Strategic Deworming Plan

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- Colic
- Weight loss
- Diarrhea
- Respiratory disease: cough, pneumonia
- Poor hair coat
- Poor body condition
- Poor performance
- Pot belly
Equine Parasites

- Small Strongyles
- Large Strongyles
- Ascarids (Roundworms)
- Tapeworms
- Bots
- Pin worms
Parasites that challenge horses

Small Stronglyyes

Encysted stages damage intestinal walls
Large Strongyloles

Damage blood supply to intestines (aneurysms)
Parasites that challenge horses

Roundworms (Ascarids)

Migrate through the liver and lungs
Ascarid (roundworm) life cycle

Life Cycle of *P. equorum*

- **Prepatent Period**
  - 12-15 weeks

- **Small Intestine**
  - Week 3

- **Lungs**
  - Week 2

- **Liver**
  - Week 1

- **Parasitic Life Cycle**

- **Free-living Life Cycle**
Parasites that challenge horses

Tapeworms

Damage intestinal wall at the junction of the small intestine and cecum
Parasites that challenge horses

Bots

Pin Worms
Which Dewormer? When?
Past Recommendations

- Deworm horses every 6-8 weeks
- Rotate between deworming products
Strategic Deworming Plan
Goals of the plan

1. **Identify** each horses *parasite load*

2. **Group** each horse into one of the three classes of parasite egg shedding

3. **Customize** a deworming schedule for each individual horse
Why Change?

- Optimize the health and performance of our horses (less colic and better BCS)
- Reduce the number of annual treatments for many horses on the farm
Why Change?

- Save money
- Control parasites more effectively
- Slow the development of resistance
What does Equus need to start your horse on the program?

1. Fecal (manure) sample

2. Information
   - The **date** you last dewormed.
   - The **name** of the dewormer you used.
   - The **age** of your horse.
What is different about fecals now compared to the past?
Fecals
Fecal egg count

Count the number of eggs per gram of feces
How much manure for a fecal?

- Two manure balls

Too much

Correct
How do I properly bring in a sample?

- Fresh sample
- Ziploc bag without air
- Label with horse name
- +/- Refrigerate

[Image of a plastic bag labeled "Rocky"]
When to bring in a fecal?
There are many different deworming products on the market with varying degrees of efficacy and safety. Choosing the correct dewormer can be confusing and frustrating for horse owners. The doctors at Equus Veterinary Service will customize a schedule for each horse, keeping in mind multiple risk factors and the climate in the Pacific Northwest. Different classes of deworming products will be used to help prevent parasite resistance, resulting in a healthier horse.
After the fecal we classify your horse

**Low shedder:** fecal egg count <200 EPG

**Moderate Shedder:** fecal egg count 200 - 500 EPG

**High Shedder:** fecal egg count >500 EPG
Egg shedding classes

- **Low shedder:** ~ 50% of the herd
  - Deworm 2 times per year

- **Moderate shedder:** ~ 30% of the herd
  - Deworm 3 times per year

- **High shedder:** ~ 20% of the herd
  - Deworm 4 times per year
Facts

- **High shedders:**
  
  20% of the horses in a herd distribute
  
  >80% of the parasites on the pasture

  Key is to focus deworming efforts on the high shedders!!

- **Low shedders:**
  
  Innate or acquired ability to control parasite infections
Strategic Deworming Schedule

Client _______________________  Date ____________
Acct # _______________________

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**How to test for resistance to a dewormer:**

Step 1: Fecal egg count needs to be above 100 eggs per gram.
Step 2: Deworm with the scheduled product as recommended by Equus.
Step 3: Wait **14 days**, then bring in a fresh fecal sample.
Step 4: The reduction in eggs per gram determines if the dewormer is effective.

Less than 90% reduction suggests resistance to that dewormer.
**Strategic Deworming Schedule**

Client __John Smith_________  Date __3/2/10__

Acct # __12345_________

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Program 1: Low Shedder (FEC <200)
Program 2: Moderate Shedder (FEC 200-500)
Program 3: High Shedder (FEC >500)
Program 4: Daily Dewormer

How to test for resistance to a dewormer:

1. **Fecal egg count needs to be above 100 eggs per gram.**
2. **Deworm with the scheduled product as recommended by Equus.**
3. **Wait 14 days,** then bring in a fresh fecal sample.
4. **The reduction in eggs per gram determines if the dewormer is effective.**

Less than 90% reduction suggests resistance to that dewormer.
Strategic Deworming

- Two groups
  1. Adult horses (> 2 years old)
  2. Juveniles (< 2 years old)
Foals and Juveniles

- Start deworming at 2 months old
- Deworm every 3 months - rotating dewormers as scheduled by Equus
- Quest: add to rotation after 8 months of age
- Fecals every 6 months before deworming
- At 2 years of age – start Strategic Deworming Plan
Fecal Cost?

- $18.00
- Includes:
  - Initial fecal
  - “Free” second fecal in 14 days if the first fecal egg count is greater than 100 eggs per gram
  - Customized deworming plan
Parasite resistance to deworming products is a major issue in horses
Resistance

- The ability of a parasite to withstand the standard lethal dose of a worming medication and continue to survive and reproduce

- How does it develop?
  1. Deworming with only one type of product over and over again
  2. Deworming at the wrong times for the individual horse
Small Strongyle Resistance: southeastern US

- > 95% resistance to benzimidazole class (i.e. Panacur, Anthelcide)
- 50% resistance to the pyrimidine class (i.e. Strongid)
- Only Ivermectin and Quest are still consistently effective
How do we detect resistance?

- We want to test each dewormer on your farm

- Fecal egg count is >100 eggs per gram

- Equus will recommend the proper dewormer

- Equus will recheck the fecal egg count **14 days** after you give the dewormer
**Resistance?**

- **Dewormer is effective**
  - FEC $>90\%$ reduction for Strongid and Panacur
  - For example: 200 EPG reduced to 20 EPG
  - FEC $>95-98\%$ reduction for Ivermectin and Quest

- **FEC 80-90\% reduction $\rightarrow$ retest**

- **FEC $<80\%$ reduction $\rightarrow$ dewormer is not effective and the parasites are resistant**
  - This dewormer should no longer be used *alone* on the farm
Parasite Facts

- Water droplet on a blade of grass
- Parasite larvae that horses consume during grazing

Strongyle parasites are transmitted almost exclusively by pasture
Pasture tips

- Remove all feces at least twice weekly
- Avoid overpopulating pastures: 1 horse/1-2 acres
- Do not spread raw manure on the pasture (compost first)
- Rotate grazing from one pasture to the next
Harrowing or dragging pastures

- OK for unoccupied pastures
- Best when temperatures are >85°F
- Leave pasture empty for several weeks before turning horses out
- Do not harrow occupied pastures
Parasite Larvae: survival?

- Develop between 45-85°F
- No such thing as a “killing frost”
- Larva will survive in cold and freezing temperatures (even under snow)
- Larva die rapidly in temperatures >90°F
- Peak times of transmission: Spring & Fall
Quarantine
Quarantine

- All new horses need to be quarantined for at least 48 hours, ideally 2-3 weeks

- Perform fecals on each horse

- Based on their fecal Equus will recommend the proper dewormer

- The quarantine period allows enough time for the dewormer to take effect
Weight Tape
Take Home Message

- Fecal test each horse
- Equus will design your yearly deworming plan
- Spend less money
- Do a better job controlling parasites in your horse and on your farm
Questions?