



NATIONAL AGRICULTURAL RESEARCH ORGANISATION

A TURN OF THE TIDE: Uganda Unveils Homegrown Anti-Tick Vaccine in Major Leap for Africa's Livestock Sector



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On April 30th, 2026, Uganda marked a defining moment in its agricultural transformation journey as President Yoweri Kaguta Museveni officially launched the country's first locally developed anti-tick vaccine and commissioned a state-of-the-art production facility, an achievement being hailed as a breakthrough not just for Uganda, but for the wider African Continent.

The occasion was held at the National Agricultural Research Organisation (NARO) - National Livestock Resources Research Institute (NaLIRRI) at Nakyesasa village in Wakiso District.

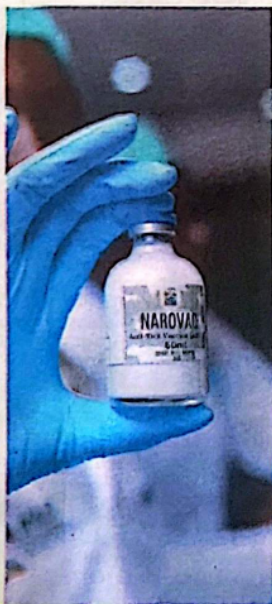
For decades, ticks and tick-borne diseases have undermined livestock productivity across Africa, costing farmers billions in losses through reduced milk yields, poor weight gain, and high mortality rates. Now, with the introduction of the vaccine branded NAROVAC®-ATV1, Uganda is positioning itself at the forefront of a science-led agricultural revolution.

President Museveni captured the significance of the innovation in simple but powerful terms: "The cow now kills the tick."

Dr. Swidiq Mugerwa, the NARO Deputy Director General for Research and one of the scientists behind the vaccine, explained that the vaccine,

developed using recombinant technology, utilizes antigens derived from local tick species, specifically the *Subolesin* protein.

"When this protein is formulated into a vaccine and injected into the cow, the animal's immune system recognizes it as foreign and produces



antibodies against it. When a tick feeds on the cow's blood, it ingests these antibodies, which then act to kill the tick," Dr. Mugerwa said.

The vaccine is administered to cattle with three initial doses at day 0, day 30, and day 180, providing protection for a full year. Annual booster doses every six months ensure continued immunity.

The vaccine represents a shift away from reliance on acaricides, which are chemical tick-control substances that have long dominated livestock management but are increasingly problematic. Over time, ticks have developed resistance to these chemicals, while their toxicity has raised concerns about environmental safety and food quality.

A Milestone in Uganda's Economic Evolution

President Museveni situated the vaccine within Uganda's broader economic transformation, describing it as part of the country's transition into a science-led economy and what he termed "phase five" of development.

Uganda's economic journey, he explained, has evolved from post-conflict recovery, through expansion and diversification, to value addition, and now to a stage driven

by innovation and technology. The anti-tick vaccine joins a growing list of indigenous innovations, including advances in automotive manufacturing and human vaccines, signaling a future where Africa increasingly produces solutions for its own challenges.

"This is why Uganda is unstoppable," the President declared, reaffirming government commitment to investing in science and innovation. He further proposed enhanced incentives for scientists, including tax waivers on salaries, to sustain momentum in research and development.

Built by Local Science, Backed by Strategic Investment

The NARO Director General, Dr. Yona Baguma, revealed that the vaccine, the first of its kind in Africa and second in the world, is the result of over a decade of research, the journey having begun in 2013, when scientists developed four candidate vaccines using ticks collected from

ten agro-ecological zones across the country.

These candidates underwent rigorous laboratory studies, on-station trials, and field trials across multiple regions - including Mbarara, Maridi, Nabuin, and Uganda Prisons farms - ensuring performance under diverse environmental conditions.

Results demonstrated an impressive 93.2% effectiveness against major tick species, including the Brown ear tick (*Engoho*), Blue tick (*Entujjo*), and the Bont-legged tick (*Embarabara*) - three of the most economically damaging parasites in Uganda.

The development process was supported by a Government of Uganda investment of approximately UGX 120 billion, which funded research, trials, infrastructure development, and the recruitment of skilled personnel. The newly commissioned facility now has the capacity to produce 36 million doses annually, equivalent to about 3 million doses per month.



Tested on Farms, Ready for Scale

Dr. Baguma also noted that before its official launch, the vaccine was tested on various farms. A total of 60 farmers across 30 districts participated in field trials involving over 12,600 cattle, 3,388 goats and 367 sheep.

The results were striking, showing significant reductions in tick populations and a marked decline in tick-borne diseases. For farmers, this translates directly into improved productivity, lower costs, and more reliable incomes.

Uganda currently has an estimated

livestock population of 16 million cattle. With ticks affecting nearly all production systems, the vaccine's rollout is expected to deliver immediate and widespread impact.

Regulatory Approval and Global Standards

Dr. Baguma added that the process of research and production of the anti-tick vaccine was supervised by various regulatory bodies including the Ugandan National Council for Science and Technology (UNCST) and its various committees, and the National Drug Authority (NDA). The