

How to Identify and Monitor Internal Parasites in your Small Ruminant Herd

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What is the Difference Between a Fecal Floatation Test and a Fecal Egg Count Test?

A fecal floatation test is more sensitive and will allow you to identify more types of parasites. You can use it to determine if animals are infected with *Haemonchus*, *Ostertagia*, or other types of intestinal parasites. The fecal floatation test helps to detect the presence of worm eggs but does not indicate the exact amount in a fecal sample. On the other hand, a fecal egg count test, which is more complicated to perform, detects the number of worm eggs in 1 gram of feces.

What You Will Need to Carry Out a Fecal Floatation Test:

Compound microscope (at least 10x magnification; 40x allows better identification)

Microscope slides

Microscope cover slips

Fecal floatation solution

Fecal floatation containers (may be washed and reused)

Stirring stick (coffee stirring sticks work well)

Strainer (3-4 inch diameter kitchen tea strainer)

Disposable cups (3-4 oz. wax coated work well)

Fecal Floatation Directions

1. Place 1 to 2 balls of feces into disposable cup (3 to 4 if young lambs/kids).
2. Mix with about 10 mL of fecal solution.
3. Stir mixture, breaking up and dissolving fecal pellet.
4. Using tea strainer, pour mixture through strainer into a separate cup.
5. Pour fluid contents into a fecal container.
6. Add fecal solution until fluid level is just above the container rim.
7. Place microscope cover slip on top of the container and let sample sit for 10 to 15 minutes (very important).
8. Carefully remove the microscope cover slip and place it on a microscope slide.
9. Place microscope slide on stage of the microscope and focus.
10. Search slide for parasite eggs or oocytes in a methodical direction from top to bottom and side to side.



Using a Microscope

Using a microscope, like many other things, takes practice.

1. Put the microscope slide on the stage.
2. Move the dials that move side to side and up and down until the sample is directly over the light source.
3. Adjust the eye pieces (codicils) to your comfort. First, focus on the lowest magnification. To do this, look through the eye pieces and adjust the course focus until the image appears (image may be blurry). Use the fine focus for further adjustments until image is seen clearly.
4. Assess the sample by moving across, down, and in rows to examine the entire slide.

Note:

It is prohibited by the Kentucky Board of Veterinary Examiners to diagnose disease in animals if you are not a licensed veterinarian. While doing fecal tests on your own animals is allowed and encouraged to detect and treat intestinal parasites in your herd, you CANNOT perform this service for other farmers if you are not a licensed veterinarian. http://www.cfsph.iastate.edu/FastFacts/pdfs/contagious_ecthyma_F.pdf

Identification charts are helpful to keep as a reference. You may get one from your local veterinarian.



Health Impact and Characteristics of Internal Parasites

Parasite	Approximate Length (µm)	Characteristics
Ostertagia (brown stomach worm)	60-70	Medium-sized, standard strongyle egg; barrel-shaped; oval; large number of blastomeres nearly fills egg
Haemonchus (barberpole worm)	85	Larger and rounder than Ostertagia egg; blastomeres more easily seen than in Ostertagia
Trichostrongylus (barberpole worm)	85	Often shaped like a kidney bean; one side is more rounded than the other; there is usually a lot of clear space within the egg
Cooperia (small intestinal worm)	75-85	Medium-sized egg with parallel sides and numerous blastomeres that are hard to distinguish
Nematodirus (threadworm)	200	Large egg looks like an American football with blastomeres inside; two to eight large blastomeres are surrounded by a fluid-filled cavity
Oesophagostomum (nodular worm)	95	Medium-sized to large egg; about one and a half times the size of the Ostertagia egg; 16 to 32 blastomeres; are easier to see than those of Haemonchus
Bunostomum (hookworm)	100	Medium-sized to large egg; four to eight blastomeres; sometimes the walls are thick and rectangular
Trichostrongylus (barberpole worm)	40-65	Small egg with a thin shell containing an L1 larva that can be seen under low power
Oesophagostomum (nodular worm)	75	Egg is shaped like an American football and has two protruding polar caps; the shell is double and thick
Trichuris (whipworm)	16-47	Coccidia appear small in size, pink in color; size and shapes vary depending on species
Strongyloides (threadworm)	80-80	Quadrangular; somewhat irregular; contains a circular or pear-shaped apparatus at one end
Coccidia (a protozoan that causes coccidiosis)	400	Rectal sample of feces needed for positive identification; L1 larva found in feces; flattened head and tail end in blunt point
Dictyocaulus (lungworm)	400	Rectal sample of feces needed for positive identification; L1 larva found in feces; flattened head and tail end in blunt point
Mite Egg - 1/4 actual size (nontoxicant - often mistaken for worm eggs)		

Modified Wisconsin Sugar Fecal Worm Egg Flotation Method

1. Measure 3 grams of fecal material into a 3.5 oz. paper cup.
2. Add 15ml sugar solution to fecal material.
3. Stir solution and fecal matter until material has even consistency.
4. Pour mixture into tea strainer and collect in 3.5 oz. cup.
5. Use a tongue depressor to press as much material through strainer as possible.
6. Pour strained mixture into a conical graduated 15 ml centrifuge tube.
7. Place tube into centrifuge at 800-1000 rpm for 5-7 mins.
8. Lift cover slip directly upward and immediately place on microscope slide.
9. Use microscope to scan entire cover slip for egg count.

1. Fecal samples can be stored for long periods if refrigerated (not frozen).
2. Sugar solution is prepared by adding 1 lb. of sugar into 12 fluid oz. (355 ml) of hot water; stir until all sugar is dissolved.
3. Slides can usually be placed in the refrigerator for several days prior to reading.
4. Identify parasites present:
 - +(-) 10 eggs/sample
 - +(-) 11-50 eggs/sample
 - +(-) over 50 eggs/sample
5. # of eggs found x 150 = # of eggs per pound feces
6. Materials needed:
 - a. Sugar solution plus dispensing bottle, gun, or syringe
 - b. Test tube rack
 - c. 3 oz. and 5 oz. Dixie cups
 - d. Tongue depressors
 - e. Taper bottom test tubes
 - f. Teal tube rack
 - g. Standard microscope slides
 - h. Centrifuge
 - i. Microscope