



Buckeye Meat Goat Newsletter



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How Do You Know Your Parasite Control Program is Working?

Excerpted and adapted by Jeff Fisher from articles written by William Shulaw, OSU Extension Veterinarian, for the Electronic Sheep Team Newsletter

Parasitologists and Extension veterinarians have been stressing monitoring the success of your parasite control program and the effectiveness of the dewormers you use for a long time. The only practical way of doing this is collecting samples of manure (fecal material) from sufficient numbers of

animals and then performing QUANTITATIVE fecal egg counts on them in order to estimate the parasite burden being applied to your pastures or to assess dewormer effectiveness

A herd owner should be collecting data on body condition scores, FAMACHA score, and fecal egg counts (FECs) on all animals in an effort to document sustainable parasite control strategies that do not rely on regular deworming of the entire herd.

Body Condition Scoring

Body condition scoring (BCS) is a visual estimation of body condition utilizing a 1-9 system with 5 being average. BCS scores of 4-6 are necessary for efficient reproduction performance and economical production. BCS scores of 1-3 are considered thin while scores of 7-9 are fat.

FAMACHA Scoring

The FAMACHA system uses a patented eye color chart to assist a producer in detecting anemia in the sheep. It is only useful for evaluating anemia produced by the voracious blood feeder, *Haemonchus contortus*. The color of the tissues surrounding the eye and inside of the eye-lid is compared on a 1-5 scale with 1 being desirable and 5 indicating anemia. It allows one to deworm only the most heavily parasitized animals thus leaving the worms in the remaining sheep unexposed to the dewormer. It is believed that selective deworming practices, such as this system, may prolong the useful life of dewormers.

A management decision may be made to selectively deworm those does with body condition scores less than three or FAMACHA scores of "3" or above in the interest of minimizing pasture contamination and reducing selection pressure for drug resistance while deworming the animals that need it most of all.

Fecal Egg Counts

The most common method of determining

FECs for sheep and goats is the McMaster technique. Although there are several variations of how this is done, the basic method uses a weighed fecal sample, a known dilution in the flotation solution, and a specialized counting slide to count the eggs. After the slide's chambers have been filled with the manure suspension in flotation solution, the eggs are counted under a grid that defines a known volume of the suspension. Usually the area under two grids is counted and the results averaged and multiplied by a dilution factor. Because the number of grams of feces and their dilution is known, the result gives you an estimate of the number of eggs in a specific amount of manure (eggs per gram; epg). McMaster counts are not harder to do than simple flotations, and the equipment is relatively inexpensive and reusable. Many veterinarians in Ohio are trained to do them, and some currently offer this service. Most methods require at least two grams of manure, and usually four grams are used as this amount provides a more accurate estimate. This means you need to provide your veterinarian with about a tablespoonful of fresh manure for a proper exam. One pellet is not enough. Generally speaking, you need samples from about 15 animals to get a reliable estimate of the group average.

The two best uses for FECs are to monitor the rate of pasture contamination and to determine whether drug resistance is present in the worms on the farm.

Pasture Contamination

Monitoring the rate of pasture contamination is a tool the producer can use in making decisions such as when to move animals from a pasture to avoid a buildup that may lead to a dangerous situation, or it might be used to assess how much contamination is occurring in order to make decisions about future use of the pasture during that grazing season. For example, if pastures used for kidding in April and May have received a relatively heavy egg burden, it may be wise not to graze them with

kids later in the summer. They may be safe for dry does and could be used by an unrelated species. Monitoring contamination rate can help make that decision. If one were to see an average FEC of above 2000 epg on samples collected thirty days after deworming a group of goats, it may indicate that the pasture they have been grazing is pretty heavily contaminated. This is not an unusual observation when non-persistent dewormers such as Valbazen, Tramisol, or Ivomec Sheep Drench have been used and the goats continue to graze a contaminated pasture.

Drug Resistance

If we just had the overall appearance of individual animal to judge our management plan by, we might think the deworming treatment was a success when, in fact, fecal egg counts can actually continue to rise. The gradual improvement in body condition and FAMACHA scores might be interpreted as successful results of the deworming(s). However, reductions in body condition of the does are pretty much expected as a result of good milk production; and improvement in body condition would be expected as milk production decreases, if enough energy were available. We want to see at least a 95% reduction in egg count, in the post treatment fecal samples as compared with egg counts determined from samples collected at the time of treatment, in order to conclude that a drug is effective and that significant resistance is not present. Pre and post treatment egg counts should be performed on samples collected 10-14 days apart. The lack of obvious reductions in fecal egg shedding after deworming certainly suggests to us the possibility that drug resistance worms may be present in the herd. In our experience, if the average FEC of a group is much above 100-150 epg 10-14 days following a deworming, either the drug was not as effective as it should be or the egg count was very high when the animals were treated. This should be a red flag to signal that further information about dewormer effectiveness is needed.

