

THE USE OF FECAL EGG COUNTS AND A SIMPLE METHOD FOR FECAL EGG COUNT ESTIMATION

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Parasites affect the growth and health of sheep. If you raise sheep, you are aware of this problem, and you are probably on a worming program of some type. Fecal egg counts will help you quantify this problem, will help you monitor the effectiveness of your worming program, and will help you identify problems with reinfection or possibly resistance.

Collecting a few random samples of fresh sheep stool is a good place to start in quantifying the extent of your parasite problem. If you have 100 sheep, testing 10 to 15 separate samples should give a reasonable estimation of the level of parasite infection. Using the EGGS PLUS method of fecal egg counts, you can estimate the relative level of parasite infection in your flock.

It is difficult to get accurate estimations of eggs per gram of stool. There are a large number of these “techniques” available, however, all are subject to substantial error. Few parasites may produce many eggs and vice versa. Generally the best we can do is **estimate** worm burden by a quantitative egg count.

The EGGS PLUS method is a simple and easy estimate to arrive at. Using EGGS PLUS, a rate greater than 100 eggs per field indicates a substantial parasite problem. (See the EGGS PLUS procedure at the end of this paper.) Egg rates lower than 100 give you an idea of where you are, and will help formulate a plan for where you want to be.

When you are trying to decide if your worming program is effective post treatment, egg counts can be helpful. As you destroy internal parasites, the number of fecal eggs can be expected to decline. If 2+ is your “goal” then you can modify your program to change egg counts in favor of your goal. This means treating for the parasites in greatest quantities and using other factors that may generally reduce counts (such as environmental, contact, dry lots, etc.) If your fecal egg counts are consistently less than 10 per cover slip, you most likely have a very effective worming program.

When monitoring parasite infection, resistance to anthelmintics can be detected using fecal egg counts. Collecting serial egg counts at specific intervals will indicate trends in the production of parasites. The longer the time period information is acquired, the more accurate the trend assessment would be. A 3 week egg count interval (starting 1 week after worming) would be a close monitoring system. A 40 day egg count interval would be useful as well. If over time (6-8 months) the fecal egg count jumps from 1+ to 3+, resistance may be indicated.

Three things to consider in monitoring resistance are hypobiosis, reinfection, and periparturient rise. A rise in fecal egg counts may be due to one of these items rather than anthelmintic (wormer) resistance.

1. Periparturient rise: This is when fecal egg counts climb at lambing time. This is a well known occurrence and seems to favor the infection of new lambs who have little resistance to parasites.

2. Hypobiosis: The temporary cessation of larval development. Seasonal variations in environmental conditions which hamper the infectivity of a parasite can be avoided if they can encyst or arrest their development until conditions are right for transmission. For example, more parasites come out of their cysts during the spring months allowing for more chance of staying alive long enough to infect another animal.
3. Reinfection: The process of being reinfected with parasites. Reinfection sources may be an unprotected swamp or exposure to a non-treated group of animals or pasture.

Procedure for fecal egg counts

Eggs plus method:

1. Collect a representative sample from the livestock involved. Five grams (a sample the size of the end of your thumb from the tip to first joint.)
2. Strain through a small kitchen strainer
3. Centrifuge at approximately 2000 rpm for 3 minutes
4. Transfer the top layer of material to a slide and place a cover slip on it.
5. Examine with a 10x objective lens. If a slide has less than 10 eggs, that is a 1+.
 - a. 0 eggs, negative
 - b. < 10 eggs for the cover slip: 1+
 - c. 1-10 eggs for the microscope FIELD: 2+
 - d. 11-100 eggs for the microscope FIELD: 3+
 - e. > 100 eggs 4+