Browsing Academy

FECAL ANALYSIS
FIELD TECHNIQUE (PART 1)

Recently, deworming conversations (and articles) have been catching my attention. Emphasis needs to be shifted on management for building an immune resistance within the goat to internal parasites. I started experimenting with a field fecal analysis technique in the fall of 1985. Since then, I've tried various fecal float mixtures, time of fecal collection, time of analysis after deworming, etc., and have had successes and failures.

Goats Unlimited is on a forage management program for internal parasite control with our last deworming October 1995 BUT my last fecal analysis was yesterday. When I first started, I analyzed fecal samples three times per week, now, on a weekly basis. Once fecal analysis is into your management schedule, it takes approximately one hour and fifteen minutes to do a set of 12 samples - remember, each set sits for 30-45 minutes allowing the eggs to float and adhere to the microscope slide.

There are three important parts to accomplish internal parasite control through management: Part One - Fecal Analysis; Part Two - Anthelmintic Selection and Use; and Part Three - Grazing (grass/brush/pasture) Management. As I discuss each part, all statements will be based upon what has worked (or not worked) for Goats Unlimited. We have been land cleaning and firebreaking in areas ranging in rainfall from 12 to 168 inches per year and with mobs of 25 to 1000 producing Kiko meat goat does and/or wethers.

Collect fresh, warm fecal pellets - one per individual or 12 pellets per 100 head. The fresher the better, never in the sun and never having touched the ground. Refrigerate if you are not able to float the samples immediately.

Supplies: Microscope, slides, coverslips, fecal cups, individual mixing sticks
Flotation mix and 'Dawn' dishwashing liquid
Data recording sheets and postage weigh scale

Flotation Mix: 12oz warm water (pepsi can) to one (1) pound of granulated white sugar. This is a supersaturated solution and will take some shaking and waiting until it all goes into solution; usually about an hour.

Fecal cups: Henry Schein Vet Supplies, 5 Harbor Park Drive, Port Washington, NY, 11050 (800)-872-4346). (Ovatector, Fecalyzer or Ovassay Plus).

Book: Sloss, M.W., R.L. Kemp, and A.M. Zajac. Veterinary Clinical Parasitology, $5^{th}/6^{th}$ Editions. Iowa State University Press, Ames, IA, 50014. ISBN –0-8138-1733-1.

Procedure: Fill fecal cups about 3/4 full of supersaturated sugar solution.

Add 1 gram of fecal material (after a few times you won't need to weigh), smash with individual mixing sticks and mix well, add additional sugar solution allowing the meniscus to rise above the top, place microscope slide across top, wait 30-45 minutes (can leave as long as 3 hours) for parasite eggs to float up and adhere to the microscope slide.

Carefully roll the microscope slide over placing a cover slip on top of the slide and read under microscope (once you're practiced, you won't need the cover slip). Scan the slide at 4 power, going to 10 power for specie differentiation if necessary. On occasion I've gone to 40 power or oil immersion but you really don't need a scope that powerful. I scan 12 fields per slide.

Record data (number of eggs by specie by sample) and pertinent information on the form (Table 1).

I have kept records on goat fecal analysis since the fall of 1985. These records include the use of various anthelmintics, climatic conditions, vegetation production management, nutritional status of the goats, class of goat, physical status of goat and a definite pattern appears. Do fecal analysis on individuals within in a mob; do not composite samples. If you need to deworm based upon fecal analysis results, choose the correct anthelmintic (Part Two), and do fecal analysis again 3,7, 10, 17, 21 and 28 days after deworming. Get a feel for your parasite loads and start building a resistance to internal parasites within the goat itself. The goat has a delicate immune system that needs to be prodded and sparked into building a resistance. Once that resistance is obtained, it has to be managed carefully, or it will be lost.

The above discussed technique works with most roundworms (nematodes) and tapeworms (cestodes). The liver fluke (trematode) has a different structure and therefore a different analysis. There is a fecal analysis for flukes as well as an antigen blood test.

The attached data sheet (Table 1) has the most common problem internal parasites listed; coccidia (Eimeria), common tapeworms (Moniezia), common stomach worm (Haemonchus contortus), threadworm (Strongyloides papillosus), bankrupt worm (Trichostrongylus) and thread-necked strongyle (Nematodirus). Change the listings to fit your geographic area and operation as the need arises. So, here's a start. Practice this field technique and you'll be ready for the followup in the series.

Once you become comfortable with the identification of fecal eggs and oocysts under the microscope, you are ready to begin identifying larvae in dewdrops. This technique gives you a 5 to 7 day advanced warning of what is to come; therefore allowing for a more timely management change.

Add the observance of eye lid, inside vulva and gum coloration to your routine. As internal parasite loads increase, the goat becomes anemic (skin coloration diminishes from bright pink to white) and bottlejaw developes. This technique will help identify individual animals needing treatment. Hematocrits can be run to check and monitor red cell percentage in blood.