

Farmers in East Africa can now easily access the East Coast Fever vaccine



There's delight behind the bright eyes of Stephen Kemboi Maraba as he shows us around his farm in Eldoret. Clearly he's passionate about this land and these animals and it's not hard to see why. Appreciation for the quality of the cattle is reflected in the broad grins and hushed reverence of fellow Kenyans Tindih Heshborne and Keziah Kamau who recognise that this is farming in the premier league. These are visitors from the NGO, GALVmed (the Global Alliance for Livestock Veterinary Medicines) which is working in Kenya and over 20 other countries to make livestock vaccines accessible and sustainable to support the livelihoods of small-scale farmers.

Vaccinating his cattle against East Coast fever (ECF) or Ndigana Kali (Swahili) is a key part of Mr Maraba's strategy to protect his animals against ECF, a disease which poses the greatest challenge to cattle production in East and parts of central Africa, infecting 11 countries and putting millions of cattle at risk.

"I encourage everyone to use the vaccine" states Maraba, smiling as we pause to admire his top milk producer. "One shot of the ECF Muguga cocktail vaccine has protected this cow for life and you can vaccinate as early as one month of age. It's safe and effective. Whether you've 1 cow or 1,000, we all face risk in farming, the big man chuckles wistfully "and the ECF vaccine will prevent your cow or calf getting sick from ECF or dying from this disease."

DAIRY SECTOR STAKEHOLDERS

It is the ECF vaccine and a Farmers' Day in nearby Mosoriot organised in conjunction with the Kenyan Dairy Farmers' Federation (KDFF) with fulsome participation from the other official Kenyan Distributors Sidai Africa Limited and BMC/Vetaid that has brought the team from GALVmed here. Dr Hamed Nuru GALVmed's head of policy and external affairs is quick to assert the collaborative approach of his organisation. "The word Alliance in our name is key because everything that we achieve is done so with and through partners." A vet with a background in research and teaching, Nuru was once instrumental in protecting Botswana's largest cattle region from FMD. As he meets with farmers and members of the co-op at the Leichago milk cooling plant it's apparent that his decades of policy-wrangling have not diminished his love of cattle nor his commitment to the small farmer's right to accessing quality livestock health products at an affordable price.



Farmer Maraba with GALVmed team after vaccinating 400 cows at his farm in Eldoret.

This is the origin of the name "ECF-Muguga Cocktail ITM". The United Nations Development Programme (UNDP), the Food and Agriculture Organisation of the United Nations (FAO), national veterinary services and private vets in East Africa and many international institutions have contributed to the existence of the vaccine over the decades. Acknowledging the contribution of all these players matters to Nuru, because, as he explains: "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"

VACCINATION AND TICK CONTROL

The control of ECF has been an issue for cattle farmers for generations. Today control focusses on two fundamental pillars: vaccination and tick control. There is also a limited focus on treatment of individual animals which is more applicable in the dairy sector. If followed properly these will allow farmers to combat the disease and focus on increasing farm productivity and profitability. Vaccination has been shown to reduce calf related mortality to 2%. Vaccination is widely available in Kenya, Malawi and Tanzania and is also being made available in Uganda.

WHERE TO GET THE ECF VACCINE

The current registered distributors in Kenya, Malawi, Tanzania and Uganda are:

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| Kenya VetAid contact: Dr. Mpilei David :0725330278, Dr. Gabriel Turasha:0721473926 BMC/Agrihaus: Dr. Rawlynce Bett :0726681441 KDFF: Mr. David Bett 0725799246, Tangus: 0721276798 Sidai Africa Ltd: (Dr. Rezin Odada: 0722628472, 0701225949, 0703491296) |
| Malawi BYM (Tel +265999320530, Dr Poya Njoka) GSJ (Tel +265888968354, Dr Gilson Njengwa) |
| Tanzania Alpha-veterinary Services (Tel +255784918504) Dr. Nderingo Ngowi) currently part of PHARMAVACS Limited. Nonheam International (Tel +255-22-2116335, Dr Henry Mbwile) Vet Agro Limited (Tel +255786797071, Dr Lieve Lynen) |
| Uganda ERAM (Tel + 256312266283, Edward Muhigirwa) Scopevet (Tel + 256712273791, Ponsiano Kibwiga) |

Uptake of the ECF vaccine is growing steadily as farmers who adopt vaccination see the massive benefits of reduced mortality, reduced sickness and consequently improved productivity. Not only does this allow for herd numbers to grow as mortality drops, it also allows for improved production as ECF vaccination prevents clinical disease and the need to treat sick animals. This reduces the immediate associated cost of treatment and loss in milk production, fertility and growth. The clear outcome is better herd performance and improved herd genetics as the pressure on disease selection is also alleviated.

