

THE STORY BEHIND THE RESULTS: VACCINES TO COMBAT LIVESTOCK DISEASES IN SUB-SAHARAN AFRICA

Livestock contribute to the well-being of rural communities in Africa. Livestock provide nourishment as well as clothing, housing materials, draft-animal power and fertilizer, and they are an indicator of social standing and wealth. In the major role they play in managing a household's food security in Africa, women are often the custodians of livestock in Africa, particularly sheep and goats. Women play an important role in the feeding and health care of small ruminants, as well as in the control over decisions on selling or consuming their animals and livestock by-products, and how to dispose of income generated from such sales. A major problem facing smallholder farmers—women in particular—is the difficulty of effectively protecting their animals against disease.

Infectious animal diseases are the single-largest cause of livestock losses worldwide. In sub-Saharan Africa, livestock production is vital to the livelihoods of millions of small-scale farmers and accounts for 25 percent of national income in some countries. While vaccines are available for many diseases, their cost, delivery, and need for refrigeration often impede their widespread use, especially in isolated rural areas.

Dr. Lorne Babiuk and his team of Canadian and South African researchers, supported by DFATD and the IDRC through the CIFSRI, have made breakthroughs in developing inexpensive, refrigeration-free, single-shot vaccines to protect cattle, sheep, and goats against five common animal diseases in Africa: lumpy skin disease, sheep pox, goat pox, Peste des Petits Ruminants and Rift Valley fever. A vaccine is also being developed to combat African Swine Fever (ASF). By using what Babiuk calls a “fancy scissors and crazy glue” approach, the research team has been able to shut off genes and splice new genes into a weakened lumpy skin disease virus and in so doing, produce an animal vaccine that protects animals from multiple diseases.

This new development in vaccine technology promises to reduce livestock losses, thus contributing to increased food availability and the income of small livestock keepers, particularly women whose livelihoods depend upon small ruminants like sheep and goats. To date, the vaccine has proven effective against lumpy skin disease, sheep pox and goat pox, and progress is being made on the development of a vaccine against ASF.

Working with various South African national departments, training courses, brochures and pamphlets on the key animal diseases have been developed, and rural communities, including women, have been sensitized to the contribution of vaccines to livestock improvement. A strategy focusing on vaccines for viral diseases in Africa will identify, name and address constraints in small-scale livestock production systems and value chains. This is crucial for optimizing outcomes in strategies to strengthen vaccine implementation in the African context.



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