Lab #3
McMasters & Ruminant Parasite Ova

What you should accomplish during Lab #3.

1. A description of the laboratory organization.
2. After an introduction, students will prepare and examine a **McMasters Technique**
3. Be able to Identify parasite ova & oocysts commonly found in ruminant feces.

LABORATORY ORGANIZATION

- Parasitology drawers with supplies.

LABORATORY SUPPLIES

Some supplies that are used during the lab are listed below. Please note the "disposable supplies" versus the supplies that need to be retained.

Non-Disposable Supplies

1. McMaster's counting chamber
2. McMaster's measuring vial
3. Plastic cups
4. Tea strainers
5. Microscope slide box
6. Sodium nitrate containers
7. Test tube racks
8. Plastic Transfer Pipettes ←**(***Do Not Dispose***)**
9. Flotation vials (brown) ←**(***Do Not Dispose***)**
10. Centrifuge tubes ←**(***Do Not Dispose***)**

Disposable

1. Wooden applicator sticks
2. Wooden tongue depressors
3. Glass slides & Cover slips

Technique

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 2nd 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 Worm Egg Count & Fecal Floatation.**
   a) Perform a McMasters on the provided goat feces.
      i. Count the number of strongyle-type eggs in each grid.

   b) Determine and record the resulting FWEC.

      (Grid A: _____ + Grid B: _____) X 25 = _____ epg

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

2. Examine specimens of parasite diagnostic stages presented on the overhead monitors.

   Oocysts: *Eimeria*.

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

   Utilize this lab and the Parasitology website to learn these diagnostic stages as one will be responsible for identifying these on the Lab Practical.

Lab #3
Laboratory Discussion
Complete and turn in as directed.

1. The FWEC: _____ epg.

2. List the Parasite ova / oocysts that you found in the goat feces.

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