



An integrated 'push-pull' areawide control of tsetse flies in Eastern Africa

Preamble

Tsetse flies are known to transmit trypanosomiasis disease in livestock and sleeping sickness in humans. In sub-Saharan Africa, the disease has plagued human and animal health for decades. Human diseases caused by African trypanosome parasites are fatal while animal diseases from related parasites impede agricultural development. Collectively, this has constrained the development of arable and mixed agriculture in sub-Saharan Africa and at the same time, restricted nutrition and economic prosperity for millions of people living in tsetse infested areas in eastern Africa. Tsetse flies are heterogeneously distributed within eastern Africa and across international boundaries thereby migrating across the countries in the region.

Therefore, innovative approaches can be harnessed by using improved tsetse repellents and attractants based on 'push' and 'pull' tactics acting synergistically and rapidly to suppress tsetse fly populations and consequently increase livestock health and human health.

Technology

The tsetse repellent and attractant blends in this project are based on compounds derived from waterbuck (*Kobus defassa*) as well as blending studies, and have shown significant incremental improvements relative to previously formulated blends and are applicable to savannah tsetse fly species (*G. m. morsitans* and *G. pallidipes*). The blends will be separately formulated and encapsulated based on nanoparticles for controlled release and further incorporated in custom release devices such as plastic and textile fabrics among others. The release device for the attractant blend will be customized for placement within traps and/or targets while that for repellent blend will be customized for placement in animals.

Local and Regional benefits

The project seeks to reduce exposure of humans and livestock to tsetse flies and ultimately eradicating the flies which will result into increased offtake rates and livestock population and productivity. Furthermore, due to improved health, there will be integration of livestock and crop farming systems thus contributing to improved food security and household incomes.

Project leader

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Project Partners

- Biotechnology Research Institute - Kenya Agricultural and Livestock Research Organization (BIORI-KALRO), Kenya
- Kenya Tsetse and Trypanosomiasis Eradication Council (KENTTEC), Kenya
- Vector and Vector Borne Disease Institute - Tanzania Veterinary Laboratory Agency (VVBD-TVLA), Tanzania
- A to Z Textile Mills Limited, Tanzania
- Gulu University, Uganda

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