At the present time *Haemonchus contortus* is the most important worm we have to deal with here in Ohio. Although there are several common species of worms that produce similar-looking eggs as *Haemonchus* under the microscope, it is usually safe to assume that by July, at least 90-95% of the eggs of this type will be *Haemonchus*. Therefore, resistance testing here in Ohio in mid to late summer will give us a good idea of what dewormers will do against this very important worm species.

An alternate approach to the pre/post treatment egg counts to detect drug resistance to dewormers uses an untreated control group of animals. In this approach, the test group of 15 or more animals is treated with a dewormer, and then 10-14 days later, FECs are determined on samples from the animals in the test group and for a similar group of untreated animals. As in the other method, we are looking for at least a 95% reduction in average FEC in the treated group compared with the control animals. This method accounts for variation in the groups that might not be attributable to the dewormer. It also has the additional advantage of requiring considerably fewer total samples if several drugs are being tested at the same time because both pre- and post-treatment egg counts are not required and several test groups can be compared to the control group. You do have to know, or expect, that average egg counts will be above at least 250 epg in the control group for valid comparisons.

Most parasitologists today recommend conducting resistance testing at least every two years. Testing for resistance does require significant work and expense. However, not knowing whether the dewormer you are using is effective can be more than expensive. It can be disastrous. The goal is to continue to use selective deworming practices and pasture management strategies to control parasitism and prolong the useful life expectancy of the dewormers we have available. Fortunately, we have some tools to measure what we are managing. Do you?

**2002 CENSUS DATA
NUMBER OF MEAT GOATS
TOP TEN STATES**

<i>State</i>	<i>Number of Goats</i>
Texas	941,783
Tennessee	107,211
Oklahoma	73,302
Georgia	66,018
Kentucky	61,618
California	61,241
North Carolina	58,993
Alabama	47,270
Missouri	37,515
Florida	36,020

Virginia ranks 11th with 35,710 meat goats and Ohio ranks 12th with 28,439 meat goats

Compiled by David Mangione, Center for Livestock Entrepreneurship

Quality Assurance Control Points for Meat Goats

Injections

Administer all products labeled for IM (intramuscular) use in the neck region only, in front of the point of the shoulder. All products labeled for subcutaneous (SQ, under the skin) use must be administered SQ in front of the point of the shoulder (in the neck region). No injections shall be given in locations other than the neck region, regardless of animal age.

If intramuscular (IM) medications must be used, administer them in the neck and never exceed 5 cc per IM injection site. If 12 cc is the calculated dose, use three, 4 cc injections instead of two, 6 cc injections. Administer less than 5 cc per IM injection site. The volume of solution injected at one site will directly influence tissue damage, scar tissue and

potential abscesses. **Always use subcutaneous (SQ; under the skin) or intravenous (IV; in the vein) routes of administration when permitted by the product's label.** Check product labels closely and administer the product as specified on the label. Select products that have subcutaneous (SQ) as an approved route of administration.

Drug Usage

Veterinary drugs are available in two categories, over the counter (OTC) and prescription (Rx). OTC products meet certain criteria for safety to both the animal and handler. When proper diagnosis and special directions are concerned a prescription is required. Rx drugs are restricted by federal law to use by or on the order of a licensed veterinarian.

All drug products must be administered according to the labeled directions for dosage and withdrawal time.

Extra Label Drug Use and VCPR

Because so few drug products have FDA approval for goats many producers find the need to use products in a way other than that stated on the manufacturer's label. This is considered extra label use and is illegal unless directed by a veterinarian with an established Veterinary-Client-Patient Relationship (**VCPR**).

A VCPR is established when a veterinarian knows about an animal's health by having seen it or others in the same herd and can make decisions regarding the animal's treatment. The veterinarian needs to be available for follow-up and the client needs to follow the treatment instructions.

Identification and Record Keeping

In order to prevent drug residues in goat products (including chevon and milk), proper identification, and record keeping of treated animals is necessary. Goats treated with

drugs should be given a permanent, unique identification such as by use of an ear tag, tattoo, or USDA Scrapie tag. This will prevent them from being lost for further treatment and allow proper harvest withdrawal to be followed. In addition, the manager may wish to use a colored mark on the face or head or a distinguishing collar for easy recognition.

A record of medicine use must be kept and must include product identification, serial/lot number, date used, amount used, the person who administered the product, the animal or animals treated, and withdrawal time.

