

Dramatic cost cuts in tsetse control

An improved technique for controlling tsetse flies cuts costs by 90% because five times as many cattle can be treated with the same amount of insecticide.

The new method, known as 'restricted application insecticide control', relies on the fact that tsetse tend to only bite the legs and stomachs of older cattle. Spraying or dipping just these parts with an insecticide every two to four weeks kills tsetse fly for a cost of only around one British pound per animal per year.

There are other benefits too. For example, the technique means that because young animals don't need to be treated with insecticide they still get bitten by ticks and build up their immunity to tick-borne diseases. In Uganda, Zambia and Burkina Faso, the technique has already reduced the incidence of sleeping sickness - trypanosomiasis - the devastating disease which tsetse carry.

Making insecticide go further

Insecticides have been used successfully for over 20 years to control tsetse flies. But, although cheaper than drugs, they are still expensive. To treat their cattle, farmers pour insecticides over them or put them through insecticide dips. This, together with the need to treat most of the cattle over large areas, makes the control of tsetse very costly.

Now, insecticides go a lot further. Studies in Burkina Faso, South Africa, Tanzania and Zimbabwe found that tsetse suck blood mainly from the legs and bellies of older cattle. When pyrethroids were applied just to their legs and bellies - reducing the amount of insecticide used by 80-90% - nearly as many tsetse died as when the whole animal was treated.

This means that partially treating cattle with insecticide is at least as effective as treating the whole body.





Photo: S. Torr

Applying insecticide only to the legs and belly and only to older animals cuts the cost by 90%. The partial treatment costs more or less the same as a single dose of trypanocide. At this price even the poorest livestock keepers can afford to treat their cattle, a vital factor in making sure a critical density of cattle - around four per square kilometre - are treated over a relatively large area - more than 100 square kilometres.

What difference does this make?

This makes a huge difference to 2 million people in the Apac, Lira and Kabamaindo districts of Uganda. Following a successful trial on 1,000 cattle from 12 villages, a public-private partnership is treating 200,000 cattle with a combination of trypanocides and deltamethrin applied monthly to legs and bellies. This, if successful, will halt the northward march of Rhodesian sleeping sickness.

In Burkina Faso, near Bobo-Dioulasso, 60 farmers are now treating 2,500 cattle using newly built footbaths. Footbaths are spreading rapidly in dairy production and various projects are promoting the same partial insecticide treatment among traditional Burkinabe livestock keepers.

In both countries the number of tsetse flies and the incidence of human and animal trypanosomiasis have fallen and the animals are more productive. In East Africa, *Trypanosoma* spp in cattle fell from 15% to 5%.

What difference could this make?

The sub-Saharan 'tsetse belt', covers approximately ten million square kilometres. Within this area trypanosomiasis, or sleeping sickness, is endemic. The disease takes a heavy toll on the many small livestock farmers.

The African Union's Pan-African Tsetse and Trypanosomiasis Eradication Programme has an ambitious programme to eliminate tsetse in Angola, Botswana, Burkina Faso, Ethiopia, Ghana, Kenya, Mali, Uganda and Zambia. One of their strategies will be to treat cattle with insecticides. By just applying it to the legs and bellies of animals, rather than dipping the whole animal, the cost-effectiveness could improve dramatically. The same could happen in Ethiopia, which recently imported 8,200 litres of deltamethrin to treat cattle and Zimbabwe, where 95,000 cattle are being treated in north Mashonaland.

How can this be encouraged?

The private sector can do a lot if the regulations for importing insecticides are simplified. Once this happens, market forces bring down the cost of insecticides. This in turn boosts demand for tsetse control products.

Regional programmes in southern Africa also play a key role in transferring new technologies between countries, as do veterinary schools. Building cattle dips and drawing up regulations to make sure farmers treat their cattle routinely, plus communication campaigns that give out technical advice and publicize the advantages of restricted application insecticide control, are carrots and sticks that governments can use.

Farmers are likely to catch on much faster if they are already using pyrethroids, such as in areas where there are severe tick-borne diseases or where breeds are particularly susceptible to tick- and tsetse-borne diseases - for example, 'improved' dairy cows in Tanga, Tanzania.

For more information

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