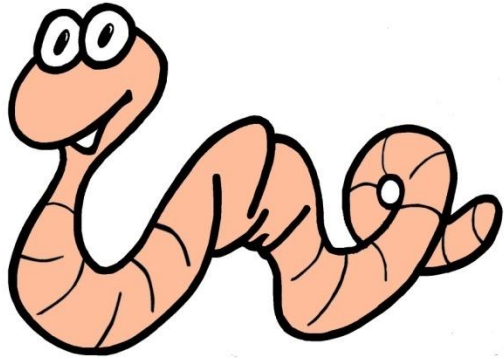




EQUINE PARASITES

DEFINITION:

- A parasite uses another living organism to live at the expense of that organism





HORSE HEALTH EDUCATION: PARASITES

OVERVIEW

Effects of internal parasites:

- **Lower the horse's resistance to infection**
- **Rob the horse of valuable nutrients**
- **Cause permanent damage to internal organs**

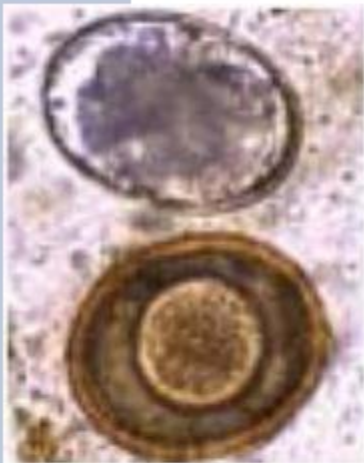
THE MAJOR OFFENDERS

- ◉ Strongyloides
- ◉ Roundworms
- ◉ Strongyles (*aka “redworms”*)
 - Large
 - Small (*aka cyanthastomes*)
- ◉ Tapeworms
- ◉ Pinworms
- ◉ Bots



HORSE HEALTH EDUCATION: PARASITES

LIFE CYCLE OF THE PARASITE

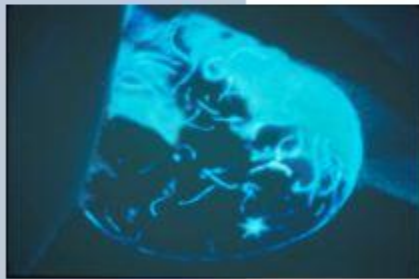


- Eggs
- Larvae (immature worms)
- Adults (mature worms)



