Modified McMaster's Fecal Egg Counting Technique

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Equipment Needed:

- 100 x microscope with mechanical stage
- mixing vial: marked with 2 lines (one line marking 26 ml; one line marking 30 ml)
- McMaster's counting slide with 2 chambers**; chalex corp – www.vetslides.com** **($20** each - get green grid lines)
  - Or regular microscope slides and cover slips
- Tongue depressors or other tool for mixing
- Plastic cups
- Tea strainer; **Wal-mart**
- Medicine droppers or small syringes
- Flotation solution – saturated salt solution (you can make it or buy **"Fecasol"** online)
- Feces – must be fresh or refrigerated less than one week. If the feces are exposed to warm temperatures for a period of time, the eggs will hatch.

Preparation of Saturated Salt Solution (you will be able to analyze 80 samples):

1. Purchase "Morton Canning and Pickling Salt" at Food Lion (4 lb box)
2. Fill up a container with 2.5 quarts of warm tap water
3. Add 2.0 lb of salt
4. Stir the solution for a few minutes to help dissolve the salt
5. Let the solution settle and sit for a day (there will be salt that does not get dissolved…that is OK)
6. When the solution is not cloudy anymore, pour off the liquid into another properly labeled container
7. Discard the salt

Collection of fecal sample:

1. Restrain goat
2. Apply lubricating jelly to gloved finger
3. Insert index finger into goat's hind end
4. Retrieve approximately 10-15 pellets
5. Place sample in labeled plastic fecal cup
6. Place cup on ice in a cooler
7. Once you get to the lab, transfer all samples to the refrigerator (do not let them sit in the cooler because the ice melts and the water may get into fecal cups)

If you just want to see eggs and not count them, do this:

1. Add about 4 pellets (2 grams) to a pill bottle
2. Add salt solution until the bottle is filled ¾ way
3. With a tongue depressor, crush the pellets and mix the solution
4. Pour solution and pellets through a tea strainer into plastic cup
5. Transfer solution back into the pill bottle and discard solid feces
6. Add salt solution until it reaches the top of the bottle
7. Put a cover slip on top of the bottle
   (if the solution does not touch the cover slip, add more solution with an eye dropper)

8. Wait 15 minutes for the eggs to float to the top
9. Carefully take the cover slip off and place on a microscope slide

If you want to count the eggs, do this:

1. Weigh out 4 g of feces into a clean labeled fecal cup
2. Add flotation solution exactly up to the bottom line of the mixing vial (26 milliliters).
3. Add the solution to the 4 g of feces
4. Use a tongue depressor to crush the feces and to mix the feces well into solution.
5. Pour the solution through a tea strainer into a clean cup.
6. After letting the solution strain for a few minutes, tap the strainer against the cup until you just have a ball of feces left in the cup
7. Discard feces
8. Using a dropper or syringe, constantly stir the solution 30 times. Then immediately draw up solution from the TOP of the mixture.
9. Fill one chamber of the slide with the sample in the dropper or syringe by placing the syringe tip at the edge of the slide and discharging sufficient sample between the upper and lower slides to fill the area under the grid.
10. Repeat steps 6 & 7 to fill the second chamber of the slide with a different drawn sample.
11. Allow the slide to sit long enough to allow the eggs to float to the top, near the gridlines (5-10 minutes). If allowed to sit too long, the eggs will fall away from the gridlines.
12. Place the slide on the microscope.

Note: Sometimes you will only have enough sample to weigh out 2 g OR the fecal solution may be too dark and you will need to rerun it with only 2 g of sample. You will need to measure out 28 millilitersl of flotation solution (this is in the middle of the lines on the mixing vial). You will also need to multiply your grid count by 50 to calculate eggs per gram feces (epg).

Examination Under Microscope at 100X:

1. Focus on the grid.
2. Count eggs inside and under the grid lines.
3. Record the number of eggs for each grid.

Calculations of EPG:

1. Add together the number of eggs counted under each of the two grids. Always use both grids.
2. Multiply their sum by 25
3. Example:

Step 1: Grid 1 has 10 eggs. Grid 2 has 11 eggs.
Step 2: 10+11=21
Step 3: Multiply 25 X 21 = 525
Step 4: EPG for this sample = 525

Cleanup of Materials:

- Rinse all materials used for the slide preparation with tap water between each sample. If reusing the dropper or syringe, rinse with flotation solution after rinsing with tap water.
- You can apply acetone to fecal cups to erase sharpie marker
- **DO NOT** apply acetone near McMaster slides as this will cause them to become cloudy and unusable!

- Before putting materials away for an extended period of time, wash them with warm, soapy water, rinse with tap water, then rinse with deionized water.