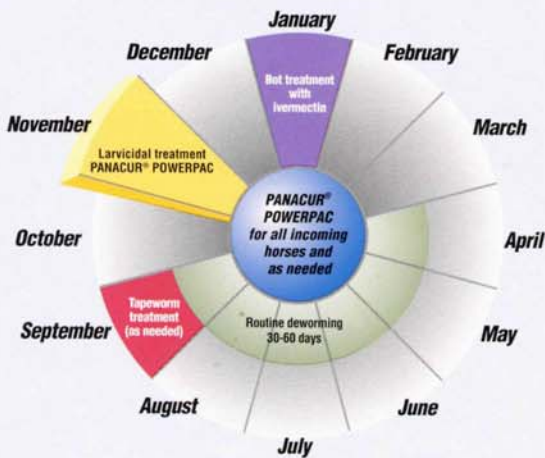


TIMING IS KEY

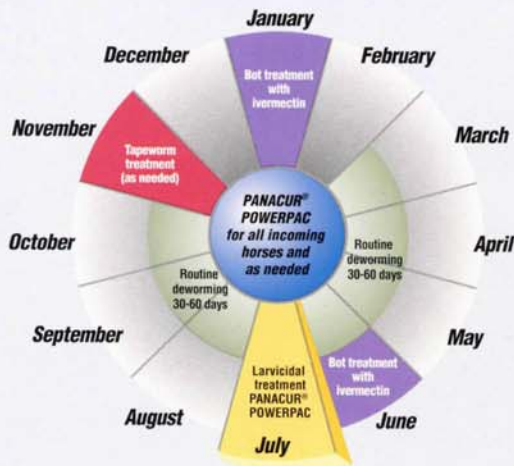
REGION 1



The climate and the region will determine the grazing period and will affect the parasite's life cycle — and identify if transmission is seasonal or year-round.



REGION 2

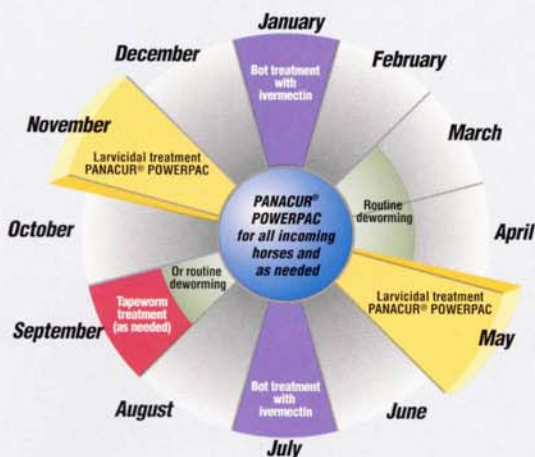


"When the grass turns brown, it's time for a larvicidal treatment."

The timing of the optimal program can be scheduled on these key elements.

- Larvicidal treatment with the PANACUR® POWERPAC for any new, incoming horse
- Use the PANACUR® POWERPAC as needed once or twice a year thereafter.
- Traditional presentations of PANACUR® may be incorporated during the grazing season for routine deworming needs.

REGION 3



The optimal worm control program is a flexible model based on parasite life cycles and climates. Since weather conditions can vary (e.g., drought), and because the map shown is not a definitive segmentation of the geographic regions, veterinary consultation is always necessary for design of individual programs.

includes wet/irrigated pastures

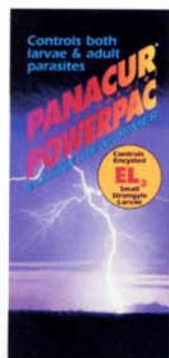
PANACUR® POWERPAC — Proven Effective

- Dosage: 10 mg/kg PO s.i.d. x 5 consecutive days* the PANACUR® POWERPAC has a high degree of efficacy against all stages of small strongyles.
- The PANACUR® POWERPAC is the **only** FDA-approved method of larvicidal treatment for encysted EL₃'s and L₃/L₄'s.
- Studies show the PANACUR® POWERPAC is 98% effective in killing hypobiotic encysted EL₃'s.
- PANACUR® POWERPAC also effectively controls arteritis caused by 4th stage larvae of *Strongylus vulgaris*, as well as large strongyles (*Strongylus edentatus*, *S. equinus*, *S. vulgaris*), pinworms (*Oxyuris equi*) and ascarids (*Parascaris equorum*).