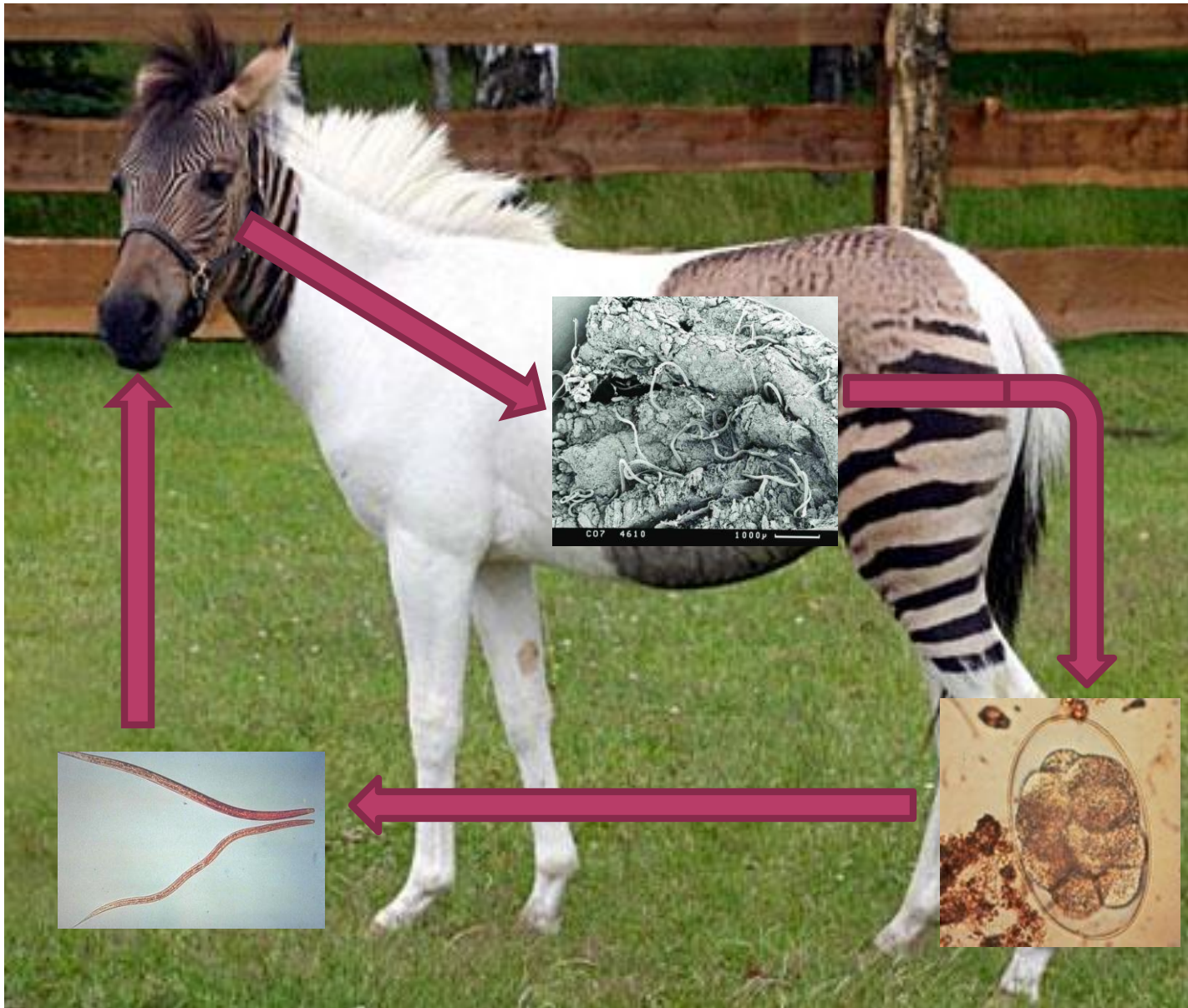
HORSE HEALTH EDUCATION: PARASITES

Water droplet on blade of grass containing parasites that will be consumed by grazing horse.



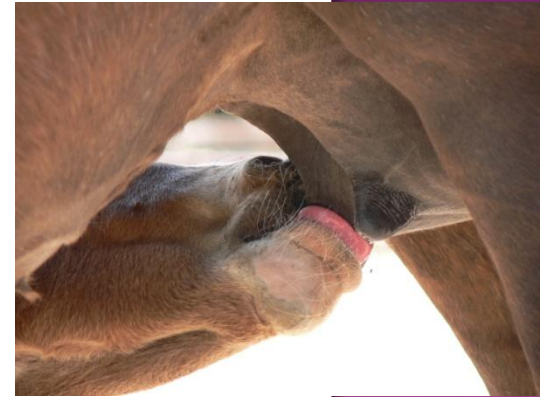
LIFE CYCLE OF THE PARASITE

- Eggs or larvae are deposited on the ground in the manure of an infected horse.
- They then develop in the environment; eventually being swallowed while the horse is grazing.
- Larvae then mature within the horse's digestive tract, with some parasites migrating into other tissues or organs before returning to the intestines to mature into egg-laying adults.



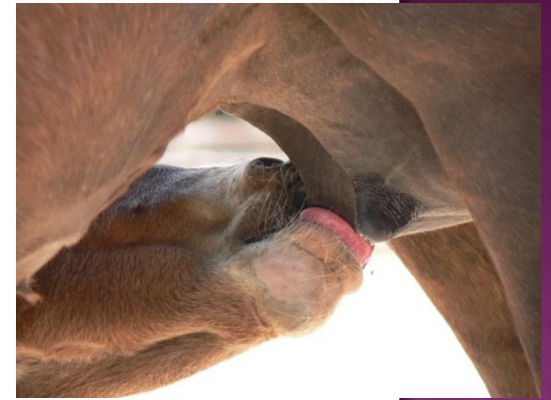
STRONGYLOIDES

- ◉ Name: *Strongyloides westeri*
“Threadworms”
- ◉ Adults live in *small intestine*
- ◉ Earliest patent infection seen in foals
 - Start to shed eggs ~ 2 weeks of age
 - May have diarrhea when shedding eggs



