How to do a fecal egg count and test the efficacy of a dewormer for sheep and goat producers

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Collecting samples

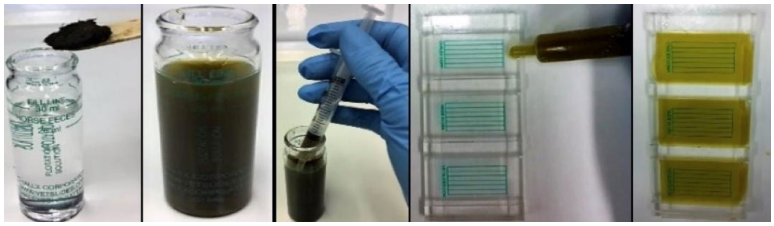
1. Select 15 to 20 ewes. Prior deworming should have been done more than 8 weeks before.
2. Collect fecal samples from each ewe. *This should be done by using a small amount of lube on two fingers and gloved hands to collect feces from the rectum. It is easier if the ewe is restrained in a chute. If this is not possible, fresh samples may be collected from the ground trying to collect only from the top of the pile to reduce contamination*.
3. Deworm the ewes based upon individual weights.
4. Identify the selected ewes.
5. Conduct fecal egg counts on all collected samples.
6. About 14 days after deworming (see the table included below – efficacy times may vary depending on the dewormer) collect fecal samples from all animals (if you are testing multiple drugs, use a 14-day interval).
7. Ideally, samples should be processed in the lab as soon as possible after collection (within 24 hours). They should not be refrigerated or frozen.
8. Conduct fecal egg counts. We recommend the Paracount-EPG method kit (Paracount-EPG) https://www.vetslides.com

What do you need?

1. McMaster slides with either 2 or 3 chambers
2. Calibrated vial (there is one with the McMaster kit, but if you only bought the McMaster slides you can use a plastic cup)
3. 1 cc Syringe (often included in the kit)
4. Saturated salt solution
5. 10X microscope lens

Steps for Fecal Egg counts

1. Fill the vial with Flotation Solution to **28 ml** line (the calibrated vial that comes with the kit there is a fill line for sheep feces).
2. Add feces to bring volume up to **30 ml** line (This is approximately 2 g of feces.).
3. Stir and mix thoroughly with a tongue depressor, to allow the eggs to float. (Make sure the feces are very well suspended in the solution. Make sure to have a different tongue depressor for each sample).
4. Immediately draw fecal suspension from top of vial in syringe and use to fill one chamber of slide. Repeat to fill remaining 2 chambers.
5. **Count the eggs** after 1-2 minutes. Examine slide under microscope focusing on the grid line. Starting at one corner count all the eggs within the entire grid system for one chamber. Record the egg count. Repeat for remaining two chambers/grids.



Calculate the eggs per gram (EPG)

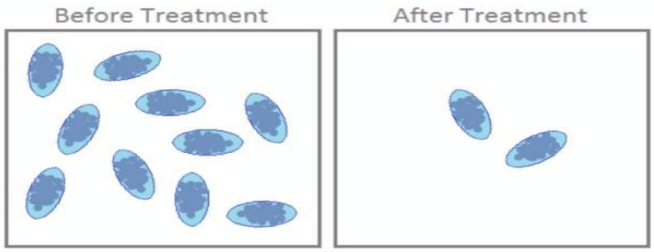
If you use a 2-grid chamber: Add the total number of eggs together from the 2 grids to obtain total, multiply the total number of eggs by **50** to get the number of eggs in the sample per gram (epg).

If you use a 3-grid chamber: Add the total number of eggs together from all 3 grids to obtain total. Multiply the total number of eggs by **16.66** to get the number of eggs in the sample per gram (epg).

Calculate the eggs per gram reduction.

Use the following formula to calculate the EPG reduction: *Reduction=100%*(1-postEPGmean/preEPGmean)*, where "*postEPGmean*" is the average of the EPG counted after treatment and the "preEPGmean" is the average of the EPG counted before treatment. If there is less than 95% reduction for your flock, this may indicate anthelmintic resistance OR anthelmintic failure.

Example: Old MacDonald's had a Pre-treatment EPG of **800** and a Post-treatment EPG of **40**.



To calculate his reduction:

$$Reduction = 100\% * \left(1 - \frac{40}{800}\right)$$

$$Reduction = 100\% * (1 - 0.05)$$

$$Reduction = 100\% * (0.95) = 95\%$$

Old MacDonald's reduction in this case was 95%, indicating that his dewormer was effective!