

Sleeping sickness relief



There have been positive developments in Uganda, where IK, Ceva Santé Animale, the universities of Edinburgh, Scotland, and Makerere, Uganda, and COCTU are working together to fight sleeping sickness.

Following the launch of the Stamp Out Sleeping Sickness (“SOS”) campaign in Kampala, Uganda, in October 2006 (as reported in the autumn 2006 issue of *IK News*), enthusiastic teams of final-year veterinary students from Makerere University went into the field in Uganda during October and November 2006 aiming to treat up to 220,000 cows in the five districts of Northern Uganda: Kaberamaido, Dokolo, Amolatar, Apac and Lira. After treating cattle with a drug that kills the parasite, the students advised farmers and local animal-health workers on how to spray insecticides onto the livestock using the RAP method (see inset “The background” on page 15). Repeated on a monthly basis, this treatment kills the flies upon contact, preventing further disease transmission.

Additional insecticide was left with the district veterinary officers to allow them to undertake a second free spraying, coupled with additional publicity on the importance of continuing to administer the treatment on a regular basis.

“The mass treatment and initial spraying of cows proved to be incredibly effective,” says Anne Holm Rannaleet, Partner, Industi Kapital. “We managed to reach our target of more than 86% of cows →

REDUCING THE RISK.

"The mass vaccination undertaken by Ugandan veterinary students has brought down the prevalence of parasites to very low levels. As millions of tsetse flies were killed in the process, the situation in the districts of Kaberemaido, Dokolo, Amolatar, Apac and Lira has improved a lot," says Marc Prikazky, COO, Ceva.



→ treated throughout all five districts thanks to the hard work and long hours put in by the Makerere students. Altogether, they managed to treat 190,688 cattle during the period."

Professor John David Kabasa, Dean of the Faculty of Veterinary Medicine at Makerere University, saw the opportunity to offer an alternative to the didactic teaching model for the University's entire cohort of final-year veterinary students, in the form of field training.

"The SOS campaign and the eight weeks out in the field have provided our students with an unprecedented hands-on experience which leaves them much better prepared for their future careers," he says.

A follow-up on the treatment was conducted in January 2007, when the same 23 villages and sentinel herds were sampled as had been sampled before the treatment. The results were very clear.

"We have managed to reduce the prevalence of *Trypanosoma brucei* (the animal form) and *Trypanosoma brucei rhodesiense* (the acute human form) by 70% across the board", says Professor Sue Welburn of Edinburgh University. "From one in every 100 cattle infected with *Trypanosoma brucei rhodesiense*, the samples now show a massive reduction to one in every 1,000. This will really have an impact."

The positive development is further manifested in the preliminary data collected on human sleeping sickness cases. They have not, as is usually the case owing to the wet season, accelerated during the winter months but rather have gone down. Additional sampling will be carried out in June, and the team

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Anne Holm Rannaleet, Partner, IK



also intends to measure the effect of continued spraying. The hope is that most farmers in the future will be able to do the spraying themselves.

"The sheer impact of the mass vaccination and treatment undertaken will have brought down the prevalence of parasites to very low levels. Millions of tsetse flies were killed in the process, which will greatly improve the situation in these districts," says Marc Prikazky, COO, Ceva.

This spring, workshops have been held to raise awareness of sleeping sickness with local political leaders, district administrators, district veterinary and entomology staff, district medical staff, local NGOs and farmer's associations, and the local media. These promotional campaigns will continue in parallel with the campaign to get farmers to undertake the treatment, by purchasing the insecticide made available by Ceva and its distributors in sizes and quantities adapted to local needs.

"It is extremely encouraging to see that a project approach with defined responsibilities, regular feedback, action and budget follow-up works in this type of venture too," says Anne Holm Rannaleet. "We now know that we have the know-how, products, local set-up and dedicated resources to be able to challenge and control the spread of the disease. Now we need to secure large-scale additional funding in parallel to our own contributions to bring sleeping sickness under control in the long term."

KWINTET CONTRIBUTION TO STUDENTS

As a token of appreciation for their hard work, IK's portfolio company Kwintet (a leading provider of work and protective wear) provided each of the graduating students from Makerere University in Uganda with a pair of protective boots from its subsidiary Wenaas.