STRONGYLOIDES

- ◉ Infected mare sheds **larvae in milk**
- ◉ Very short prepatent period (4-6 days)
- ◉ Treatment: **ivermectin** (you can treat the mare at foaling to prevent transmission)



ROUNDWORMS (ASCARIDS)

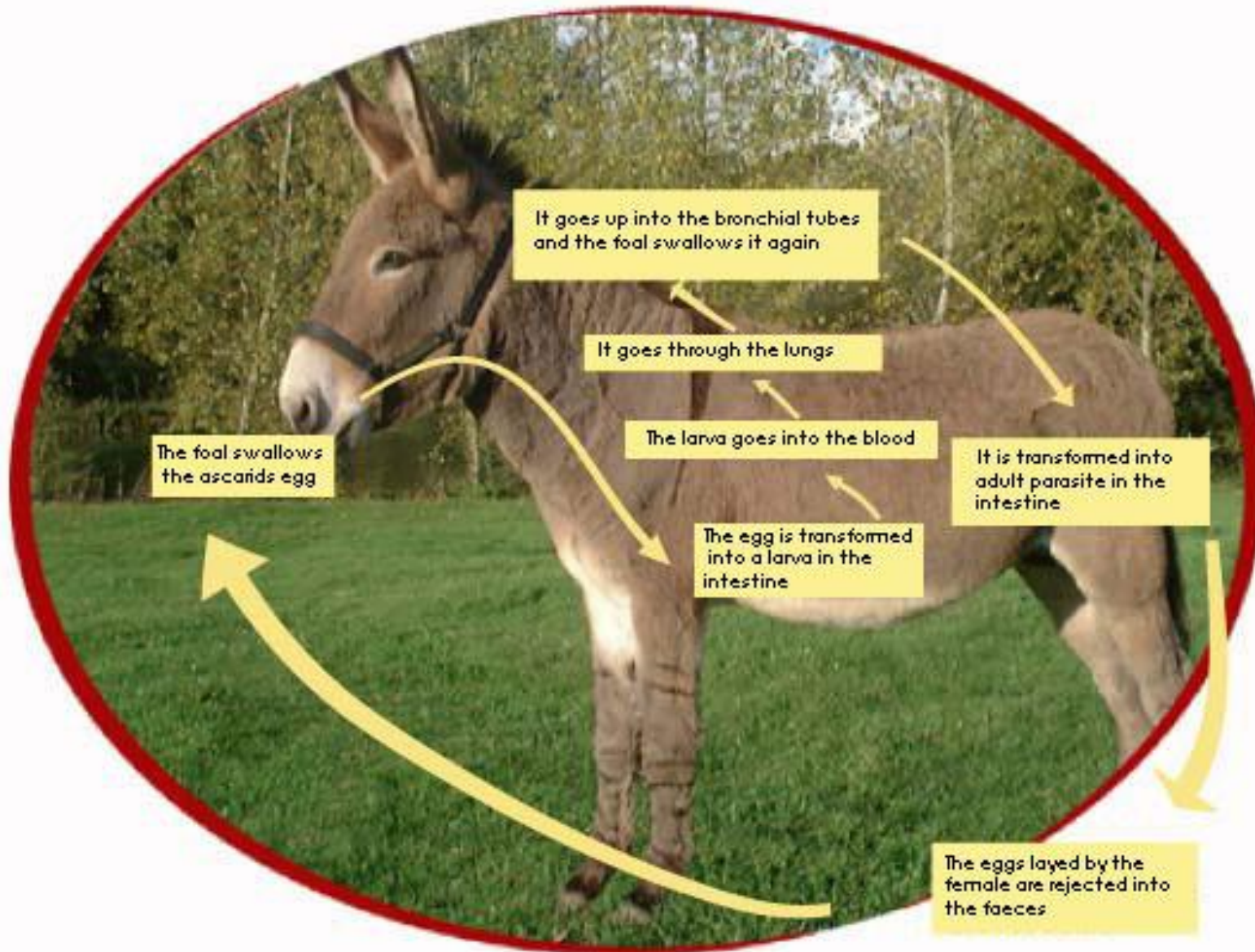


ROUNDWORMS

- ◉ Name: *Parascaris equorum*
- ◉ Most common in horses <2 years old
- ◉ Eggs can survive in environment for several years
- ◉ Tx: Deworm foals every 4-6 weeks
 - Double dose fenbendazole (Panacur)



