

MULTI-FUNDER INITIATIVE

Canadian International Food Security Research Fund (CIFSrf)

Scaling up development, production of CBPP vaccine for cattle in Kenya

Contagious bovine pleuropneumonia (CBPP), a highly contagious respiratory disease of cattle, has serious economic and trade consequences for sub-Saharan Africa. But there is hope: researchers from Kenya and Canada are partnering with vaccine manufacturers, government regulators, and pan-African organizations to commercialize and mass produce a practical and affordable solution. Access to such a vaccine would be a game changer for small-scale livestock keepers, the majority of whom are poor and women.

Developing the first effective vaccine for CBPP

CBPP affects the livelihoods of some 24 million cattle producers in 26 African countries. The bacterial infection is a major impediment to international trade, resulting in an estimated US\$2 billion in losses annually. Other CBPP vaccines are available but they are short-lived and require refrigeration, making them impractical in many parts of Africa.

In a global first, major progress has been made toward developing a new vaccine that is safe, highly effective, and easily stored and transported, with no cooling required. Several promising vaccine candidates have been identified and development, regulatory, and production efforts are being scaled up to make them available to farmers throughout Kenya and other African countries.

Firming up the business case for farmers

Researchers used computational genomics and animal trials to identify eight proteins that were subsequently shown to provide significant protection against CBPP. They offer the greatest potential yet for developing a vaccine that can be rapidly produced by manufacturers and easily used by farmers—a key priority of the African Union.

Production and field tests are currently underway in Kenya. The goal is to improve its protection, reduce side effects, and prolong immunity. The project is also working with social scientists and economists to overcome regulatory, gender, or cost issues that may affect distribution and acceptance of a vaccine. Involving male and female livestock keepers in the research increases the likelihood of them using the vaccine over the long-term.

The vaccine could prove to be a model for vaccines to protect livestock—and even humans—against other existing and emerging diseases.

Expected outcomes

- Partner with a local vaccine manufacturer in Kenya to mass produce and deliver an inexpensive CBPP vaccine with proven efficacy and long shelf life
- Increase international trade of cattle for livestock keepers, both women and men
- Develop strategic control programs to eliminate CBPP (using the new vaccine) in targeted regions
- Design strategies to ensure the vaccine's uptake among small-scale livestock keepers
- Train a new generation of experts and leaders in Kenya and in Canada on CBPP

LEAD RESEARCHERS

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