Combating Africa’s Biggest Killer Disease of Cattle through Vaccines

East Coast fever (ECF) is the single biggest killer of cattle in 11 countries in eastern and central Africa. It kills one cow every 30 seconds and puts more than 25 million cattle at risk – that’s nearly three times the amount of all cattle in the United Kingdom. ECF also reduces the productivity of cattle, impacting the lives of individuals, families and communities that rely on their livestock for the basics and to fuel their initiatives, enterprises and dreams.

"The animal will have a sharp decrease in milk production," says Dr Kisa Juma Ngeiywa, Director of Veterinary Services in Kenya. “It won’t eat. If it recovers it will be sickly. You will notice froth, diarrhoea and even emaciation. A laboratory test will need to be done because it’s possible to confuse it with other diseases.”

It is because of these factors that the non-profit organisation, the Global Alliance for Livestock Veterinary Medicines (GALVmed), works through its partners to provide a vaccine that protects cows for life from this deadly disease.

Treating East Coast Fever

ECF is a severe livestock disease that has an impact on African economies. Livestock is a measure of wealth in Africa. Selling a cow can pay for a child’s school fees, building a house or other important needs of the farmer and his/her family. If a farmer’s cows are wiped out from ECF, then they and their family’s quality of life can be severely impacted. The farmer’s large investment in the cow will also be lost.

Preparing and vaccinating cattle against East Coast fever.

ECF is caused by a parasite that is transmitted by the brown ear tick, which is found in hay or standing grass. The disease has three methods of control, unlike most livestock diseases. These methods include:

1. Preventing the tick infestation with dip solutions
2. Treating the affected animals once sick with curative drugs
3. Vaccinating using the ‘one shot for life’ Muguga cocktail ECF infection and treatment method (ITM) vaccine

Farmers often dip and spray to protect against tick-borne diseases. However, this method will not fully protect against ECF unless farmers vaccinate their cows using the Muguga Cocktail ECF vaccine.

“There are different methods of controlling the disease,” said Dr Hameed Nuru, Senior Director for Policy and External Affairs at Global Alliance for Livestock Veterinary Medicines (GALVmed). “Many farmers traditionally try to control the tick. With this kind of treatment there is a lot of misdiagnosis. GALVmed advocates for the vaccination of animals. What we are using as the vaccine for the ECF is the Muguga Cocktail. The cocktail treats all strains together and is more difficult to make. The vaccine is a complete package and it comes with a dewormer, antibiotic and ear tag.”
The Muguga Cocktail ECF vaccine uses the infection and treatment method and a batch of the vaccine can take up to 18 months to produce.

A calf as young as one month old and a cow up to six months pregnant can be vaccinated. During vaccination, the animal is weighed. The correct dosage of 30% oxytetracycline antibiotic is injected into the muscle of the animal. The ECF is injected under the skin behind the ear. Every animal vaccinated is given an ECF ear tag.

Because of the nature of the vaccine, only trained veterinary professionals are authorised to administer it. Farmers need to be wary of unqualified individuals who may under- or overdose the animal, or who administer the single strain Marikabuni vaccine, passing it off as the Muguga Cocktail, which is a combination of three major strains that cause ECF.

Farmers Embrace the Benefits of ECF Vaccination

The number of farmers throughout East Africa who are vaccinating their cattle with the East Coast Fever (ECF) vaccination is growing, but there are still many who do not know that the vaccine exists. GALVmed and its partners continue to raise awareness of this ‘one shot for life’ vaccine throughout the region.

The farmers who have vaccinated notice healthier and stronger cattle and can sell them at a higher market price because they are vaccinated. The ECF vaccine costs from $6 to $10 per animal depending on the animal’s size.

“I encourage everyone to use the vaccine,” said Kenyan farmer Stephen Kemoi Maraba as he looked at his top milk cow. “It’s safe and effective, and you can vaccinate as early as one month of age. Whether you’ve one cow or 1000, we all face risks in farming and the ECF vaccine will prevent your cow or calf getting sick from ECF or dying from this disease.”

