Deworming Protocol

Some horses have poor immunity to parasites and subsequently shed large numbers of parasite eggs in their manure. In fact, 20-30% of the horses in the world are responsible for 80% of the parasite eggs in the environment.

It is time for a change in the world of equine deworming!

Our days of randomly deworming every 2 to 3 months on a rotating schedule need to stop. This plan of "fast rotational" deworming was developed in the 1960's, a time when it was common for horses to die of colic from parasite infection. Prior to that plan 90% of all colics were due to migrating large strongyles (a type of worm). The plan was successful – large strongyles are all but eradicated now and verminous colic is considered a rarity. However, equine parasites have risen to our challenge. Instead of heavy large strongyle populations, we now have heavy small strongyle populations. More importantly, widespread drug resistance is well documented in current equine parasite populations. Couple this with the knowledge that there are no new equine dewormers in development and it becomes quite clear, we must carefully preserve the effectiveness of the deworming drugs we have available to us!

Internal parasites are common for horses. Horses carrying parasites shed worm eggs in their manure, these eggs are inadvertently ingested by grazing horses. The eggs mature into adult worms inside the horse and eventually begin to shed more eggs onto the pasture, which begins the cycle all over again. We now know that horse's have a genetically programmed ability to be immune to heavy parasite loads. Most horses (50% of the population) are resistant to carrying parasites. However, some have poor immunity to parasites and subsequently shed large numbers of parasite eggs in their manure. In fact, 20-30% of the horses in the world are responsible for 80% of the parasite eggs in the environment.

Because of this individual immunity status, we can categorize horses as low, medium or high egg shedders once they have reached 3 years of age. This is done by performing a fecal egg count test (FEC). Specific deworming plans are assigned to each group. There is variability in the FEC test. Eggs are shed at variable rates throughout the day; and do not correlate with the exact number of worms inside the horse. However, this variability is negated by the use of shedding categories. About 15% of the horse population will alternate categories because they are based on their genetic immunity which has many variables. This is why we recommend running an FEC test every 6-12 months for up-to-date fecal category information.

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Deworming Protocol

Deworming Chemical Chart

Chemical Class	Drug Name	Brand Name	Notes on Use
Macrocylic Lactones	Ivermectin	Zimectrin Rotectin 1 Equimectrin Eqvalan Ivercide	Annually, Spring
	Moxidectin	Quest	Kills encysted small strongyles NOT to be used in horses under 6 months of age
Pyrimidines	Pyrantel Pamoate	Strongid Paste Rotectin 2	
	Pyrantel Tartate (daily)	Strongid C Strongid C2X	
	Pyrantel Tartate (single dose)	Manna Pro Kaeco	
Benzimidazoles	Fenbendazole	Safe Guard Panacur	Double weight dose given once daily for 5 days in a row will kill encysted small strongyles
	Oxibendazole	Anthelcide	
	Oxifendazole	Equicide, Benzelmin	
Pyrozines	Praziquantel	Equimax (ivermectin) Zimectrin Gold (ivermectin) Quest Plus (moxidectin)	Zimectrin Gold can be linked with allergic oral ulcer development and significant lip swelling

BROODMARES: No longer need to receive extra dewormings. They may follow their appropriate schedule based upon their egg shedding status.

Foal Deworming Chart

Month	Drug Name
2	Anthelcide
4	Strongid
6	Ivermectin
8	Anthelcide
10	Strongid
12	Ivermectin
1-3 Year	**Dewormed as high shedder**

FOALS: Because foals are extremely susceptible to parasites they need to be treated differently than adult horses. Foals should be dewormed starting at 2 months of age. They should be dewormed every 2 months until they turn one year old. At 2 & 8 months of age give Anthelcide Paste, at 4 &10 months of age give Strongid Paste and at 6 & 12 months of age give Ivermectin Paste. Ideally FEC tests would be done at 6 and 12 months of age on all foals. The roundworms (ascarids) they are most susceptible to have a high rate of resistance. If the FEC test showed repeatedly low levels, the foal deworming schedule could be reduced. Between their one and three year old years they should be placed on the high shedding deworming schedule. After three years of age they can be classified with a FEC test and subsequently use that schedule.

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UEFINESS CARE

Deworming Protocol

Wisconsin Deworming Schedule

Month	Low Shedder (<200 EPG)	Moderate Shedder (200-500 EPG)	High Shedder (>500 EPG)
April (FEC all Horses)	Moxidectin*	Moxidectin*	Moxidectin*
May			
June			
July		Benzimidazole and/or Pyrimidine	Benzimidazole and/or Pyrimidine
August			Ivermectin
September			
October (FEC all Horses)	Ivermectin & Praziquantel	Ivermectin & Praziquantel	Ivermectin & Praziquantel
November-March	Nothing necessary as it is too cold for transmission		

* A larvicidal (5 days of a double weight) dose of Fenbendazole may be substituted for Moxidectin.
* Consult with your veterinarian regarding Moxidectin use in foals, ponies and miniture horses.

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Deworming Protocol

Fecal Test Timing

The timing of a FEC test is very important with regards to recent deworming. Each dewormer has a specific egg reappearance period (ERP), or a period where no eggs should be seen in the manure because of the effectiveness of the drug. A FEC run prior to the end of the ERP for the drug used will have inaccurate results. The April and October FEC tests are important to categorize your horses and be certain we are effectively managing their worm burdens. We want to be sure those tests are run at specific times after dewormings for accuracy. The chart below represents the **minimum** wait period for gathering samples after deworming with that product.

Benzimidazole or Pyrimidine:
Test 6 weeks after dewormer is given

Ivermectin:
Test 8 weeks after dewormer is given

Moxidectin:
Test 12 weeks after dewormer is given

Sample Collection

1. Please let the office know in advance that you will be bringing samples in.
2. Place 2 FRESH fecal balls from the center of a manure pile in a ziploc bag.
3. Squeeze the air out of the bag before sealing.
4. Keep cold (refrigerated).
5. Please label the bag with your name, your horses' name and the date the sample was collected.

It is important to not only know what shedding category your horse falls into, but also if there is any drug resistance on your property. ***Horses are treated in their current shedding category.*** *Drug resistance can be determined by a series of calculations performed on specifically timed FEC tests.*

A complete parasite prevention program includes FEC testing and the appropriate use of dewormers, as well as pasture or environmental maintenance.

It is important that owners implement the following steps:

1. *Removing manure from pastures will significantly reduce your property's parasite burden and increase usable grazing space. When eggs are deposited on the pasture, they require nearly a week to mature before they can be infective to a horse. If manure is removed before they mature (weekly) it prevents the infection.*
2. *Dragging (harrowing) pastures to disperse manure is only helpful in the hot summer months. Pastures should not be dragged after Oct. 1st.*
3. *Do not spread manure on grazing pastures.*
4. *Do not overstock horses on pastures.*
5. *Try not to mix young and old horses.*

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