*PANACUR® POWERPAC offers a complete course of treatment for a 1250 lb. horse.

PANACUR® (fenbendazole) — Proven Safe

- PANACUR® has long been recognized for its excellent safety profile in horses.
- PANACUR® is proven safe, with no adverse effects even after single doses as high as 1,000 mg/kg and doses as high as 50 mg/kg for up to 15 consecutive days.
- PANACUR® is also safe for use in foals and pregnant mares.



PANACUR®
(fenbendazole)
POWERPAC

Paste 10%
Larvicidal Treatment

For use in animals only.
NDC 12799-198-57

DESCRIPTION
PANACUR® (fenbendazole) Paste 10% contains the active anthelmintic fenbendazole. The chemical name of fenbendazole is methyl 5-(phenylthio)-2-benzimidazolecarbamate.

Each gram of PANACUR® (fenbendazole) Paste 10% contains 100 mg of fenbendazole and is flavored with artificial apple-cinnamon liquid.

ACTIONS
The antiparasitic action of PANACUR® (fenbendazole) Paste 10% is believed to be due to the inhibition of energy metabolism in the parasite.

INDICATIONS
PANACUR® (fenbendazole) Paste 10% is indicated for the control of large strongyles (*Strongylus edentatus*, *S. equinus*, *S. vulgaris*), encysted early third stage (hypobiotic), late third stage and fourth stage cyathostome larvae, small strongyles, pinworms (*Oxyuris equi*), ascarids (*Parascaris equorum*), and arteritis caused by 4th stage larvae of *Strongylus vulgaris* in horses.

PANACUR® (fenbendazole) Paste 10% is approved for use concomitantly with an approved form of trichlorfon. Trichlorfon is approved for the treatment of stomach bots (*Gasterophilus spp.*) in horses. Refer to the manufacturer's label for directions for use and cautions for trichlorfon.

CONTRAINDICATIONS
There are no known contraindications for the use of PANACUR® (fenbendazole) Paste 10% in horses.

PRECAUTIONS:

Side effects associated with PANACUR® (fenbendazole) Paste 10% could not be established in well-controlled safety studies in horses with single doses as high as 454 mg/lb. (1000 mg/kg) and 15 consecutive daily doses of 22.7 mg/lb. (50 mg/kg.) Particularly with higher doses, the lethal action of fenbendazole may cause the release of antigens by the dying parasites. This phenomenon may result in either a local or systemic hypersensitive reaction. As with any drug, these reactions should be treated symptomatically.

PANACUR® (fenbendazole) Paste 10% has been evaluated for safety in pregnant mares during all stages of gestation with doses as high as 11.4 mg/lb. (25 mg/kg) and in stallions with doses as high as 11.4 mg/lb. (25 mg/kg). No adverse effects on reproductivity were detected. The recommended dose for control of 4th stage larvae of *Strongylus vulgaris*, 4.6 mg/lb. (10mg/kg) daily for five consecutive days, has not been evaluated for safety in stallions or pregnant mares.

Internal Parasites: Regular deworming at intervals of six to eight weeks may be required due to the possibility of reinfection.

Migrating Tissue Parasites: In the case of 4th stage larvae of *Strongylus vulgaris*, treatment and retreatment should be based on the life cycle and the epidemiology. Treatment should be initiated in the spring and repeated in the fall after a six-month interval.

Optimum Deworming Program for Control of *S. vulgaris*: optimum reduction of *S. vulgaris* infections is achieved by reducing the infectivity of the pastures. When horses are running on pasture, in temperate North America, maximum pasture infectivity occurs in October-December. If horses are removed from those pastures in January, pasture infectivity will decline to zero by July 1. Egg production of *S. vulgaris* is minimal from January through April, peaking in August and declining to minimal in December.

