



ANDDA

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Coccidiosis: A disease treated by prevention

by: Yalonda Burton, DVM, [Cherry Tree Farm](#)

Coccidia are a type of protozoa unlike other parasites we typically treat in our goat herds. Being a protozoa, it does not respond to typical parasitic treatments. Learning the “hows” and “whys” of coccidia will better equip herdsmen and women to care for the young members of their herds in a more efficient way.

Coccidia is a generalized term for multiple species of protozoa that can cause gastrointestinal symptoms in young or debilitated animals. *Eimeria* is the species that causes disease in sheep and goats and coccidia does not cross host species from goats and sheep to other species or vice versa. (i.e. Cattle or poultry will not give your kids coccidia but the stress of living with them may cause coccidia to replicate in your kids.) The primary visible symptom is diarrhea but the subclinical disease is far worse and leaves the kids with debilitating damage. Any sort of stress can cause an influx of coccidia in young animals, such as stresses like weather changes, diet changes, weaning and shipping or unfamiliar pen mates or surroundings.

The most common time to see coccidia is 1-4 months old, although it can be sooner or later than those ages if stress and conditions are optimum. The most common cause of coccidia in a herd of young stock is crowding that results in excessive manure and urine build up resulting in the perfect conditions for sporulation of coccidia. Typically the animals in these conditions are exposed to high numbers of infective organisms and develop clinical coccidiosis. The kids typically break with diarrhea that can progress to mucoid, bloody or watery, followed by anorexia, dehydration, weakness and death. Weight loss and straining to defecate can be seen and sometimes results in rectal prolapse. In many of these instances, the mucosal lining of the gut is likely damaged beyond repair and often the young animals will not be able to absorb enough nutrients from the remaining gut lining to support adequate growth and weight gain. These typically end up becoming the “poor doers” of the herd even once the disease is cleared from the gut.

Coccidia is easily diagnosed in early disease with a fecal floatation to identify the offending ova in feces. As cases become more chronic in nature, the ova are harder to find or shed intermittently and may be overlooked.

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Meeting Topic—How to Perform A Fecal

By Ashton Bohrer, Youth Chairman and [3KS Ranch](#)

Supplies needed:

- **A Microscope** with 4X, 10X & 40X power with a built in light. You can pay a lot of money for a microscope, it is not necessary. A simple "student" type microscope works great.
- **Blank slides and slide cover glasses**
- **A Scale** I use one that measures in grams
- **Measuring cups of beakers**
- **Small strainer**
- **Test tube**
- **Test Tube Holder** or hunk of styrofoam with a hole dug out to nicely hold a test tube
- **Floatation Solution** I included instructions on how to make your own
- **Knowledge of what worm eggs & oocysts (coccidia eggs) look like**
- **Paper and pen**

How to make your own floatation solution:

You are going to make a "saturated solution", which means you are going to put so much Epsom Salt into some water that the water cannot take up any more. This will cause the water/Epsom Salt solution to become heavier than just regular water, thus causing the worm eggs to float to the surface of the solution during your test.

1. Put some Epsom Salt in a jar with a tight fitting lid. Fill about 2/3 full with water.
2. Shake the jar well.
3. Add more Epsom Salt.
4. Shake.

Over a 24 hour period, keep adding more Epsom Salt and shaking until you have a permanent layer of Epsom Salt in the bottom of the jar. No more Epsom Salt will be able to be dissolved into the water. You now have a saturated Epsom Salt floatation solution. Pour off the solution into another jar, leaving behind the non-dissolved Epsom Salt grains.

How to Run Fecal Test:

- 1) Collect fresh fecal from the goat.
- 2) Weigh out 3 grams of poop. I prefer to weigh/measure everything to ensure accurate results.
- 3) Put the fecal samples in a small cup or beaker that can hold 30-50 ml and mash it up really well with the craft stick.
- 4) While stirring, slowly add 25ml of floatation solution. Stir well.
- 5) Let sit for 2 minutes.
- 6) Strain fecal solution into the larger cup or beaker. Press the poops really well to force as much liquid out as possible.
- 7) Let sit for another 2 minutes.
- 8) Stir.
- 9) Set test tube in the holder, and pour the solution into the tube. Fill it a little more than full, so the solution overflows slightly.
- 10) Carefully place a coverslip on the test tube. The solution should touch the coverslip.
- 11) Let sit 15-20 minutes. The eggs will float to the top of the solution and collect on the coverslip.

