



New Test More Effectively Detects Sheep Parasites

Sheep herds can be tested for barber pole worms with a new test developed by Oregon State University and the University of Georgia.

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Barber pole worms cause internal bleeding in sheep, leading to anemia and decreased wool production, among other symptoms. A new test for the parasite will produce results in as little as two days. Researchers at Oregon State University and the University of Georgia have developed an improved, more efficient method to test for barber pole worms, the most serious of the parasitic worms in sheep. Barber pole worms (*Haemonchus contortus*) result in hundreds of millions of dollars in losses every year for the global sheep and wool industries.

The technology is now available, and will allow a faster, easier and less expensive method to test for the presence and quantity of barber pole worms, a species that is very pathogenic to sheep, goats and llamas. It's a lectin staining test based on a peanut agglutinin that binds to eggs of the barber pole worm and can be easily seen with a microscope using ultraviolet light. The test is an improved version of previous technology developed by scientists in Australia that was slower, less effective, more expensive and required more advanced training to perform, researchers say.

The test will help sheep ranchers deal with worms more quickly and effectively, optimize their management practices, and sometimes avoid costly therapies.

Findings about the new test were published in *Veterinary Parasitology*, a professional journal.

"This particular parasite is much more pathogenic in sheep than other worms, and previous methods to detect it were very labor intensive and often not commercially practical," says Michael Kent, an OSU professor of microbiology. "Now ranchers and veterinarians can test for this problem and target their management or treatment strategies much more effectively."

The barber pole worm causes significant production losses in sheep. In some cases, it's the limiting factor to sheep production on pasture lands. The parasites can cause internal bleeding, which in turn can lead to anemia, poor food conversion and growth, low protein levels, reduced lamb production and wool yield, and, in some cases, death.

Also known as wire worms, barber pole worms are blood-sucking parasites that pierce the lining of the sheep's stomach. They are prolific egg producers, releasing up to 10,000 eggs per day, and often cause problems in warmer climates or during the summer. Once barber pole worms infect a sheep, expensive treatments or complex management strategies are often needed to address the infection.

The lectin staining test was developed by microbiologists and veterinary doctors at OSU and UGA, and is now available through those institutions. Its use should continue to expand and become more readily available to sheep farmers around the world, Kent says.

The test may also be valuable to farmers interested in organic production of sheep, goats and llamas, who try to avoid use of chemical treatments in maintaining the health of their animals.

"One of the current testing tools commonly used by sheep and goat farmers in dealing with *H. contortus* is the FAMACHA method in which the farmer compares the animal's lower eyelid color to swatches on a card to determine the animal's anemia status," says Bob Storey, a UGA researcher who co-developed the lectin staining test. However, this method works only if the barber pole worm is the primary parasite in a sheep herd's worm population.

"For the veterinarian dealing with an anemic animal and a heavy parasite burden, the lectin staining test provides quick feedback as to whether the anemia is parasite-based or may be due to another cause," Storey says.

The test requires only a small amount of a sheep's feces. Results are available in as little as two days. Farmers interested in obtaining the test can get information on sampling, test results and fees from the Veterinary Diagnostic Laboratory at OSU (541-752-5501) or Bob Storey at the Department of Infectious Diseases at UGA's College of Veterinary Medicine (706-542-0195).

As with any animal health concerns, results should be reviewed with a veterinarian so that proper treatment programs can



be put in place, researchers say.