Recommended Deworming Program: **
December 1, February 1, April 1, June 1, August 1, October 1.

The two treatments which are in bold type are the recommended periods when the 5-day treatment regimen for the control of the migrating larvae of *S. vulgaris* should be performed.

**For other areas in the world, retreatment periods for the migrating larvae of *S. vulgaris* may be different; consult with your veterinarian.

CAUTIONS: Keep this and all medication out of the reach of children.

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

WARNING: Do not use in horses intended for food.

Dosage: PANACUR® (fenbendazole) Paste 10% is administered orally at a rate of 2.3 mg/lb. (5mg/kg) for the control of large strongyles, small strongyles, and pinworms. One syringe will deworm a 2500 lb. horse. For foals and weanlings (less than 18 months of age) where ascarids are a common problem, the recommended dose is 4.6 mg/lb. (10mg/kg); one syringe will deworm a 1250 lb. horse. **For control of encysted early third stage (hypobiotic), late third stage and fourth stage cyathostome larvae, and fourth stage larvae of *Strongylus vulgaris* the recommended dose is 4.6 mg/lb. (10 mg/kg) daily for 5 consecutive days; administer one syringe for each 1250 lbs. body weight per day.**

SEE PRECAUTIONS FOR RETREATMENT RECOMMENDATIONS

DIRECTIONS FOR USE:

1. Determine the weight of the horse. 2. Remove syringe tip. 3. Turn the dial ring until the edge of the ring nearest the tip lines up with zero. 4. Depress plunger to advance paste to tip. 5. Now set the dial ring at the graduation nearest the weight of the horse (do not underdose). 6. Horse's mouth must be free of food. 7. Insert nozzle of syringe through the interdental space and deposit the paste on the back of the tongue by depressing the plunger.

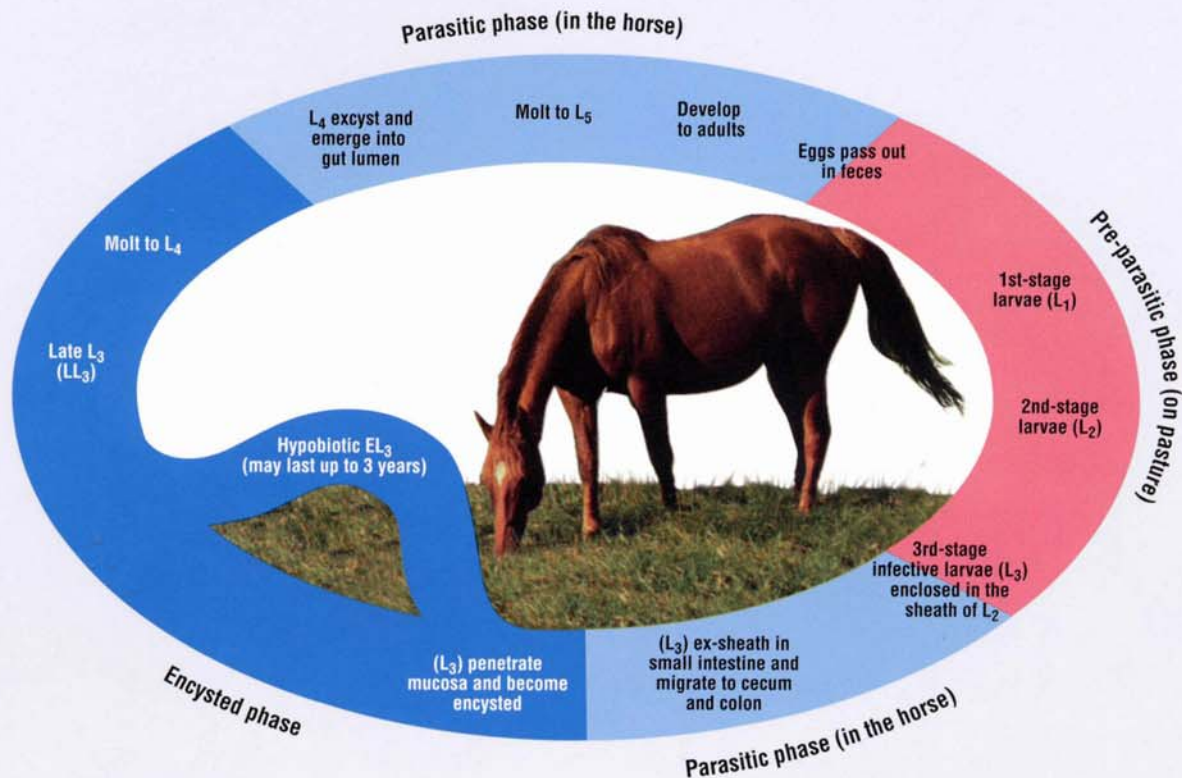
Product Code Number: PAN-471-57GM
Supplied: 5 x 57 g pac
Store at room temperature



