UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

KSU COOPERATIVE EXTENSION PROGRAMS
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Goat Producer's Newsletter

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Kentucky Cooperative Extension Service Evaluates FAMACHA

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The Cooperative Extension Services of the University of Kentucky and Kentucky State University jointly collaborated in the evaluation of **FAMACHA**, the latest tool used in the battle against the intestinal parasite, *Haemonchus contortus*. This prolific parasite has been described as a primary barrier to the development of the small ruminant industry throughout the world.

FAMACHA

UK County Extension Agents and KSU Small Farm Assistances conducted a pilot study in 8 Kentucky counties. The primary objective was to become familiar with the process and to evaluate the accuracy of the method under Kentucky conditions.

Gray eye membranes indicates anemia.

FAMACHA is only affective in evaluating levels of *Heamonchus*. This particular parasite is much more destructive than most stomach worms because of the tremendous reproduction potential and blood feeding on the parasitized animal. Many workers estimate that as much as 10% of the total blood volume may be consumed by the parasites each day. In general, extension personnel, participating in the pilot project have been supportive of the method. *The results of the 2004 Pilot Project for evaluation of FAMACHA will be reported in the next GPN. These agents will also conduct trainings in multi-county areas.*

Comments from the Goat Pastures of Kentucky

Preliminary Observations on the use of the FAMACHA chart

Gil Myers, PhD
Myers Parasitology Services

During 2004, a number of Kentucky goat producers, extension leaders and ruminant veterinarians have gained experience with the FAMACHA monitoring system.

What is FAMACHA?

FAMACHA is named for it's originator, Francois Malan, a South African livestock parasitologist concerned with the problems of worm control in the large sheep and goat industries of that country. The climate of South Africa includes an area of high summer rainfall. It is in this area where worm problems are an annual concern and most costly to producers. In such wet regions where sheep and goats are, raised Haemonchus is a major problem. If Haemonchus is not controlled, the economic viability of the goat operation can be threatened. This worm lives in the true stomach (abomasum - also known as the fourth stomach). Haemonchus is a true bloodsucker. The amount of blood it removes from the animal can result in anemia and death. In Kentucky, such deaths typically occur during summer grazing.

The basis for this system is an eye chart that has been developed as an anemia guide.
This guide is reproduced in this newsletter.

Why is FAMACHA important?

This monitoring system is designed to be practical for on farm use. Its use only requires that animals be restrained during examination of the lower eyelid. The method of examination is easy to learn. With proper training two people can quickly examine numbers of goats. The examination yields immediate results. This timely information can result in fewer deaths by identifying those animals that need treatment.

If a goat shows paleness inside the lower eyelid (# 3, #4, #5 on the chart), it should be dewormed at that time or if a goat has a healthy eye color (#1, #2), there is no need to deworm it at that time. This saves producers money by lowering treatment costs. It also insures that goats needing treatment when they actually get it medicated.

By deworming only those animals that need it, selection of drug resistant strains of worms is slowed and the life of a given dewormer on a given farm can be prolonged. This is an important benefit for Kentucky goat producers; because we have few dewormers for goats and drug, resistance is a common and widespread problem in the goat industry.

In addition, FAMACHA helps us identify those individual goats and sheep that are chronically affected by worms. Identification of such animals and removal from the flock improves overall worm control. Published research shows that 20 % of the flock sheds about 80 % of the worm eggs. During initial FAMACHA training at the UK Goat Demonstration Farm in May, worm egg counts were collected from a group of 4-year-old does. High egg counts were recorded in only 20 % of these does.

Long term, FAMACHA can be used by breeders as a genetic selection tool to identify breeds and those individuals within every breed that are more resistant to worm infection.

What are the costs?

The main cost associated with FAMACHA is the additional time needed to check for anemia every two weeks during the high risk summer months. Two people can easily catch 30 does in an hour, check eyes and deworm as needed. FAMACHA charts themselves cost $ 10. Some local goat associations are paying half the cost for association members. When deaths are reduced, the charts and extra labor quickly pay for themselves.

Kentucky experiences

Early this year, I ran a worm-egg-count reduction test for an area goat producer. Results showed the two dewormers she had been using were no longer effectively removing worms. This is a good example of what the FAMACHA system can help us avoid.

Initially, I was a bit skeptical about how FAMACHA would be received. I have since learned that many Kentucky goat producers were familiar with the idea, some have been checking eyes for years. All welcomed this new approach to worm monitoring and control.

Currently, 7 county extension agents are working with individual goat producers to gain experience with FAMACHA. Each agent is doing the eye scoring and collecting fecal pellets for worm egg counts. Additional research is underway at KSU and UK. In these projects worm egg counts are generally correlating with the anemia scores. However, the anemia scores are a subjective measure and each person may score a bit differently.

Several county and regional goat associations have already had FAMACHA training. These training sessions were well attended and showed there is tremendous interest in improved worm monitoring and control for goats statewide.