(Continued on page 11)

ANDDA Webmaster — Carol Ann Harlan, [Diji Farm](#)

I work fulltime for the local Sheriff's Office in the Emergency Management division. I have three children, and 9 grandchildren that absolutely steal my heart. My son Mitch is a Chief in the Navy, my middle daughter Alexandria is a mother of 5 and my youngest is just turning 18 and has had a senior year like none of us know.

I enjoy fishing, drawing, cooking and kayaking in my spare time. I have previously been the Director-at-Large and Editor for ANDDA and am currently on the Board of Directors for our local Fire District.

I began raising Nigerians in 2007 with the intention of having a couple pets, well like most things I do it became an obsession on steroids. Something I was never going to do was milk or own bucks. At one point I had 14 boys (I'm currently down to 6 live boys - I discovered AI - so the addiction really hasn't changed). I began milk testing 2012 and love watching the girl's achievements. I do a hybrid of dam/bottle raising, which works great with my busy schedule. I toyed with LaManchas and Lagerians for a short period, but eventually came back to my little beloved Nigerians.

I have been enjoying moving the ANDDA website to a cloud-based platform and look forward to discovering new ways our members can be more interactive and more ways to show off their achieves.

Thank you for your patience of the past year as I learn these new software platforms.



SCORECARD BREAKDOWN

Evaluate the following 4 junior yearlings based on the ADGA and AGS scorecard and put in placement order from 1st to 4th. Answers based on Jake Bradford evaluation on page 4.



(Continued from page 1)

Often the diarrhea resolves but the disease is still present with a lasting effect on the gut lining.

Treatment of clinical cases of coccidiosis involve using a coccidiostat to prevent further infection and supportive care. Keeping the animal hydrated and adequate nutrition, lowered stress and a clean temperature appropriate environment are of utmost importance. Administration of coccidiostatic drugs will help reduce further infection but likely is not useful in the treatment of the current infection. These drugs work best if given preemptive to any stressors, such as weaning, weather, traveling or diet changes. Sulfa drugs appear to help reduce secondary infections and are often used in these cases. Only drugs approved in the US for the species being treated should be used unless a resistance is demonstrated. Drugs approved for use in the US against coccidiosis in goats are decoquinate (decoxx), monensin (bovatec), and trimethoprim sulfa. (Others drugs available for coccidiosis need to be used under the direct supervision of a veterinarian due to being off label usage and FDA restrictions.)

The best approach to coccidiosis is prevention. It is a disease that is impacted significantly by management. Proper management will result in little to no coccidiosis in a herd. Avoid overcrowding areas where babies will congregate or in kid pens. Keep the pens clean and dry to avoid over accumulation of manure and urine which cause the oocyst to sporulate and become infective. Exposure to sunlight and desiccation are two of the most effective forms of reducing coccidia in an environment. Using coccidiostats at times of high stress to reduce the development of clinical disease but allow natural immunity to develop will help kids grow to their full potential.

This kidding season, as you are faced with the occasional sick kid, stop and take a look at your management. As someone is grabbing the medication to help recover this kid, make a true and honest evaluation of how you can better your management to prevent the same process in the remaining kids. We can all do better, be better and raise better. May this be your best year ever!

Scorecard Placement

This is my class of Nigerian Dwarf dry yearlings. I am placing them B, A, D, C

-B is placing over A for her advantage in General Appearance. We see a doe with more correctness in the front end with more properly placed front legs and more length and levelness over the back, especially in the rump from hips to pins. We also see more extension in that brisket with Body Capacity with more fullness in the point of elbow.

-A is placing over D for the advantage in Dairy Strength. We see more prominence in the withers with a cleaner neck and elegance throughout. We also see an advantage with General Appearance with the levelness in the loin and the smoothness of the shoulder assembly.

-D is placing over C for the advantage in General Appearance. We see a more correct rump, especially with the levelness from hips to pins. We also see a longer bone pattern throughout. With dairy strength we see a leaner neck and cleanliness in the thigh.

We want to commend C for the depth into the rear barrel she shows.

DIY PVC Mineral Feeders

By Melody Shaw, [Narrow Gate Nigerian Dwarf](#)

Supplies:



PVC Cap cut in half



45 degree elbow



90 degree elbow



Clean out adapter with plug

I chose the 4" fittings and they have worked perfectly for my Nigerian Dwarf herd, but if you have larger goats I'd recommend bumping that up to 6".

Each piece fits snugly into the other so the only piece needing to be glued is the (half) cap at the feeding end. Use PVC cement.