Environment Checklist

- Provide adequate housing.
- Allow proper ventilation.
- Maintain clean bedding.
- Practice good sanitation.
- Keep barns dry and lots well drained.
- Effectively manage manure.
- Provide access to clean, fresh water.
- Clear pens and alleys of obstructions, nails, etc.

Management Checklist

- Provide adequate amounts of a balanced ration.
- Plan a health program to prevent disease.
- Control internal and external parasites.
- Castrate and dehorn at a young age.
- Trim feet regularly.
- Observe animals daily to provide immediate treatment.
- Sort and load animals safely.
- Rotate pastures.
- Cull animals that don't fit the management system.

References: Colorado State SSQA Program
Ohio 4-H Livestock Resource Handbooks

Ohio Line Fence Law

(excerpted from Extension Fact Sheet ALS-1001-2000) <http://ohioline.osu.edu/als-1001-2000>

[fact/1001.html](http://ohioline.osu.edu/als-1001-2000) By Peggy Kirk Hall, OSU
Extension Legal Educator

Ohio's line fence law today addresses many fence issues that have arisen over the years. The law, contained in Chapter 971 of the Ohio Revised Code (ORC), determines how line fences are to be constructed, paid for, and maintained, and provides a process for assigning and enforcing the rights of landowners sharing the fence.

Construction of the Line Fence

If one landowner wants to construct a line fence, Ohio law provides that the neighboring landowner must share equally in the cost of building the fence. Specifically, the law states that "the owner(s) of adjoining lands shall build, keep up and maintain in good repair, in equal shares, all partition fences between them. . . ."

Maintenance of the Line Fence

The line fence law also allocates responsibilities for repairing and maintaining existing line fences. According to the law, adjoining owners shall ". . . keep up and maintain in good repair" the line fence between their properties. As with construction of a new fence, the adjoining landowners are equally responsible for repairing and maintaining an existing fence. Ohio law does not state which neighbor is responsible for which part of the fence. However, it is common practice for neighbors to agree to be responsible for the half of the fence to their right as each stands looking at the fence from his or her respective property.

Requirements for Type and Condition of Fence

Certain types of line fences are not permitted in Ohio. A line fence may not be entirely composed of barbed or electric wire unless the adjoining landowner consents in writing. Placing one or two strands of barbed wire at the top of another type of fence does not require a neighbor's approval if the barbed wire is at least 48 inches from the ground. Living fences are prohibited with two

exceptions – osage or blackthorn hedge may be used to create a line fence.

Maintaining the Fence Row

Ohio's line fence law also requires landowners to keep the fence row free of certain types of vegetation. A property owner must clear all brush, briars, thistle, or other noxious weeds from fence corners and within four feet of the fence. Trees and vines may remain in the fence row.

Enforcement of the Line Fence Law

Disputes over line fences fall within the jurisdiction of the township trustees in the township where the fence is located. A landowner seeking enforcement of the line fence law must turn first to the township trustees for an "assignment" of fence responsibilities. Note that a landowner may not seek enforcement against a resident of an adjoining state, where the property line borders two states.

The Fence Viewing Process

Where an adjoining landowner refuses to pay for half the cost of constructing or maintaining a fence, the aggrieved landowner may request a "fence viewing" by the township trustees. The fence viewing is an examination of the fence or the location where the fence is to be built. The trustees must notify all affected landowners at least 10 days in advance of the viewing, and each landowner is permitted to be present.

After the fence viewing, the trustees determine the allocation of costs or responsibilities for the fence. The trustees must make a written "assignment" of each landowner's obligation and notify the landowners of the assignment. If a landowner fails to abide by the assignment, the aggrieved landowner may apply for relief with the township trustees. The trustees then have the authority to order construction of the fence by a third party. The costs of construction, if not paid by the landowner, may be paid by the county auditor and assessed as a tax against the landowner's property.

If a landowner disagrees with the trustees' assignment, he or she has the right to make an appeal of the decision. The Court of Common Pleas in the county where the land is located hears the appeal by reviewing the trustees' decision and determining its validity. The landowner also has the right to appeal the county court's determination, which would occur within the Ohio Court of Appeals. A dissatisfactory decision by the Court of Appeals may be reviewed by the Ohio Supreme Court, if the Court accepts the case for review.

Livestock and Line Fences

Where livestock break through a line fence, the owner of the livestock is responsible for all damages resulting from the trespass, including damages to the fence. However, where livestock trespass as a consequence of a line fence being in disrepair or inadequate, the person responsible for constructing or maintaining the line fence is liable for all damages. In this case, Ohio law creates a procedure in which damages are assessed by three disinterested residents appointed by the local court. If the neglectful party does not pay the determined amount of damages, the injured party may use the written assessment as proof of actual damage in a civil lawsuit.

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<http://south.osu.edu/cle/news.htm>
(newsletter archive)