

Theileria (January Disease) BOLVAC Vaccine: A remedy to antibiotic mis and overuse in cattle population of Zimbabwe

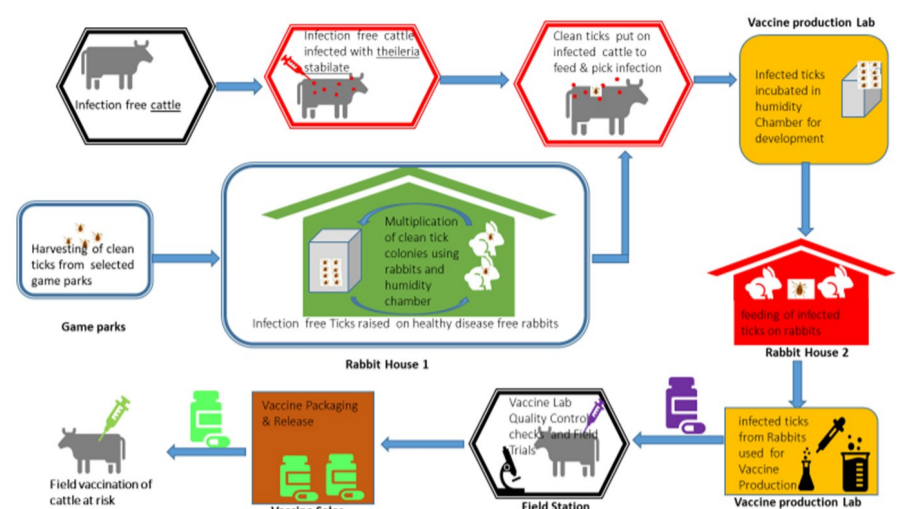
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Introduction

Antimicrobial resistance is a global challenge to health and development augmented by the widespread overuse or misuse of antimicrobials/antibiotics in human, animal health and food production. Theileriosis (January Disease) is one of the four major tick-borne disease in Zimbabwe namely Anaplasmosis (gallsickness), Babesiosis (Redwater), Theileriosis (January disease) and Ehrlichiosis (Heartwater). Zimbabwe Department of Veterinary Services (DVS) reported 65% of cattle mortality that is attributed to tick-borne diseases for which tetracyclines have been extensively used by farmers for chemoprophylaxis and (Metaphylaxis) treatment. Within this context the production of tick-borne diseases vaccines was considered a priority by the Zimbabwe Government and resource partners. Furthermore, considering the transnational and multi-sectoral nature of AMR, the Tripartite (Quadripartite) - Food and Agriculture Organization (FAO), World Organisation for Animal Health (OIE) and the World Health Organization (WHO) have scaled up ef-

Summary Flow Diagram for Theileria Vaccine production



Project / programme objectives

The Antimicrobial Resistance Multi-Partner Trust Fund (AMR MPTF) reinvigorated the concerted efforts of national stakeholders and the Tripartite to implement planned activities from the NAP (2021-2023) signalling a more coordinated approach towards dealing with AMR in Zimbabwe. The animal health component of the project aims to promote the use of vaccines as an alternative to irrational use of antibiotics on Theileriosis in Cattle (reviving Zimbabwe's tick and tickborne diseases vaccine production capacity by producing 100,000 doses of BOLVAC vaccine in the first phase of the project that is ending in 2023).

Milestones/achievements

A total of 20,000 doses of BOLVAC vaccine was produced in August 2022, while a subsequent batch of 92 000 doses were produced in December 2022. This production signifies a successful breakthrough after several years of hard work.

Conclusions

The resumption of BOLVAC vaccine production is a major breakthrough because Zimbabwe can now produce vaccines against three (3) out of the four (4) major tick-borne diseases (TBDs) prevalent in the country. With this production capacity, the country is now ready to roll-out its Integrated Ticks and Tick-Borne Disease Control Strategy (ITTBDSCS) composed of three (3) main components namely dipping, Acaricide Resistance Monitoring and the use of TBD vaccines.

This effort is just one component of the animal health activities included in the project among other human health and agricultural activities supported by the AMR MPTF project in Zimbabwe.

In partnership with the government of Zimbabwe, the Quadripartite and other stakeholders, WOAHA will continue providing transformative support towards a coordinated and multi-sectoral 'One Health' approach to reduce the burden of AMR in Zimbabwe and the southern Africa region.

Other

The Theileriosis vaccine called BOLVAC was first produced by Zimbabwe's Central Veterinary Laboratory (CVL) in 1989 using Zimbabwe's own Theileria parva vaccine strain, isolated from Boleni Farm in Goromonzi district, hence the name BOLVAC vaccine. Production of the BOLVAC vaccine was gradually discontinued in the late 1990s mainly due to high technical staff turnover and inadequate financing.

Future Plans

The Theileriosis (BOLVAC) field vaccination trials commenced in December 2022, in Makoni District (Manicaland Province), in addition to other high risk areas in five provinces. This field vaccination trials will enable assessment of the performance of the vaccine under field conditions and its impact in reducing the occurrence of theileriosis and cattle deaths. These trails will be concluded in September 2023.