The photo at bottom left shows how I use an old hose to secure them to the bottom 2" x 8". Not shown in the two photos is the 6" hose clamp I have put around each feeder's neck and secured to the wall (for added stability). Photo in the middle shows how I have used a bungee cord to secure. Photo on the right is a gradient feeder.

I recommend placing them at a height that is 2" higher than the rump of the goats you are using them with. This (along with the small feed opening) prevents poop from getting into your mineral.

Each 4" feeder hold 2½ quarts of mineral.

Shown in this photo is an online example of my inspiration. I chose to use a U shape design to avoid minerals setting to the bottom.



Are You Protected?

Travis Cockburn, [Cade's lil' Farm](#)

The word insurance can be a cause of heartburn and frustration for many. Sadly, many take the frustration and ignore potential problems created by not reviewing their coverages. In this article, I want to cover the highlights of coverage for your farm and things to consider if you are part of a club.

Farm

My first recommendation is to make sure your coverage is with a carrier that specializes in insuring farms. I know you are saying to yourself: "I only have six goats and an LGD, why would I need insurance?" But six goats and an LGD is still considered a farm. A farm policy will give you the broadest coverage with the fewest exclusions as it relates to livestock. Farm policies are designed to provide liability protection for events that are specialized to the industry. Here is a quick example for those living in a fence state: a client of mine raise's cattle. He had a weanling steer jump the fence at 10:30 pm. The steer was black, and it was standing on a deserted highway when a car rounded the curve. The driver did not see the steer until it was on top of their car. The person totaled their car, and they were taken to the hospital via ambulance. The liability portion of the farm policy paid for the damage to the car and the medical bills that resulted from his steer being where it was not supposed to be. Some homeowner's policies exclude liability caused by farm animals. A farm policy will protect you in the event an animal-related incident occurs.

Secondly, a farm policy will often allow you to schedule not just animals, but also equipment on your policy. Let us say you have a nice show herd, and you are on your way to a six-ring show in Du Quoin, Illinois. Let us look at a hypothetical scenario. While traveling through the corn fields of Illinois, a deer jumps out in front of you and you total your truck and trailer, damaging all your show equipment and you lose all six of your show goats worth \$5500. A farm policy will allow you to insure the value of the equipment and the livestock that were lost. Many homeowner policies will not cover the animals, a farm policy covers both.

Clubs

Does your club have a liability policy? If not, you are opening every club member to potential liability claims. Our club in Illinois puts on three to four shows a year and we have carried a General Liability policy for years. Although there are Event Policies, it is specific to one single show rather than the entire year; our Club found we could purchase a liability policy with the ability to name additional insured for less than the event policy. Both policies are designed to provide protection for the club and its members in the event something happens while the show is taking place. In the litigious society we live in today, a small policy covering the club and its members goes a long way. Policies will vary based on the state and number of members. I have seen policies for clubs range from \$250 to \$1000 a year. Regardless of the price if your club is putting on a show, I would recommend having a liability policy in place.

Travis Cockburn raises Nigerian Dwarf goats and custom farms hay in southern Illinois. He has been an insurance agent for the last 25 years and the income from the insurance industry helps support the farming habit.

Count Your Parasite (Eggs) Before they Hatch!

Christy Taylor, [Hidden Corner Farm](#)

Barberpole. Coccidia. Meningeal worm. Lungworm. Words to strike fear into the heart of every goat farmer. Every breeder and hobbyist who is involved in goats long term will have a run in with parasites, which cause significant financial losses in the caprine industries worldwide. Running a large herd can make veterinary fecal testing complicated and expensive. While no home method is going to be an adequate substitute for skilled veterinary care, breeders can lower the financial costs by learning to do their own fecals with a microscope.

Like any piece of equipment, microscopes range from “novelty” pieces to increasingly sophisticated - and expensive- machines. Most goat farmers will want to invest in a scope that is affordable yet sufficient to make parasite detection as easy and accurate as possible. However, there are other factors to consider.

Would you prefer a monocular or binocular model? Binocular models are more comfortable for longer term use, but tend to cost more, so individual users will need to assess comfort vs budget restraints.

Magnification: While 400X is sufficient to see even Coccidia, higher magnifications might be desirable as you become more skilled in parasite detection.

Some microscopes are battery powered, and are therefore more easily used in the field or a barn with no electricity. A corded scope is going to be less portable but is significantly less

likely to die while examining a sample.

Extras! Are you in search of a bare bones scope that gets the job done without the extra bells or whistles? Do you have children, students, or 4H youths that you intend to educate? A cell phone hookup that can take accurate pictures might be considered essential for teaching projects or allowing you to share pictures online for educational purposes, as well as sending to your vet for a second opinion.