Intervet Inc., 405 State Street, P.O. Box 318, Millsboro, DE 19966

1 DiPietro, Klei, Reinemeyer, AAEP Proceedings, Vol. 43, 1997, pp.343-344.
Data on file, Intervet, Inc.

800-835-0541
www.gidde-up.com



LARVAL CYATHOSTOMOSIS

ACUTE CLINICAL SIGNS

Listlessness, Weakness

Anorexia

Recurring Colic

Diarrhea

Weight Loss

Peripheral Edema

Death in Severe Cases

Hypobiosis can occur when survival conditions are unfavorable. However, larvae resume development with moderate temperatures and greener grass. Then, large numbers of larvae excyst *en masse*. This can involve thousands to millions of larvae exploding out of the gut wall, causing **severe damage to the intestinal mucosa.**

Even in lesser numbers, the damage caused as encysted small strongyles synchronously emerge from mucosal cysts in the intestinal lining can reduce the ability to absorb nutrients, impacting health and performance.

SUBCLINICAL SIGNS

Decreased Performance

Poor Feed Utilization

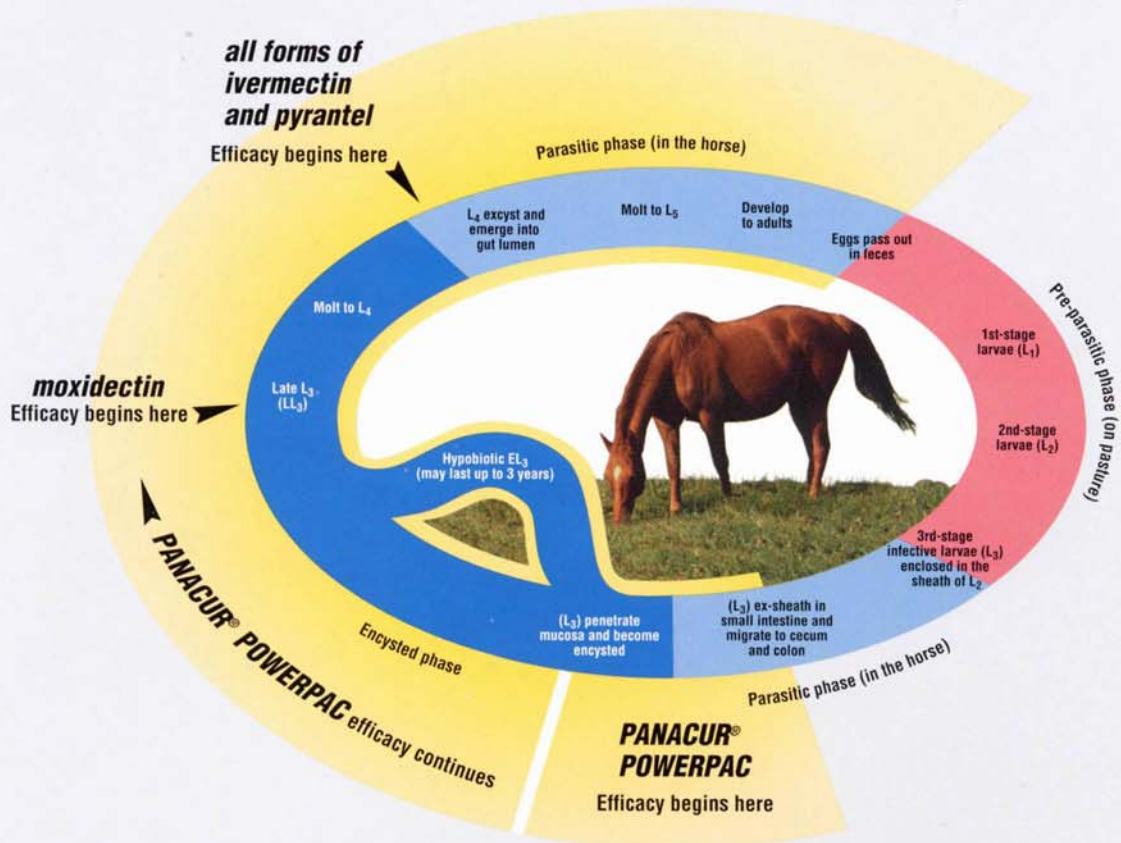
Dull Hair Coat

Unthriftiness

"Ain't Doin' Right"

CONTROL OF SMALL STRONGYLES

In northern temperate zones of the United States, the occurrence of larval cyathostomosis is typically between March and May. At any point during this time, a mixed population of hypobiotic encysted EL₃ and developing LL₃/L₄ stages can be found in the intestinal wall, along with adult worms in the lumen of the intestine. That's why it's so important to use the PANACUR® POWERPAC, which has activity against **all stages** of small strongyles and successfully controls larval cyathostomosis.