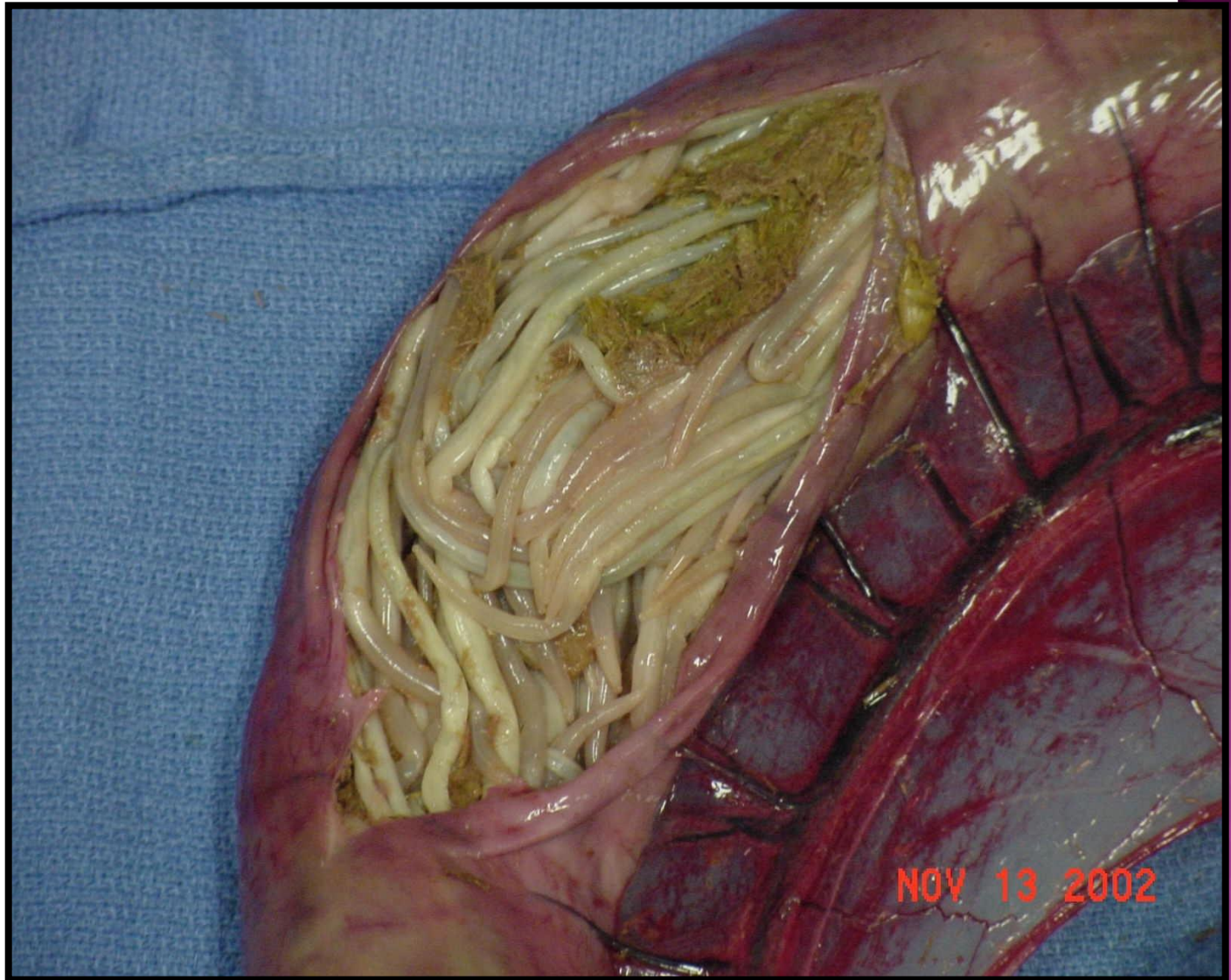
ROUNDWORMS (ASCARIDS)



