

GALVmed partnership launches first- ever field test for animal trypanosomiasis


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A simple diagnostic device is enabling farmers in Cameroon to test for the deadly livestock disease Animal African Trypanosomiasis (AAT or Tryps). AAT is caused mainly by two parasite species, *Trypanosoma vivax* and *Trypanosoma congolense*, which affect cattle in much of sub-Saharan Africa. However, according to veterinary experts, a new rapid field test can identify whether or not an animal is infected with the *T. congolense* or *T. vivax* strain through a single drop of blood, reducing the occurrence of misdiagnosis and helping farmers avoid costly expenditure on unsuitable treatments. Prior to the test, animals were only treated for AAT after showing vague clinical signs of the disease, which can be easily confused with other common problems such as tick-borne diseases, and often result in the use of the wrong product for the wrong disease. However, due to the test's quick results, farmers do not need to wait for the appearance of clinical signs before treating the animal.

AAT is a major limiting factor in the development of animal production in Cameroon – as it is throughout the rest of sub-Saharan Africa. The disease is endemic in 40 African countries and accounts for up to a 50% loss in milk and meat production on the continent. According to the Food and Agriculture Organization of the United Nations, losses associated with the disease in Africa are estimated at between US \$1 and 5 billion annually. Clinical signs for AAT include weakness, lethargy, anaemia and fever, which lead to weight loss as well as fertility and milk reduction. However, symptoms alone do not allow for an accurate diagnosis, and diagnostics for AAT parasites are limited or may not produce accurate results.

Partnering for a practical solution

To address this issue, the Global Alliance for Livestock Veterinary Medicines (GALVmed) – a non-profit company that makes livestock vaccines accessible and affordable to smallholder farmers in Africa and South Asia – has worked with Ceva, the University of Bordeaux, the French research agency CIRAD and teams of researchers throughout East, West and Southern Africa to develop the first available rapid field diagnostic test against animal trypanosomiasis in the world. This test, called VerY Diag, is able to quickly detect infection with the *T. congolense* and *T. vivax* strains.

GALVmed's partner, major international animal health company Ceva, is now leading the initiative to increase the availability and reach of VerY Diag, which is now used in the Littoral, West, Northwest and Northern regions of Cameroon.

“The test now allows millions of smallholder cattle farmers an efficient way to test their cattle and provide the right cure,” says country representative, Dr Fidele Marcel Abena of Ceva Animal Health. The affordable device, does not require electricity or any additional equipment, making its deployment in resource-limited settings very practical.

Increasing incomes for livestock keepers

Many farmers attest to the rapid field test’s ease of use and effectiveness in protecting cattle health. Since the launch of the diagnostic in October 2016 by Ceva, farmers have been able to identify the right treatment for their cattle. As a result, cattle are producing more milk and achieving higher market prices. “Before, most of my cows did not look healthy, weighing below 250 kg and forcing me to sell them at the give-away price of less than 200,000 fcfa (US \$340) but now I am proud to see my cows weighing over 300 kg and selling at 300,000-400,000 fcfa (US \$500-680),” says Amadou Djibrilla, a farmer from Ngaoundere in the Adamawa Region of Cameroon.

“This innovation has given farmers a plus, it is like health security for our cattle,” says Aboubakary Hamadou, a cattle farmer also from Ngaoundere. In 2012, Hamadou lost over 50 cows and another 26 in 2015 due to misdiagnosis and ineffective treatment of AAT. Since utilising the test prior to applying treatment, he has not lost a single animal.

“It is a great relief for us that diagnostics now exist for farmers to test their cattle prior to applying medicines, helping us to avoid unnecessary financial waste and better protect our resources,” says Abbo Mohamadou, a cattle farmer of Ngaoundaba Ranch located 35 km from Ngaoundere. “Without the test, we used to incur great financial losses but now the situation has significantly improved,” states Mohamadou.

Handing back control to smallholder farmers

As the VerY Diag test uses antibody detection technology to enhance test ‘sensitivity’ (the ability to identify infected individuals correctly) and reduce false negative results, the test is able to detect the presence of antibodies within a few days of infection.

According to Dr Ibrahima Djibo, a support staff member at Ceva’s Cameroon office, “The test process is simple – taking a drop of blood and mixing it with a drop of reagent on the device. The red blood cells from the samples will be trapped by some of the test elements. If animals are infected, antibodies against the Trypanosome parasite will trap the parasite in the test at the ‘Tv’ or ‘Tc’ line. This will lead to the appearance of a red band (indicating a *T. vivax* or *T. congolense* infection). If animals are not infected, the red band does not appear. The results are ready in just 10-15 minutes and reading of the test results is simple and easily understood by farmers,” says Dr Djibo.

“It is important to act and treat AAT properly and as soon as possible, even before the appearance of clinical signs to save farmers the economic losses associated with reduced milk and reproductive capacity as well as reducing heavy treatment costs when the clinical disease was initially misdiagnosed and follow-ups were required,” says Dr Cyrille Chevtzoff, Ceva’s ruminant technical and marketing manager for Inter-tropical Africa. “It takes time for the cattle to recover their initial weight after treatment (up to several months) during which, the animals will require extra feeding.”

By providing farmers with rapid and accurate results, the diagnostic is effectively handing back control to the smallholder farmers whose quality of life has been affected by this disease and is a clear example of the importance of GALVmed’s focus and its partners’ work.

Written by Elias Ntungwe Ngalame