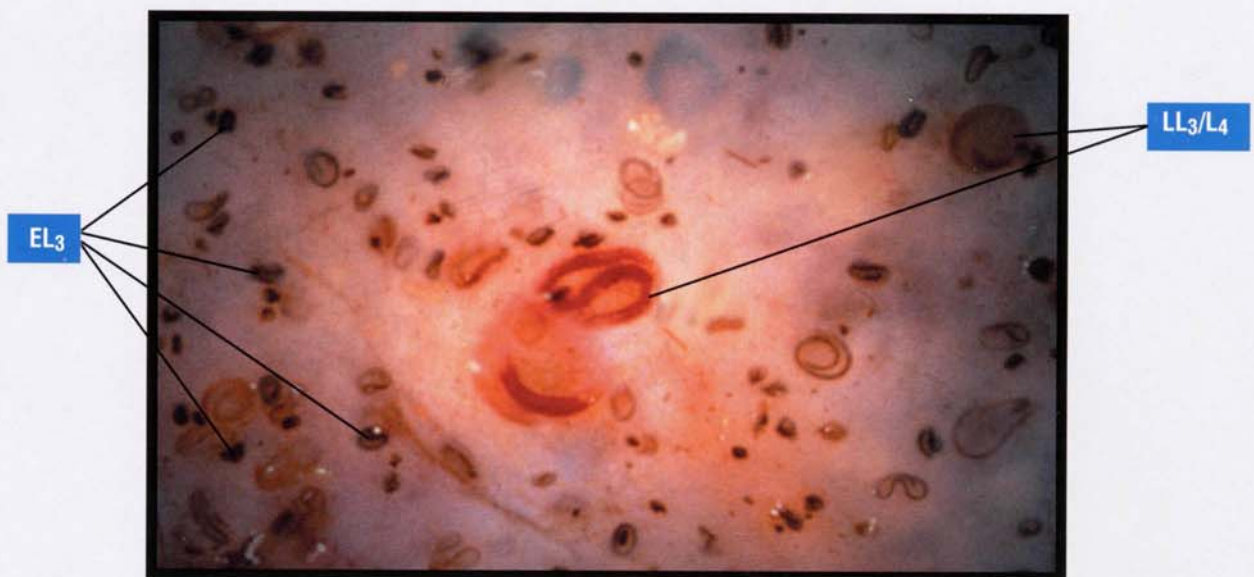


- Studies in Illinois, Louisiana and Tennessee, all using the same protocol, showed larvicidal treatment with the PANACUR® POWERPAC provided a **98% reduction of encysted EL₃ larvae**, and as great as a **96% reduction in LL₃/L₄**. (DiPietro, Klei, Reinemeyer – 1997)
- Studies showed that ivermectin at the labeled dose (0.2 mg/kg), and at five times the labeled dose, has **limited effect** (0 to 42%) on mucosal larvae EL₃'s and LL₃/L₄. (Klei – 1993/Lyons – 1994)
- Moxidectin (Quest) was found to be effective against luminal larvae (L₄) and adult strongyles (L₅), but delivered **marginal** results against inhibited EL₃ larvae. (DiPietro – 1992/Bello – 1994)

THE LIFE CYCLE OF SMALL STRONGYLES

- Adult small strongyles lay eggs, which pass in the feces
- Eggs hatch and develop into third stage larvae (L_3)
- L_3 's are ingested with grass
- L_3 's penetrate the intestinal lining in as little as **6 hours**
- L_3 's encyst and become early third stage larvae (EL_3)
- Many encysted EL_3 's become hypobiotic (hypobiosis can last as long as **3 years**)
- Some EL_3 's will evolve into late third stage (LL_3) and on to fourth stage (L_4), excysting to the adult stage

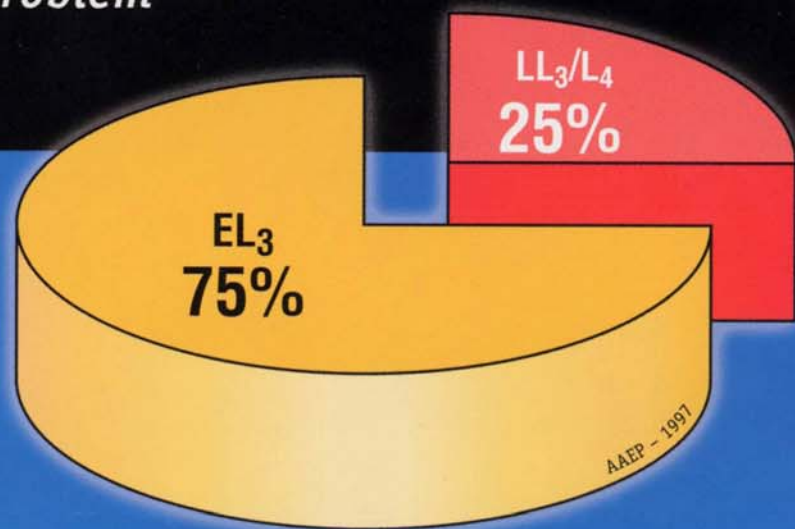
EL_3 STAGE — 75% OF THE PROBLEM