ROUNDWORMS

- Potential clinical signs in young horses
 - Coughing
 - Rough hair coat
 - Poor body condition & growth
 - Pot belly
 - Colic
 - Foal >3 months old
 - Deworming for first time
 - Heavy infestation





Roundworm Impaction in Weanling

LARGE STRONGYLES

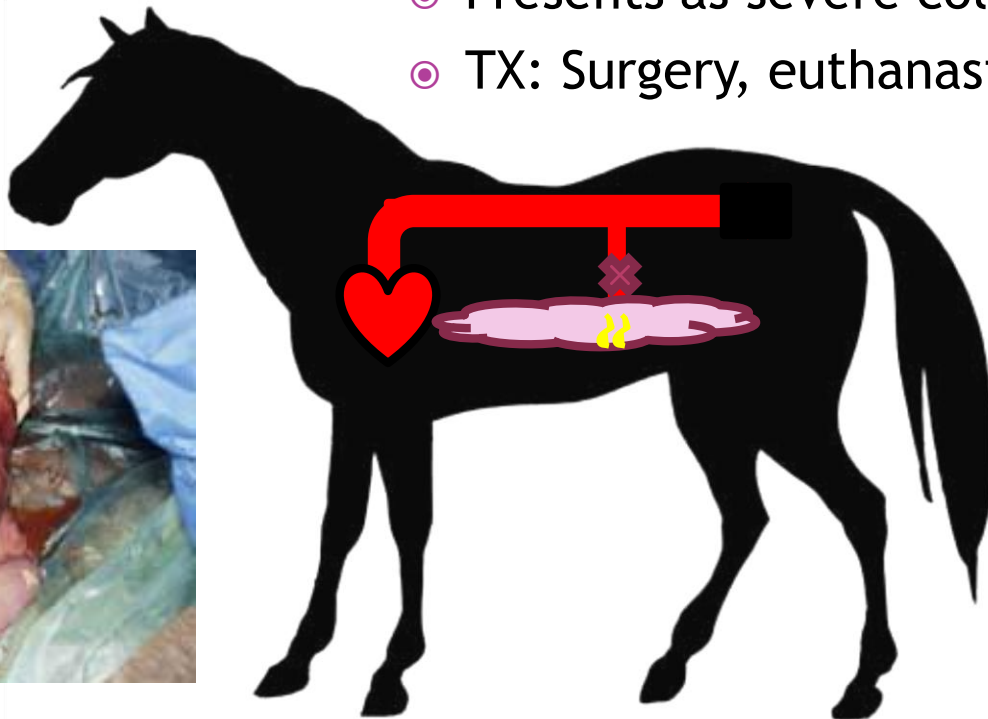
- ◉ Name: *Strongylus vulgaris*
- ◉ Affects cecum & colon
- ◉ Tx: Ivermectin
 - Current deworming programs → eliminated most problems with large strongyles



LARGE STRONGYLES

- ◉ Arterial migration part of life cycle
 - Larvae migrate thru arteries
 - ◉ Damage to arteries can lead to blood clots → infarction (blood supply to organ cut off and organ dies)

- ◉ Presents as severe colic
- ◉ TX: Surgery, euthanasia



SMALL STRONGYLES

- Cyanthostomes

- *Most common intestinal parasites in horses*

- Infect cecum and colon



SMALL STRONGYLES

- ◉ Encysted stage - burrow into lining of intestines; dormant for months; many dewormers ineffective
- ◉ Damage to intestines when larvae emerge
- ◉ Signs (not very specific):
 - slow growth in young horses,
 - poor hair coat,
 - colic, diarrhea, weight loss

SMALL STRONGYLES

- Ivermectin, Panacur® (*fenbendazole*) and Strongid® (*pyrantel*) may be used against adult worms in lumen.