After you’ve decided which models are going to suit your needs best, it’s time to start shopping. Below are some models within an affordable range with various features to fit various needs.

Affordable microscope options start on Page 8!



Parasites, from Page 7

[TELMU Microscope](#) (\$79.99)

With magnification ranging from 40X to 1000X, this machine is inexpensive yet should meet the needs for basic parasite detection and management. It has two light sources, allowing you to illuminate your specimens from both above and below. Battery powered, this machine includes slides that will allow new microscope users to adjust to microscope usage. A good starter model before investing in a better machine.

[Amscope Compound Microscope](#) (\$111.99)

40X to 1000X magnification. External power source, limiting usage to areas near an outlet. No slides included, no phone adapter.

[Celestron CM 800](#) (\$108.00)

Magnification from 40X to 800X, and can be powered with a cord or a battery for both lab and field use. No cell phone adapter.

Digitalcameraworld.com named it the best value lab grade microscope.

[Celestron CM 1000C](#) (\$112.20)

Magnification from 40X to 1000X, and can be powered with a cord or a battery for both lab and field use. No cell phone adapter.

[Amscope M150C-E](#) (\$124.99)

Magnification from 40X to 1000X. Includes a 0.3 MP camera with USB output for capturing pictures. Powered by an adapter so requires an outlet. Eyepiece has 360 degree rotation capability.

[Amscope 40X-1000X Compound Scope With Mechanical Stage](#) (\$161.99)

40X to 1000X magnification. Mechanical stage allows you to more easily move around the slides for a more efficient egg count. Requires an outlet. Includes a few extras like color filter, immersion oil, a spare bulb, and a tool to improve tension.

[Amscope 40X - 1000X Advanced Student Compound Microscope + Camera](#) (\$195.99)

0.3 MP camera that can capture photos or livestream for presentation on your computer. Has a single layer mechanical stage. Offers advanced features like measurements. Ships with a spare bulb, fuse, and immersion oil.

[Omax 40X - 2000X Binocular Compound Microscope](#) (\$209.99)

As binocular scopes are more expensive, this is one of two binocular examples on the list. LED illumination, double mechanical stage. Uses a power adapter. Amazon's "Top Pick" for microscopes.

[Swift SW350B](#) (\$229.99)

40X - 2500X. Our second binocular example. Rotating nosepiece, LED illumination, and a mechanical stage. Uses a power adapter. Ships with immersion oil, a blue filter, and a spare fuse.

[Celestron LCD Digital Microscope II](#) (\$239.99)

40X - 1600X (if you include digital zoom). Built in 5MP digital camera. Fully adjustable mechanical stage. Dual illumination, for illuminating from above or below. Screen allows you to determine the size of the specimen. Ships with 1 GB SD card, dust cover, rugged canvas carrying case with shoulder strap, 5 prepared slides, 4 plug international AC adapter.

Digitalcameraworld.com named it the best microscope with a camera.

***Note: It's been suggested that some companies are failing to honor warranties on machines bought through Amazon rather than purchases directly from the company. Please read the fine print before your final purchase.*

In addition to a quality microscope, fecal examination does require a few other supplies. A [fecal floatation solution](#) is necessary, although this can be purchased or made from sugar or salt solution. [McMaster slides](#), which are considerably more expensive than typical glass slides at approximately \$16 each, will enable you to get a more accurate egg count. Other supplies include stirring sticks, small cups for mixing samples, and DON'T FORGET YOUR GLOVES!

With time and effort you will become adept at detecting parasite infections, allowing you to establish a thorough testing and treatment protocol and eventually leading to a healthier herd and more economical style of management.

Additional information:

[Fias Co Farm's Guide to Fecal Examinations](#)

[Onion Creek Ranch's Guide](#)

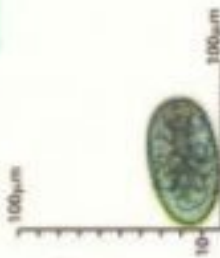
[University of Arkansas' Fecal Guide](#)

[University of Rhode Island's Guide](#) (Procedure layout as well as excellent pictures for identifying various specimens)

Illustration: Courtesy of [Merck Veterinary Manual](#)

Guide to Internal Parasites of Ruminants

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Ostertagia
(brown stomach worm)

Cooperia
(small intestinal worm)

Moniezia
(tapeworm - sheep)

Moniezia
(tapeworm - cattle)

Bunostomum
(hookworm)



Haemonchus
(barberpole worm)

Nematodirus
(threadneck worm)

Trichostrongylus
(bankrupt worm)

Oesophagostomum
(nodular worm)



Trichuris
(whipworm)



Strongylus
(threadworm)



Coccidia
(a protozoan that causes coccidiosis)



Dictyocaulus
(lungworm)



Mite Egg - 1/4 actual size
(contaminant - often mistaken for worm eggs)

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(Continued from page 2)

12) Carefully remove the coverslip by lifting it straight up (don't slide it against the test tube) and place it, wet side down, on a slide.

