

## Open letter to sheep and goat producers regarding the FAMACHA© program

Thank you for your interest in finding out more about the FAMACHA© system for control of *Haemonchus contortus* (barber pole worm). FAMACHA© provides a tool to identify anemic animals, thus reducing the number of dewormer treatments given, while also maintaining good overall parasite control. This will significantly slow the development of resistance to dewormers which is becoming an extremely important concern in small ruminant production.

Recent evidence suggests that the most important factor affecting the rate of development of drug resistance is the proportion of drug-treated worms to untreated worms in a worm population. The untreated portion of the population, referred to as refugia, provide a pool of genes sensitive to dewormers, thus diluting the frequency of resistant genes. At the moment of treatment, refugia consist of all the worm eggs and larvae already on pasture and all the worms (and future eggs and larvae) in the animals that were not treated. Parasitologists now believe that the most important factor responsible for the widespread development of dewormer resistance is the common practice of treating all animals in a herd at one time. This practice leaves no worms in refugia; the only eggs deposited onto the pasture for several weeks following treatment are from those worms that survived treatment. We know that worm burdens are not evenly distributed in animal populations; 20-30% of the animals harbor about 70-80% of the worms. These 20-30% are primarily responsible for contaminating the environment with infective parasite larvae for all the other animals. If farmers could identify and treat only those animals that truly needed treatment with dewormer, they would save money by reducing the number of treatments given on a herd basis and greatly reduce the selection for resistance by maintaining a large refugia. Additionally, identification and culling of animals requiring repeated treatments could be used as a tool to improve the overall genetic resistance of the herd. The major problem preventing implementation of selective treatment for *H. contortus* has been lack of a simple and reliable field test for anemia.

Recently, a clinical on-farm system, called FAMACHA©, was developed in South Africa for classifying animals into categories based upon level of anemia. Since anemia is the primary pathologic effect from infection with *H. contortus*, this system can be an effective tool for identifying those animals that require treatment (but only for *H. contortus*). To use FAMACHA©, the color of ocular mucous membranes are observed and compared to a laminated card which has colored illustrations of eyes from sheep at different levels of anemia. The scale goes from 1 (mucous membranes are red) to 5 (mucous membranes are white); all animals are examined at regular intervals and only animals scored as being anemic are treated. In evaluation trials in South Africa, use of FAMACHA© reduced the number of dewormer treatments given by up to 90% as compared to previous years. This system has now been validated in the US by my colleagues in the Southern Consortium for Small Ruminant Parasite Control (SCSRPC) and myself as part of our “Novel methods for sustainable control of gastrointestinal nematodes in small ruminants” project, which was funded by USDA-SARE (Sustainable Agriculture Research and Education).

FAMACHA© is distributed under the auspices of the South African Veterinary Association. Professor GF Bath (project coordinator for FAMACHA© in South Africa) has requested that

distribution in the US be made only through the SCSRPC via the laboratory of Dr. Kaplan (University of Georgia) and that FAMACHA© cards are only to be sold directly to veterinarians or other trained animal health professionals. These individuals are expected to provide training in the proper use of the FAMACHA© system prior to re-selling the cards. The exception to this will be when sheep or goat producers attend a formal FAMACHA© training workshop. This restriction in distribution is required by the agreement that we have with Professor Bath in South Africa. Extensive experience in South Africa and our recent personal experiences in training sheep/goat producers reveal that although the system seems simple, without adequate training most lay individuals lack the necessary knowledge to properly implement the system. Failure to understand the limitations and potential problems with the system combined with the problem of drug resistance may lead to improper implementation. This could result in disappointing results and animal death. Such an outcome will have the effect of giving FAMACHA© an unwarranted bad reputation.

As a result, it is recommended that FAMACHA© only be used after proper instruction is given and when veterinary support is available. Therefore, sheep and goat producers will need to work with a veterinarian or other animal health professional in order to acquire a FAMACHA© card unless they attend a training workshop. Those producers that do not have a veterinarian in their area who is willing to work with them on parasite control issues will need to find an extension agent or animal scientist who is willing to take on this role, or participate in a training workshop if they wish to obtain a FAMACHA© card. If you do not know of a county agent in your area who can supply this information, you may send a message to the email address listed below and ask for a list of FAMACHA trainers in your State.

Veterinarians and other animal health professionals trained in the proper use of FAMACHA© who purchase FAMACHA© cards will be required to sign a document stating that they understand that they have an obligation to train their clients/trainees in the proper use of the FAMACHA© system prior to re-selling the cards. If you are interested in learning more about FAMACHA, please see the SCSRPC website at [www.scsrpc.org](http://www.scsrpc.org) or have your veterinarian or extension agent send an email request for more information to: [famacha@uga.edu](mailto:famacha@uga.edu) Veterinarians can purchase FAMACHA© cards by making requests using this same address.

Sincerely,

Dr. Ray M. Kaplan  
University of Georgia  
College of Veterinary Medicine