div><p>5-6 STEP ROTATION</p></div>
<div><h3>ADOLESCENTS</h3><p>(1-2 years old)</p><p>Susceptible to all parasites as immune system develops. Considered "high shedders" that actively pass on parasites. Frequent strategic deworming recommended.</p><p>See Below   1</p></div> <div></div> <div><p>4-6 STEP ROTATION (Check with Your Vet)</p></div>
<div><h3>ADULT HIGH-SHEDDERS</h3><p>Five to 20 percent of horses are high shedders and consistently shed higher numbers of strongyle eggs back into the environment. More frequent rotational deworming and fecal analysis are recommended. Broodmares: Consult your veterinarian.</p><p>See Below   5</p></div> <div></div> <div><p>4-6 STEP ROTATION (Check with Your Vet)</p></div>
<div><h3>ADULT LOW SHEDDERS</h3><p>Most adults build up immunity to some parasites, have low shedding rates, and may not need to be dewormed as often.</p><p>See Below   6</p></div> <div></div> <div><p>2-3 STEP ROTATION</p></div>
<div><h3>SENIORS</h3><p>(over age 15)</p><p>Older horses continue on Adult deworming programs based on their strongyle shedding status unless compromised by health or immune system issues. Consult your veterinarian for guidance.</p><p>See Below   6</p></div> <div></div> <div><p>CUSTOM ROTATION</p></div>
<div><h3>NEW HORSES</h3><p>If deworming program is unknown, a five-day Panacur® POWERPAC treatment is recommended upon arrival and before being turned out on pasture. A follow up in two weeks with Ivermectin or Moxidectin might be warranted based on a fecal exam.</p><p>See Below   6</p></div> <div></div> <div><p>PANACUR® POWERPAC</p></div>

<div><p>1</p><p>2-3 MONTHS</p><p>Safe-Guard® Paste or Panacur® Paste</p></div> <div><p>2</p><p>4-5 MONTHS</p><p>Pyrantel Pamoate</p></div> <div><p>3</p><p>6-7 MONTHS</p><p>Safe-Guard® Paste/ Equi-Bits®* or Panacur® Paste</p></div> <div><p>4</p><p>8-9 MONTHS</p><p>Ivermectin +/- Praziquantel</p></div> <div><p>5</p><p>11-12 MONTHS</p><p>Panacur® POWERPAC</p></div>				
<p>See Below   2</p>	<p>See Below   3</p>	<p>See Below   4</p>	<p>See Below   5</p>	<p>See Below   6</p>
<div><p>1</p><p>SPRING</p><p>Ivermectin</p></div> <div><p>2a</p><p>EARLY SUMMER</p><p>Pyrantel Pamoate</p></div> <div><p>2b</p><p>LATE SUMMER</p><p>Safe-Guard® Paste/ Equi-Bits®* or Panacur® Paste</p></div> <div><p>3</p><p>EARLY FALL</p><p>Pyrantel Pamoate</p></div> <div><p>4</p><p>LATE FALL</p><p>Ivermectin +/- Praziquantel</p></div> <div><p>5</p><p>LATE WINTER/ EARLY SPRING</p><p>Panacur® POWERPAC or Moxidectin</p></div>				
<p>See Below   4</p>	<p>See Below   5</p>	<p>See Below   6</p>	<p>See Below   7</p>	<p>See Below   8</p>
<div><p>1</p><p>LATE WINTER/ EARLY SPRING</p><p>Panacur® POWERPAC</p></div> <div><p>2</p><p>SPRING</p><p>Ivermectin or Moxidectin</p></div> <div><p>3</p><p>EARLY FALL</p><p>Safe-Guard® Paste/ Equi-Bits®* or Panacur® Paste</p></div> <div><p>4</p><p>LATE FALL</p><p>Ivermectin or Moxidectin +/- Praziquantel</p></div>				
<p>See Below   6</p>	<p>See Below   7</p>	<p>See Below   8</p>	<p>See Below   9</p>	<p>See Below   10</p>
<div><p>1</p><p>LATE WINTER/ EARLY SPRING</p><p>Panacur® POWERPAC</p></div> <div><p>2</p><p>SPRING</p><p>Pyrantel Pamoate</p></div> <div><p>3</p><p>LATE FALL</p><p>Ivermectin or Moxidectin +/- Praziquantel</p></div>				
<p>See Below   6</p>	<p>See Below   7</p>	<p>See Below   8</p>	<p>See Below   9</p>	<p>See Below   10</p>
<div><p>Similar to adults, but age related. Concurrent health conditions may require a special program determined by your veterinarian.</p><p>CHECK with YOUR VET</p><p>BE SURE IT'S RIGHT FOR YOU.</p></div>				
<div><p>panacur® (fenbendazole) POWERPAC</p><p>panacur® POWERPAC</p></div>				

Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism. For complete safety information please read label. Do not use in horses intended for human consumption.

**Panacur®:** When using Panacur® (fenbendazole) Paste 10% concomitantly with trichlorfon, refer to the manufacturer's labels for use and cautions for trichlorfon.

**Safe-Guard®:** When using Safe-Guard® (fenbendazole) Paste 10% concomitantly with trichlorfon, refer to the manufacturers labels for use and cautions for trichlorfon.

© 2016 Intervet Inc., d/b/a Merck Animal Health, a subsidiary of Merck & Co., Inc. All rights reserved. EQ 3303-DewormingChart

1. A foal traveling with the mare on and off a large breeding farm or on a farm with many foals will likely need at least 5 treatments. Visit [www.GetDewormingRight.com](http://www.GetDewormingRight.com) for a sample program or consult your veterinarian.
2. It is strongly recommended that a fecal egg count be highlighted at weaning to see how effective the early deworming program has been.
3. For high-risk, high density operations, consider a Panacur® POWERPAC.
4. Optional depending on Fecal Egg Counts (FEC). It is strongly recommended that an FEC be highlighted at the end of spring grazing season. If FECs are still high, add an additional treatment during early or late summer.
5. Some adult high shedders may need an additional treatment in early summer if in an area where summers do not get that hot.
6. Horses in the Southern US should use the Panacur® larvicidal POWERPAC during the dormant season of late summer/early fall and a regular fenbendazole dosage during late winter/early spring. All horse owners should avoid using POWERPAC in the dead of winter.