The one shot for life vaccination always comes as part of a package which includes a de-wormer (which supports growth at a time when calves face a high tick burden) and a specific ear tag to prove that vaccination has been carried out by a trained vaccinator. Having a certified vaccinator perform the infection and treatment method is critical and this is a live vaccine and like semen for artificial

insemination (AI), it needs to be transported in liquid nitrogen and handled very carefully it is then thawed and mixed with a diluent for delivery into a very specific part of the animal's body. All this sounds quite complicated but when performed by a trained professional it works like clockwork and the ECF ear tag shows that the animal has been protected against ECF.

KEEP BOOSTING THE IMMUNITY

It is also important to understand this vaccine in the context of tick treatment. Ticks are not going to disappear and still need to be addressed for two reasons. Firstly, the vaccine protects for life after one shot and does so as it relies on an amount of tick challenge to "keep boosting the immunity" of the vaccinated animal. So an acaricide programme that allows for some controlled tick challenge is essential. Secondly it is known that ticks carry diseases other than ECF like Anaplasma (Swahili: Ndigana barkid) and Babesia (Swahili: Ugonjwa wa kufojia damu) and protecting against these at the same time is important.

The loss of an individual cow with the associated cost of replacement can have serious implications for a small-holder dairy farmer or Pastoralist. ECF vaccination provides a way of insuring against this loss and reducing risk. The vaccine is priced at around \$6 to \$10 per animal depending on animal size.

ECF vaccination is available through official registered distributors within the countries mentioned and the aim is to continue this registration process to cover all 11 key ECF focus countries.

ECF Vaccine Key Facts:

- One shot of the vaccine is for life
- Calves can be vaccinated as early as one month of age.
- Pregnant animals should not be vaccinated in the last trimester
- The Vaccine comes in 40 doses, so work with neighbours and relatives to have 40 animals on one day, once reconstituted the vaccine lasts for 6 hours, the vaccinator will come by appointment

With ECF vaccine availability and delivery on to farms constantly improving, this key preventative measure against ECF is becoming central to appropriate control. While vaccination cannot eliminate disease, it will protect your cattle in infected areas leading to better outcomes for farmers and their animals in East Africa.

CHOICE AND OPPORTUNITY



Dr. Hamed (GALVmed-Senior Director of Policy and External Affairs) vaccinating livestock at Mosoriot.

Around 900 million people rely on their livestock for daily needs. As livestock keepers in East Africa understand well, when disease strikes, the loss of livestock or reduced production impacts livelihoods and limits choice and opportunity.

MORE ABOUT GALVmed

The Global Alliance for Livestock Veterinary Medicines (GALVmed) is an NGO working with and through partners to make livestock vaccines, medicines and diagnostics accessible and affordable to the millions for whom livestock are essential for income. Working in over 20 countries, GALVmed has offices in Nairobi (Kenya), Edinburgh (UK) and New Delhi (India).

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Application of Ear Tag after ECF vaccination

Nuru speaks of the evolution of the ECF vaccine, noting the involvement of multiple organisations. He pays tribute to the fundamental role played by the Nairobi-based International Livestock Research Institute (ILRI) and its forerunner, the International Laboratory for Research on Animal Diseases (ILRAD) in researching, developing and producing the vaccine. An ECF taskforce, chaired by the African Union - Inter-African Bureau for Animal Resources (AU-IBAR) and comprising the African Union Pan-African Veterinary Vaccine Centre (AU-PANVAC) and representatives of the Governments of Kenya, Tanzania, Uganda, Malawi, ILRI and GALVmed was successful in facilitating the registration of the vaccine in Kenya, Tanzania and Malawi. Nuru highlights the Minister for Livestock in Kenya for the personal commitment he has had in making the vaccine available in Kenya.

PROVIDE DEMAND DRIVEN VACCINE

The ECF task force partnership put out an invitation to tender for the production of the ECF vaccine. The process resulted in the African Union-Centre for Ticks and Tick-Borne Diseases, (AU-CTTBD), based in Lilongwe, Malawi, being invited to manufacture the East Coast fever vaccine. The Centre for Ticks & Tick Borne diseases (CTTBD) is an African institution with a mandate to provide demand driven support in the control of livestock diseases for the development of the livestock industry in Africa. ILRI has been working with GALVmed in technology transfer to pass the baton of producing the vaccine from ILRI to CTTBD.

GALVmed has been helping to build CTTBD's capacity to produce the vaccine, a process which takes 18 months from start to finish. Meanwhile an ILRI-led consortium which includes GALVmed and other partners has begun work on a next generation vaccine.

LONG ACTING ANTIBIOTIC

Nuru explains that this process of the existing vaccine is known as the Infection and Treatment Method (ITM) because it involves injecting the animal with the parasite, (transmitted in nature by the brown ear tick), and immediately treating it with a long acting antibiotic (oxytetracycline). ITM protocol was developed by the former East African Veterinary Organisation at Muguga, now the Veterinary Research Centre and part of the Kenya Agriculture Research Institute (KARI).



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