

An Eye Test for Barber Pole Worm

Efforts to keep the barber pole worm, *Haemonchus contortus*, from infecting goats and sheep have taken a harrowing turn of late.

The blood-sucking parasites, which thrive in heat and humidity and induce fatal cases of anemia and bottle jaw in small ruminants, have developed strong resistance to chemicals—called “anthelmintics”—commonly used to control the parasites.

“This resistance is a result of treatment overuse, and it now threatens the entire goat and sheep population of the eastern United States,” says animal scientist Joan Burke of ARS’s Dale Bumpers Small Farms Research Center in Booneville, Arkansas. “The key now is to manage the worm’s spread and to remain vigilant.”

Burke and collaborators with the Southern Consortium for Small Ruminant Parasite Control (SCSRPC) aim to make a simple test designed for spotting infected animals a key element of this vigilance. SCSRPC—made up of scientists, veterinarians, and extension agents—was formed in response to the threats posed by anthelmintic-resistant worms.

The test is called the FAMACHA eye color chart. Named after its developer, South African livestock parasitologist Francois “Fafa” Malan, it consists of a plastic card featuring five high-resolution photographs of the eyes of infected goats and sheep.

The photos focus on the shade of redness inside the eyelids, with each showing an animal at specific stages of *Haemonchus* infection. The card numerically designates each stage, with 5 representing severe anemia.

“It’s the proportion of red cells to plasma that determines whether an animal is healthy or unhealthy,” says Burke. “Since the worms are bloodsuckers, a heavy presence will be evidenced by a low ratio of red cells to plasma,” and the eyelid will appear pale.

Burke warns that proper use of the chart is vital for gaining accurate results. Hence, one should not use it without being properly instructed, and only the actual chart—not copies—are to be used.

“There are other factors, including other parasites, that can cause anemia,” says Burke. “That’s why using the chart properly—as well as being keenly aware of your flock management and of what environmental conditions the barber pole worm favors—is very important.”

But the FAMACHA chart’s impact can be great. “By deworming only infested animals requiring treatment, producers can save money and greatly decrease development of resistance,” says Burke, adding that the challenge now lies in finding the best means to apply the chart.

The FAMACHA test proved 92 percent accurate in a study Burke and other collaborators—including plant physiologist Mary Williams of ARS’s Subtropical Research Station in Brooksville, Florida—conducted on 847 sheep and 537 goats in Arkansas, Georgia, Louisiana, Florida, and the U.S. Virgin Islands.

Information on obtaining a FAMACHA chart is available on the SCSRPC website, www.scsrpc.org. Nonveterinarians can only purchase the chart if they have received training in its use.

This work is part of outreach efforts against the barber pole worm by SCSRPC and USDA’s Sustainable Agriculture Research and Education program.—By **Luis Pons**, ARS.

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