- Evidence of strong resistance to drugs

- To kill encysted larvae in mucosa of intestine need to do a “Panacur Powerpac®” (twice the dose of Panacur® (*fenbendazole*) once a day for five days)



TAPEWORMS

- ◉ *Anoplocephala* spp.



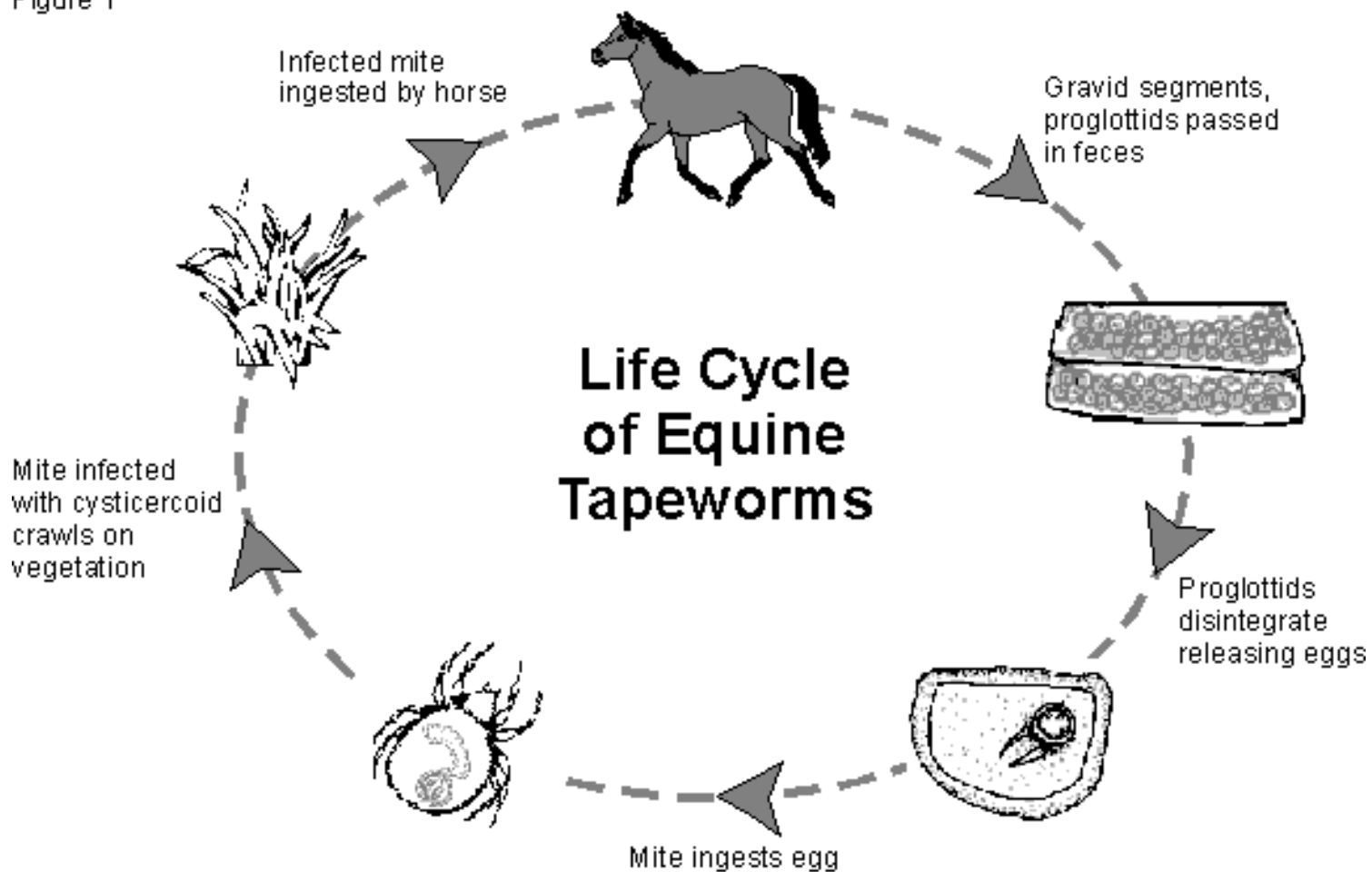
- ◉ Intermediate host = oribatid mite

- ◉ Horse ingests mite during grazing

- ◉ Usually do not see eggs on fecal

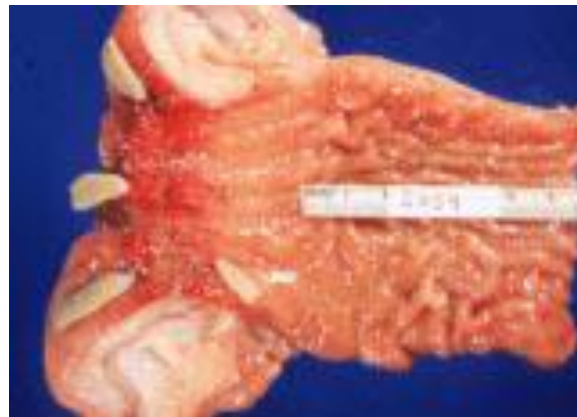


Figure 1



TAPEWORMS

- ◉ Commonly attach at the ileo-cecal junction
- ◉ Can cause spasmodic colic and possible intussusception (one section of the intestine goes into an adjacent section), and even impaction



TAPEWORMS

○ Tx:

- PRAZIQUANTEL
- Pyrantel (at two times the dose)

○ Recommendations vary:

- Once in Spring, once in Fall



Equimax: Abamectin and Praziquantel



Strongid: Pyrantel

× 2



Zimecterin: Ivermectin & Praziquantel



HORSE HEALTH EDUCATION: PARASITES

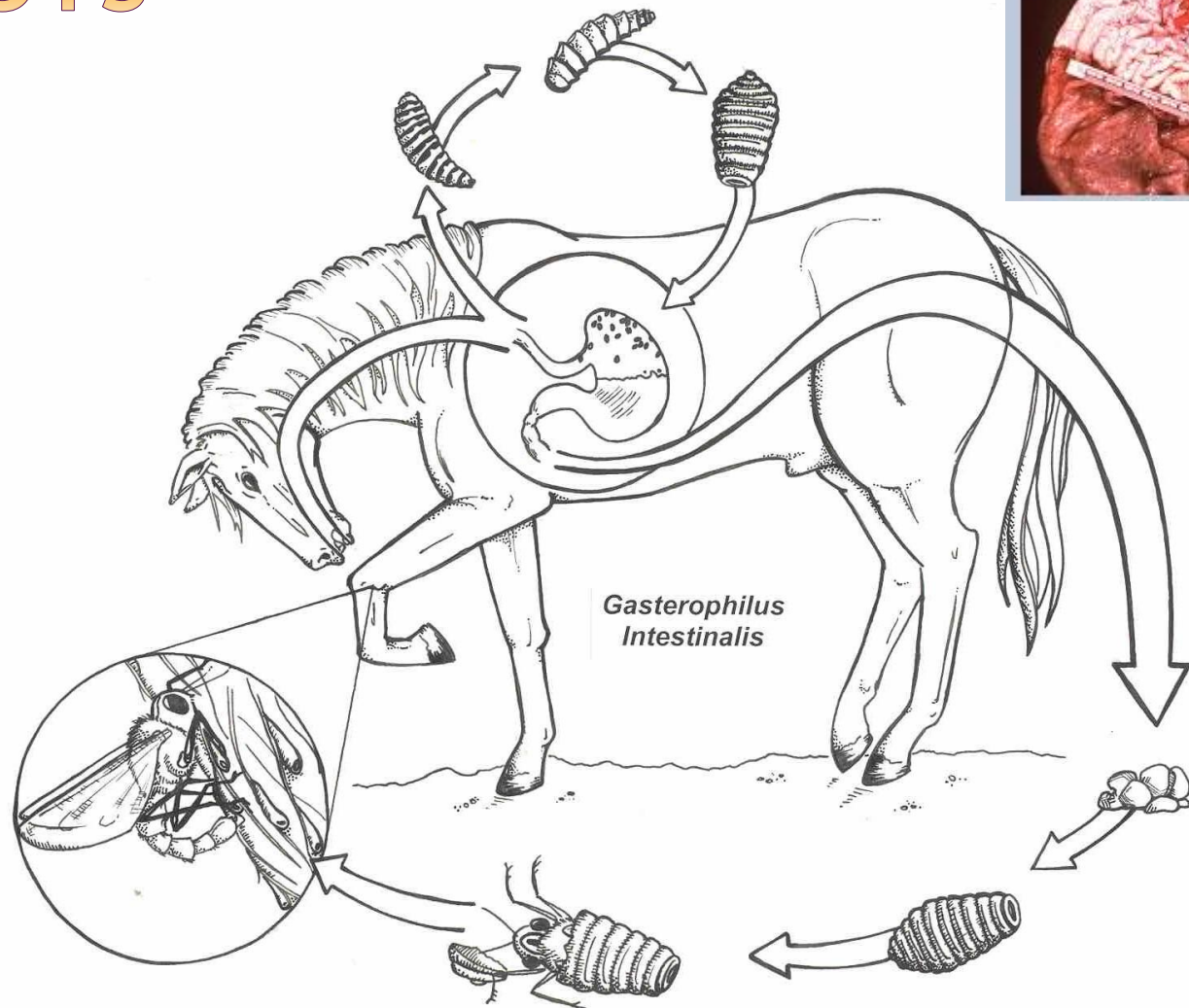
OTHER INTERNAL PARASITES



Lungworms – cause chronic coughing in horses, ponies and mules. Donkeys are the natural host of this parasite.

Pinworms – lay their eggs on the skin around the horse's anus, creating an irritation that causes the horse to repeatedly rub its tail.

BOTS



BOTS

- ⦿ Prevention: Fly spray, grooming
- ⦿ Treatment: Ivermectin, Moxidectin



WHAT IS A 'FECAL' TEST?

○ Fecal Egg Count

- Manure sample examined to estimate number of eggs being shed by individual horse
- Best to take samples from several horses to represent larger herds or do serial tests (2-4 x/year) on individual horses
 - 5 horses or 20% of the herd, whichever is bigger
- Can also do before and after deworming to evaluate effectiveness of medication
 - Effectiveness can vary from horse to horse depending on type of parasites and resistance levels
 - Some horses inherently more susceptible to heavy parasite loads

INTERPRETING A FECAL EXAM

- **A Negative Fecal \neq Parasite Free!**
 - May be before prepatent period (i.e. worm not producing eggs)
 - Eggs might be missed (e.g. tapeworms)
 - Lab error



HORSE HEALTH EDUCATION: PARASITES

DESIGNING A DEWORMING PROGRAM

There are three basic types of deworming programs:

