

The FAMACHA[®] System

LIMITING THE EXPANSION & PERSISTENCE OF DRUG RESISTANT PARASITES

Background

Haemonchus contortus, also known as barber's pole worm, is a blood-sucking parasite and is considered to be the main cause of anemia in small ruminants in the southeastern United States. Clinical signs of anemia are most easily recognized by pale-whitish blanching of the conjunctiva surrounding the eye. The severity of the anemia may be estimated using an anemia (FAMACHA[®]) score (range 1 to 5) that uses conjunctival color to estimate not only the degree of blood loss but also the degree to which the animal is parasitized (fecal egg counts). The FAMACHA[®] score is a useful tool for assessment of anemia caused by parasitism, but also is useful for determining which animals need to be treated by a de-wormer or tested for parasites.

Purpose

The primary purpose of implementing the FAMACHA[®] system in a herd is to reduce resistance of *Haemonchus contortus* against what currently includes all classes of anthelmintics (drugs that expel parasitic worms). The primary cause of this resistance is the continuous and repetitive use of the same anthelmintic, the result of which is removal of only susceptible worm strains from a herd, leaving behind those that are genetically resistant. The FAMACHA[®] approach helps solve this problem by creating a state of "refugia" in which part of the parasite population, including those free living on pasture and worms in untreated animals, escapes exposure to anthelmintic use. These refugees are then available to propagate and "dilute" resistant worms in the host. This helps to maintain a more balanced and drug-susceptible population which helps to limit the expansion and persistence of drug resistant parasites.

Application

- The FAMACHA[®] system forms part of a strategic management approach for infestations of only *H. contortus*. It **cannot** be used alone, and must be used in conjunction with a properly designed worm control program.
- Proper training is imperative before using this system.
- The FAMACHA[®] guide chart must be used during inspections of the eyes.
- All animals in the herd should be examined every 2-3 weeks and the FAMACHA[®] score noted for each animal.
- Some animals are **more susceptible** and may need more frequent examinations (young, pregnant, debilitated, aged animals).
- Several factors may change eye conjunctival color. Do not use the system during the heat of the day, in dusty conditions, or in the presence of eye infections. Remember that other causes of anemia exist such as iron deficiency, copper toxicity, and blood parasites.
- Evaluation of conjunctival color can be done quickly, efficiently, and effectively.
- Treat animals that score 3, 4 or 5 out of 5 on the FAMACHA[®] scale. Cull or separate from the herd chronically parasitized animals (repeated scores of 4 and 5).
- Representative fecal egg counts of about 10% of each production group should be monitored every 3-6 weeks during the spring and summer.

- Other important checks include body condition score and fecal consistency.
- The system is available only through veterinarians, who may train producers to receive certification to use the system.

Advantages

- Decreases the amount and frequency of anthelmintic treatment for the majority of the herd.
- Slows the development of anthelmintic resistance.
- Is relatively inexpensive, if labor costs are not considered.
- Allows earlier diagnosis of other problems that might have gone unnoticed since animals are examined more frequently.

Have your veterinarian call
for more information!

865-974-5701

The FAMACHA[®] system was developed by Dr. Francois (Faffa) Malan and is distributed under the auspices of The South African Veterinary Association (Prof. Gareth F. Bath, Project Coordinator). Distribution in the USA is through the laboratory of Dr. Ray M. Kaplan, University of Georgia, College of Veterinary Medicine. famacha@vet.uga.edu