13) Place the slide on your microscope. At 10X power, find a corner of the coverslip to start at.

14) Search the slide by moving it slowly in an up and down pattern.

15) Start looking for worm eggs. You aren't actually going to see worms, just worm eggs. Every time you see a worm egg, make a mark on your paper.

*The eggs are small, so take your time and keep looking. You will probably see all sorts of stuff in the fecal solution, but eventually you will probably see a worm egg. You are looking for oval shaped eggs. With practice, they get easier to recognize.

*You may see things that look like worms, but remember that the goat eats lots of varied and fibrous plants and the cells of these can sometimes look long and wormlike. There will also probably be air bubbles, so don't mistake these for eggs. Keep in mind that air bubbles are perfectly round and have very dark edges and clear and/or bright centers—eggs do not.

*If you locate, what you think is a worm egg, you can switch your microscope to 40X power to get a really good look. (Be careful using 40X power, and adjust the focus very slowly so that you don't accidentally break the slide with the lens)

16) When you are done, count the total marks you've made, this will be the total number of eggs you saw.

*Now, the big question, how many eggs can the goat have and be OK. How many mean an infestation? Remember... ALL GOATS HAVE SOME WORMS! Don't panic if you find worm eggs in the sample. You just don't want to find a lot of eggs. Every situation is different, so I can't tell you how many are "okay" and how many are not. A healthy goat that

Hello all! My name is Ashton Bohrer and I am so excited to fill the role of ANDDA Youth Chair! I started with my first Nigerians as a 4-H project in 2006. I quickly fell in love, and have been



raising them ever since! Youth programs and helping kids is my passion! I have three children of my own, I am an elementary school teacher, and I was a 4-H club leader for five years. I have big plans and hopes for the ANDDA Youth program this year!

has built up natural resistance to worms can handle a larger wormload than an unhealthy goat. The goal is not to have your goats be totally worm free, but just to maintain a consistent low wormload, with the goat showing NO signs of parasite infestation. Personally, I do not worry about anything under 10 eggs and if I count in the teens, I still may not worry too much, depending on the health of the goat. Anything beyond that, I usually treat and what I use to treat it with depends on what types of worm eggs I found because different wormers kill different types of worms.

A great resource that I used to perform my own fecal exams is Fias Co. Farms (<https://fiascofarm.com/goats/fecals.htm>) They also have photos to help you understand what you are looking for. These pictures are a great resource, as is Fias Co. Farms in general (and this is where I learned to do my own fecal testing as well, so a lot of this information will be quite similar to what you read there.)

Recipe of the Month—*Pecan Pie Bread Pudding*

By: Dawn Robnett, [Mesquite Valley Farm](#)

This recipe was created by Paula Jones at CallMePMc.com.

Warning: This is a decadent bread pudding. Please be sure to use an 8x8 baking pan. This is no typo and you'll surely swear there is no way it will all fit, but it does, just barely.

Ingredients:

1 lb loaf of day-old French bread
2 ½ cups goat milk
1 cup heavy cream
4 large eggs lightly beaten
1 cup sugar
1 Tablespoon vanilla
1/8 teaspoon salt
½ cup butter softened
1 ½ cups packed brown sugar
1 cup chopped pecans



Instructions:

Preheat oven to 350 degrees Fahrenheit

Cube bread, place in a large bowl. In another bowl, beat eggs, milk, cream, sugar, salt, and vanilla. Pour over the bread and allow to sit 5-10 minutes.

In another small bowl, combine with a fork, softened butter, brown sugar, and pecans. This mixture will have the consistency of wet sand.

Pour half of the bread mixture into a greased 8x8 inch pan. Top with half of the pecan mixture, then add remaining bread mixture. Press down into pan slightly. Pan will be really full. Top with remaining pecan mixture.

Place pan on a cookie sheet and make sure you have 1-inch space all around to catch any boil-over. Bake at 350 degrees for 45-55 minutes. The center will be slightly jiggly but will set when cool.

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Editor:
Karen Goodchild
OK Doe K Dairy Goats

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comment or article idea!