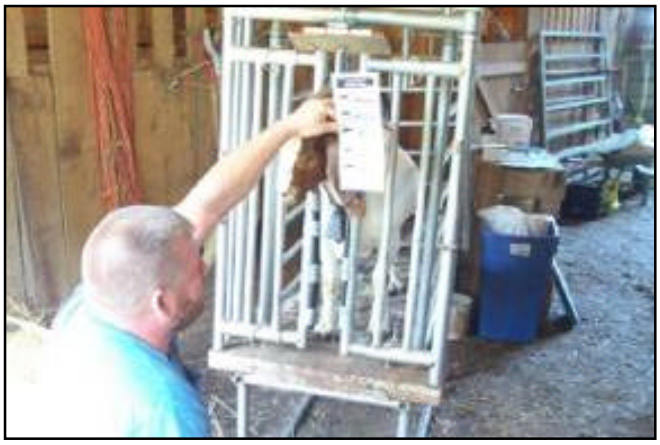
Some producers have found eye scores did not change or got worse after deworming. When that occurs, it is important to evaluate the dewormer used. In fact, the FAMACHA program recommends determining the effectiveness of the dewormer to be used BEFORE starting the program. Local veterinarians are a convenient place to have worm egg counts done before and after deworming. This is the most practical way to evaluate if a dewormer is actually removing a high percent of the worms. **BE SURE THE DEWORMER YOU ARE USING IS EFFECTIVE.**

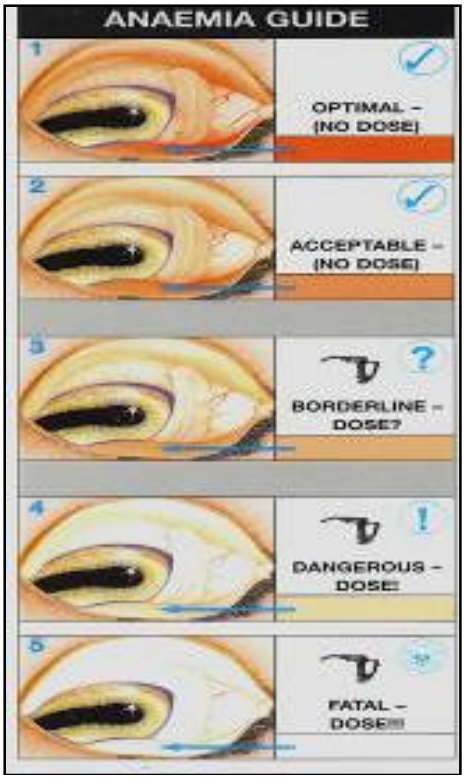
Animals can look healthy with good body condition and no diarrhea, yet be anemic, and need deworming. Such animals can be identified and saved using periodic FAMACHA monitoring. Since June, I have been monitoring my flock every two weeks. In July, I dewormed 56 % of my adult does based on the FAMACHA anemia score. However, the August 6 eye-checks were delayed. I lost a nice high percentage Boer doe 14 days later as a result. I recovered half a pint of Haemonchus from her abomasums. These worms were filled with blood. This doe probably died from anemia caused by the worms. She did not have bottlejaw and was in very good body condition at time of death. More timely checking of her eyes would have identified the problem sooner and would probably have saved her.

As goat producers, we often scratch our heads about whether a bout of diarrhea is due to worms or coccidiosis. This summer a wether on my farm developed serious diarrhea. Examination of the lower eyelid revealed a FAMACHA anemia score of 4-5.

Coccidiosis does not commonly cause anemia. In fact, a worm egg count confirmed large numbers of worm eggs and no coccidia were present. In this case, FAMACHA provided timely insight into which parasite was causing the diarrhea.

Worm egg counts are a useful tool for parasite monitoring. However, it takes time to get fecal samples processed and read. FAMACHA is quicker, inexpensive and can be done on the farm without specialized equipment. Worm egg counts before and after treatments are still the best way to evaluate whether a dewormer is effective. Worm egg counts every two years to check on product effectiveness and whenever worm resistance is suspected is recommended in the FAMACHA system. *Additional FAMACHA trainings are being planned for next year. Contact your county Extension Ag Agent should you be interested.*





Knott County Review of FAMACHA

Keith Hackworth, UK

Knott County Extension Agent, Keith Hackworth has been evaluating FAMACHA on 20 goats with Talmadge Childers and Doug Banks (See photo above). Keith Hackworth says that he sees the benefits of FAMACHA because the process enables farmers to make informed decisions for genetic improvement through culling practices. Hackworth reports that even a single bloodline carrying genes for extreme susceptibility to *Haemonchus* can be observed readily using the FAMACHA technique. Goats within that lineage can be identified and managed appropriately. For an example, when the mother shows signs of chronic parasitism and anemia likewise her offspring may show the same genetic tendencies. These related animals may show the same eye membrane color simultaneously within the grazing period regardless of management.