

## McMasters Technique & LA Parasite Ova

**What you should accomplish during Lab.**

1. After an introduction, students, working in pairs, will prepare and examine a **McMasters Technique, Determine FEC and Determine % Efficacy**
2. Be able to identify parasite ova & oocysts commonly found in ruminant, equine, and swine feces.

### McMaster's Quantitation Technique

- 1) Fill McMaster's Graduated Vial (clear vial with 2 lines) to the bottom line with flotation solution (= 26 mls).
  - 2) Add feces, about 4 gm, until the fluid level rises to the top line.
  - 3) Pour this mixture into a clean beaker and mix thoroughly.
  - 4) Pour mixture through a strainer into a 2<sup>nd</sup> clean beaker.
  - 5) Mix strained mixture by pouring mixture from beaker to beaker a few times.
  - 6) Withdraw a small amount of the well-mixed suspension with a pipette and load this into one side of the McMaster's counting chamber.
  - 7) Mix suspension again by pouring mixture from beaker to beaker a few times.
  - 8) Again, withdraw a small amount of the well-mixed suspension with a pipette and load the second side of the McMaster's counting chamber.
  - 9) Wait 1 minute for eggs to rise to the top of the chamber.
  - 10) Focus on the lines of the McMaster's chamber with 4X, then examine the chamber with 10X. (Scan for ova).
  - 11) Examine the entire ruled area, counting all the eggs within the ruled areas
  - 12) Add the total egg from each side of the chamber.
  - 13) Multiply the sum of the 2 chambers by 25 to determine the eggs per gram (epg).
- Note: The McMaster's Quantitation Techniques is mainly for the quantitation of Strongyle-type ova, thus only strongyle-type eggs should be counted. However, a general idea (i.e. none, few, many...) of the number of other nematode ova, cestode ova & coccidian oocysts should be noted.
  - Note: The McMaster's Chambers can **NOT** be examined with the 40X or 100X objectives.

## Exercises

### 1. Fecal Egg Count & Fecal Floatation.

- a) Perform a McMasters on the provided feces.
  - i. Count the number of strongyle-type eggs in each grid.
- b) Determine and record the resulting FEC.

(Grid A: \_\_\_\_\_ + Grid B: \_\_\_\_\_) X 25 = \_\_\_\_\_ epg

- c) **Perform a Fecal Floatation with the strained fecal suspension.**

### 2. % Efficacy

- a) A fecal was collected at the time of deworming with Fenbendazole. At that time, a McMasters was performed and the pre-FEC was \_\_\_\_\_ epg. (pre-FEC will be provided by the instructor)
- b) **Twelve days later** a Post-Treatment fecal was collected. Assume your results from today's lab is the Post-Treatment fecal.
- c) Utilizing the % Efficacy formula and determine if the dewormer was effective or is showing resistance.

The formula for determining efficacy of an anthelmintic is:

$$\% \text{ Efficacy} = [(pre-FEC - Post-FEC) / pre-FEC] \times 100$$

$$\% \text{ Efficacy} = \text{_____} \%$$

- i. % Efficacy of >95% is considered Efficacious
- ii. % Efficacy of <95% is considered Not Efficacious.

## Results

1. Which fecal sample did you examine:

\_\_\_\_\_ (Goat, Sheep, or Horse)

2. The FEC: \_\_\_\_\_ epg.

3. % Efficacy: \_\_\_\_\_%

Resistance: Yes or No

4. List the Parasite ova / oocysts that you found.

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## To Study

1. Observe specimens of parasite diagnostic stages presented on the overhead monitors.
  - Utilize this lab and the Parasitology Website to learn these diagnostic stages as one will be responsible for identifying these on the Final Exam.

### Ruminant

Oocysts: *Eimeria*.

Ova: *Strongyle-type*, *Nematodirus*, *Strongyloides*, *Trichuris*, *Moniezia*, *Fasciola*.

### Equine

Ova: *Strongyle-type*, *Strongyloides*, *Parascaris*, *Oxyuris*, *Anoplocephala*.

### Swine

Oocysts: *Eimeria*, *Cystoisopora*

Ova: *Strongyle-type*, *Strongyloides*, *Ascaris*, *Trichuris*

The Links for the Parasitology Website Diagnostic Keys are:

[https://parasitology.cvm.ncsu.edu/vet900/m\\_keys.html](https://parasitology.cvm.ncsu.edu/vet900/m_keys.html)

[https://parasitology.cvm.ncsu.edu/vet900/w\\_keys.html](https://parasitology.cvm.ncsu.edu/vet900/w_keys.html)

<https://parasitology.cvm.ncsu.edu/vet900/quiz.html>

Even though there are other parasites on the keys: **YOU ARE ONLY RESPONSIBLE FOR THE DIAGNOSTIC STAGES LISTED ABOVE.**

On The Exam you will be given the source of the specimen.

Example: "Dog Feces"