Smart Partnerships

GALVmed is partnered with trained vaccinators in each country to ensure farmers have official vaccinators who will administer the vaccines. Vaccinators will liaise with the farmer and any of their friends, family and neighbours who would also like to vaccinate their cattle. The vaccine comes in 40 doses and as it is a live vaccine, it needs to be administered within a few hours of mixing the vaccine. To make the most out of the vaccine, vaccinators encourage farmers to collect groups of 40 cattle for vaccinating.

The Muguga Cocktail ECF vaccine is not a new vaccine. It was developed and produced over 30 years ago by Nairobi-based International Livestock Research Institute (ILRI), its forerunner the International Laboratory for Research on Animal Diseases and Kenya Agricultural and Livestock Research Organisation (formerly Kenya Agricultural Research Institute). Now multiple actors, including GALVmed, are working to make the vaccine accessible and affordable to livestock keepers.

Dr Hameed Nuru, GALVmed’s Director for Policy and External Affairs, said, “The word ‘alliance’ in our name is key because everything that we achieve is done […] with and through partners. People’s entire careers have been devoted to the development of this vital vaccine and their work is now transforming the lives of individuals, families and communities because their cattle are no longer dying from ECF.”

New Producer for the ECF Vaccine

In December 2014, the Malawi-based Centre for Ticks and Tick-Borne Diseases (CTTBD) was officially launched as the sole producer of the ECF Muguga Cocktail. CTTBD won the tender to produce the vaccine following a tendering process by the African Union Interafrican Bureau for Animal Resources (AU-IBAR) chaired ECF regional task force, comprising government representatives of the four countries currently using the ECF Muguga Cocktail vaccine (Malawi, Kenya, Tanzania and Uganda), GALVmed, ILRI and Pan-African Veterinary Vaccine Centre (PANVAC).

The CTTBD is a very welcome addition to the fight against ECF. For three decades leading up to 2009, ECF was an economic and political disease with actors working independently and against each other. This resulted in a relatively simple disease not controlled effectively, and livestock keepers facing the results of an easily controllable disease.
CTTBD has manufactured and sold animal vaccines for over 30 years. The centre, which was established by the African Union, produces quality-assured vaccines and offers training in epidemiology, livestock economics, tick-borne disease diagnostics, geographic information systems, risk analysis and control techniques for tick-borne diseases. It looks towards establishing itself as the “Centre of Excellence” for ticks and tick-borne diseases on the African continent.

GALVmed is a non-profit organisation that works through its partners to protect livestock and improve human lives by making livestock vaccines, diagnostics and medicines accessible and affordable for the 900 million people who rely on livestock as a lifeline.

To find out more about GALVmed and its work with partners in Africa and Asia, visit www.galvmed.org.

**List of Official Vaccinators in East Africa**

**Kenya**
- VetAid contact: Dr Mpilei David on 0725330278 and Dr Gabriel Turasha on 0721473926
- BMC/Agrihaus: Dr Rawlynce Bett on 0726681441
- KDFF: Mr David Bett on 0725799246

- Sidai Africa Ltd: Dr Rezin Odede on 0722628472, 0701225949, 0703491296

**Malawi**
- BVM: Dr Poya Njoka on +265999320530
- GSJ: Dr Gilson Njunga on +265888868354

**Tanzania**
- Alpha-Veterinary Services (part of PHARMAVACS Limited): Dr Nderingo Ngowi on +255784918504
- Ronheam International: Dr Henry Mbwile on +255222116335
- Vet Agro Limited: Dr Lieve Lynen on +255786797071

**Uganda**
- ERAM: Edward Muhigirwa on +256312266283
- Scopevet: Ponsiano Kibirige on +256712273791

Heather Irish is the Communications Officer at the Global Alliance for Livestock Veterinary Medicines (GALVmed). She oversees the organisation’s American and European PR, social media channels, website and online communications. She has worked in education and government organisations in the UK and America focusing on social media, website development, PR partnerships, branding, publications and media relations. She currently sits on the Publications Committee of the Society of Antiquaries of Scotland. To follow GALVmed news, visit @GALVmed, www.galvmed.org or www.facebook.com/galvmed. Email: heather.irish@galvmed.org.