1. *Continuous* – feeding a daily dewormer year-round or throughout the grazing season. This effectively prevents new infections from larvae picked up during grazing. This method does not kill bots.
2. *Interval* – deworming at regular intervals of 1,2 or 3 months, depending on the product and management system.
3. *Strategic* – deworming at only certain times of the year or when the fecal egg count rises.

Drug Name	Trade Names	Effective Against	Not Effective Against
Ivermectin	Eqvalan, Zimecterin	Large strongyles; adult small strongyles; bots; roundworms; pinworms; strongyloides	Encysted small strongyles
Moxidectin	Quest	Large strongyles; adult & some encysted small strongyles; bots; roundworms; pinworms	Some encysted small strongyles
Fenbendazole	Panacur	Large & small strongyles; pinworms; roundworms	Higher dose kills more encysted small strongyles
Praziquantel	Equimax, QuestPlus; Zimectrin Gold	Tapeworms	
Pyrantel	Strongid	Large & small strongyles; pinworms; roundworms	Double dose kills tapeworms

MANAGEMENT

- Minimize stocking density (# horses/acre)
- Do not feed directly on ground if possible
- Keep manure pile away from grazing pastures
- Periodically clear manure from pastures
 - 2+ times/ week for smaller sand/dirt lots
 - Rake larger pastures to expose parasites to heat and drying & rotate pastures
- Keep newborns/weanlings away from yearlings to decrease exposure to roundworms
- Remove bot eggs from hair
- Establish appropriate deworming program