This transillumination of the large intestinal mucosa clearly shows that EL_3 larvae dominate the intestinal lining, while LL_3/L_4 's represent a much smaller percentage of the worm burden.

PANACUR® POWERPAC Larvicidal Treatment

*The only way to fight the big problem
of encysted small strongyles*



SMALL STRONGYLES ARE THE #1 PARASITE PROBLEM IN HORSES

As common intestinal parasites, such as *Strongylus vulgaris*, are being effectively controlled by the routine use of anthelmintics, a new problem is emerging.

Today, parasitologists consider cyathostomes (small strongyles) to be the #1 nematode problem of horses. **In fact, small strongyles can account for up to 90% of the horse's total worm burden.**

Larval cyathostomosis, the disease caused by this group of helminths, can cause severe clinical signs and even death in extreme cases.

THE ENCYSTED EL₃ STAGE IS 75% OF THE PROBLEM

Controlled efficacy studies show that up to 75% of encysted small strongyles are early third stage larvae, EL₃'s, which can remain hypobiotic for up to three years.¹ These EL₃'s must be eliminated to prevent the detrimental effects of acute and subclinical larval cyathostomosis.

Products, like Quest™, that reduce only the number of LL₃'s/L₄'s offer little improvement over routine dewormers; and another product, Strongid® C 2X, actually recommends a larvicidal treatment before its use.