# GALVmed teams up with Boehringer, Gates Foundation for AAT alliance

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**Multiple partners have created a taskforce to tackle African animal trypanosomiasis. S&P Global's head of animal health Joseph Harvey spoke to GALVmed's AAT development program manager Michael Pearce to garner more details about this new alliance.**

A new collaboration has brought together partners from industry, academia and government to tackle African animal trypanosomiasis (AAT). The taskforce features the Bill & Melinda Gates Foundation, the UK government's Foreign Commonwealth and Development Office, Boehringer Ingelheim and GALVmed.

AAT is also known as nagana and is a substantial socio-economic burden to livestock farmers in sub-Saharan Africa. It affects and kills around three million cattle annually. The collaborators aim to develop and make available a new solution to address AAT before 2030. They will conduct research in tandem with other academic and international partners.

Considerable progress has been made in the control of African human trypanosomiasis, which is targeted by the WHO for elimination. However, GALVmed said control of AAT has been limited because it is complex and more challenging to control than human trypanosomiasis. This is due to the diversity of host species, parasites and vector flies involved, as well as the reservoirs of infection in wildlife.

The organization also pointed out existing control tools are considered to be inadequate and there are no vaccines for AAT. Drugs used to treat AAT are "associated with problems of counterfeiting and drug resistance". GALVmed said most of the countries impacted by AAT are developing nations that have "limited resources to monitor and control endemic livestock diseases".

Michael Pearce told S&P Global Animal Health: "We believe there is a good general awareness of AAT among African farmers. However, accurate diagnosis is challenging because of limited professional veterinary support and veterinary diagnostic services. There is also concern about the extent of counterfeit drugs and the adequacy of treatment with trypanocidal drugs.

"Consulting a wide range of stakeholders, including livestock farmers, local veterinarians and staff in departments of agriculture, has been an essential part of GALVmed's approach to developing solutions for AAT. Following such consultations, GALVmed developed a series of target product profiles for solutions to AAT, identifying minimum acceptable characteristics and desirable features regarding such things as route of administration, spectrum of efficacy against different trypanosome species and shelf life in tropical conditions."

## Threat of AAT

AAT affects cattle, water buffalo, sheep, goats, horses, pigs, dogs and other species. It is caused by the protozoan parasites *Trypanosoma congolense*, *T vivax* and *T brucei brucei*, and is a major problem in Africa where it is mainly spread by tsetse flies. Infection by T vivax also occurs in northern South America, where it is transmitted by biting flies such as stable flies and horseflies, and has more recently been reported in the Middle East. GALVmed said infectious parasites enter the bloodstream of the host animal and multiply causing fever, weakness, lethargy and anemia, which lead to weight loss, reduced fertility and milk production, and may result in death.

AAT is estimated to threaten over 50 million cattle in known tsetse endemic areas across Africa. However, GALVmed pointed out "as many as 90 million cattle are threatened if cattle outside the tsetse belt – potentially at risk because of cattle movements, transhumance and mechanical transmission of T vivax by biting flies – are also considered".

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Losses directly attributed to reduced meat and milk production, as well as the cost of treatment and tsetse control, are more than $1 billion annually. In addition, losses in agricultural gross domestic product in all affected areas in Africa are estimated to be around $4.5bn each year.

Mr Pearce suggested the partners could learn from efforts to eliminate African human trypanosomiasis. The collaborators are applying learnings from a counterpart program to develop a novel treatment for human trypanosomiasis.

Mr Pearce commented: “Much of the success achieved in the control of human trypanosomiasis has been the result of sustained and coordinated public health policy and activity. This may be more difficult to achieve in the veterinary context due to the more complex epidemiology of AAT and the different landscape of animal health delivery compared with human health.”

GALVmed has aimed to absorb some of the risk associated with developing new drugs and vaccines by testing a range of possible solutions to identify highly prospective candidates for treating and protecting against AAT, as well as conducting development activities to provide pivotal data that would support marketing authorization applications.

Mr Pearce noted: “GALVmed has been active in the search for new solutions for AAT since 2011. This has involved extensive screening of 12,000 candidate molecules, review of potential vaccines and support for development of pen-side diagnostic tests, working with a range of academic, government agencies and commercial partners. Following the identification of a highly prospective candidate, GALVmed is now working on the development of a new solution for the treatment and control of AAT.

“GALVmed is helping to tackle the challenge of poor quality and counterfeit AAT drugs which are a feature of all African veterinary drug markets. Working with a number of partners, GALVmed facilitated two laboratories – including equipping and training staff – and helped to set up testing standards for drugs currently on the market. GALVmed has also actively supported the development of new pen-side diagnostic tests for AAT and works with international organizations such as the FAO and the EU Combat project to contribute to and facilitate international efforts to control and reduce the burden of AAT on African farmers.”

GALVmed has engaged with over 20 research partners to confront AAT. The organization noted a pen-side diagnostic test is marketed by a Ceva Santé Animale. GALVmed is now conducting a development program with its partners to generate pivotal data to support registration of a new solution for AAT.

## Analyst Contact Details: Joseph Harvey

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