THE BACKGROUND

■ Two strains of Human African Trypanosomiasis (HAT) – also known as ‘sleeping sickness’ – threaten to converge in Uganda. This could have a catastrophic effect on the already stretched local health services. Sleeping sickness, transferred by the bite of the tsetse fly, is one of the so-called Neglected Tropical Diseases which mainly affect the world’s poorest, i.e. the 2.6 billion people subsisting on less than \$2 per day.

■ The disease comes in two forms, the acute form (*Trypanosoma brucei rhodensense*) which leads to death within 6 months and the chronic form (*Trypanosoma brucei gambiense*) where death follows several years of suffering.

■ Cows act as carriers and the main ‘reservoir’ of the human-infective form of the disease, as well as being infected themselves by various tick-borne diseases, which often co-exist, leading to deterioration in condition, reduced milk production and increased mortality. Recent research has shown that by treating cattle with a Restricted Application Protocol method (“RAP”), which involves spraying only the legs, belly and ears of the cattle (which is where the tsetse fly mainly feeds), the cost of treatment can be brought down to 0.02 US cents per animal. This makes it affordable for the farmers to administer the treatment themselves.

■ Industri Kapital, working together with its portfolio company CEVA Santé Animale, the universities of Edinburgh, Scotland and Makerere, Uganda and the Coordinating Office for the Control of Trypanosomiasis in Uganda (COCTU), embarked on an emergency intervention campaign in 2006. The aim was twofold – to prevent the convergence of the two forms of sleeping sickness (through mass vaccination of cattle in the danger areas) and to curb the development of it through messaging and training around the RAP method.

Seeing the light at the end of the tunnel

“I think we are seeing light at the end of the tunnel so this is very encouraging for me personally,” says Professor Ian Maudlin, a director of the Centre for Tropical Veterinary Medicine at the University of Edinburgh, who has spent 30 years researching the ‘sleeping sickness’.

Ian Maudlin is deeply involved in the IKARE project as manager of the DFID Animal Health Programme. Maudlin has extensive experience both of managing high-tech laboratory research and of running applied field projects in developing countries. He is also an advisor on African trypanosomiasis, through membership of expert committees advising WHO and FAO.

Maudlin’s research career spans 30 years working on African trypanosomiasis, and since Uganda has the unique misfortune of having both forms of sleeping sickness he has spent many years there. Maudlin’s first involvement with the disease was in the 1960’s, when he went to Uganda to work at a research institute devoted to the study of sleeping sickness.

“It is an extremely complex disease involving insects, protozoa and sociological interactions. As a result of the research efforts of many people, we now have the tools to actually deal with the problem.”

What are the main challenges for the future?

“Maintaining the level of interest of our main partners (IK and Ceva) and the crucial development of a sustainable market for the new technologies. If sufficiently well funded, I believe we can remove the problem from Uganda in one to two years.”

How can the private sector contribute?

“This is a very large question which is now at the forefront of development economics. In the past the view was that ‘aid’, in whatever form, would solve the problems of African underdevelopment; in fact some economists still hold this view despite the large body of evidence to the contrary. However, throwing money at the problem may indeed be counter-productive.

Economists such as William Easterly think that economic



Professor Ian Maudlin

growth is dependent on the adoption of new technologies, but that people need incentives to be adopters, i.e. to sacrifice current consumption for future payoffs. This requires good government that does not steal the fruits of workers’ labours.

If we assume that technological adoption is the clue to economic growth, how do we ensure that ‘aid’ is helping rather than hindering this process? Recently we have seen the growth of public-private partnerships to tackle the problems that the public sector was failing to address. The private sector can apply business thinking and principles to interventions.

Traditional approaches by government aid programmes would be to force a technical fix while the business approach would be different. Business people identify business opportunities and then solve the related problems. Business people also try to give people what they want at reasonable cost.

The SOS approach is founded on a business model. IK/CEVA see a long-term market opportunity for the ‘restricted application technology’ for cattle keepers in sub-Saharan Africa. The aim is to get these technologies used by marketing them in ‘single-serve’ form at reasonable cost for African farmers. If we can develop a sustainable market for these technologies tsetse flies will cease to be a problem and sleeping sickness will be eliminated.”