

THE BUTTERFLY TREE MALARIA PREVENTION INITIATIVE

Introduction

- Globally malaria is the biggest killer of man
- Every 60 seconds a child dies from malaria
- An estimated 3.3 billion people are at risk of malaria
- 89% of malaria cases and 91% of deaths occur in sub-Saharan Africa
- 75% of people who die from malaria are children under 5 mostly in sub-Saharan Africa
- 2015 an estimated 214 million cases of malaria worldwide
- 2015 an estimated 438,000 deaths from malaria



For the past eight years The Butterfly Tree has funded a successful malaria prevention programme in Zambia. Providing thousands of mosquito nets, malaria testing kits and educational workshops has helped to save many young lives. However drug-resistance is building.

We have been working with Vectorcide, a UK company, and the London School of Hygiene and Tropical Medicine on two safe new products, which are perceived to be the most superior currently available globally.

Vectorcide is an insecticide coating, which lasts for a minimum of two years. The second product, Larvicide, when placed in water, prevents the larva from developing into mosquito. The constant use of chemicals can cause a number of health issues, as well as polluting the environment. These products are not harmful to humans, animals or the environment.

In 2014 The Butterfly Tree introduced the Vectorcide products to the Ministry of Health in the early part of the year. These were subsequently certified by the Zambian Research Centre. We were informed that there are only two research centres in Southern Africa, the other being in Pretoria, South Africa. This means that neighbouring countries will recognise the Zambian certification.

The National Malaria Control Centre did their own evaluation of the products and were extremely satisfied with the results. Consequently the products were approved by the Zambian Ministry of Health and the Zambian Environmental Agencies. The Butterfly Tree was granted a licence for Importation, Storage, Distribution and Transportation, dated October 2014.



As a registered charity in Zambia, The Butterfly Tree is unable to trade, therefore a Zambian company has been set up to supply the government and private sector. The Butterfly Tree UK will purchase Vectorcide products for humanitarian aid, which will be distributed and applied by The Butterfly Tree NGO in Zambia.

Progress Reports

1. July 2015 – September 2015

- National Launch of the Malaria Prevention Initiative in Zambia, held at the Avani Victoria Falls Hotel, Livingstone, hosted by The Butterfly Tree, address given by Jane Kaye-Bailey. Attended by the Ministry of Health, Chamber of Commerce, Lord Mayor and District Commissioners. Avani donated the conference facilities
- First products, funded by a major donor arrive in Zambia, to be distributed in areas of high malaria prevalence in the Mukuni Chiefdom
- The Butterfly Tree invited by the Zambian Ministry of Health to be represented on the National Malaria Planning Committee
- The Butterfly Tree invited to attend a three day planning conference on health issues for the Southern Province of Zambia budget 2015-16
- A presentation was given to the Kazungula District Medical and Environmental Officers, followed by a training workshop on how to apply and monitor the products
- The Ministry of Health invites The Butterfly Tree to do presentations to every district in the Southern Province, followed by presentations for all district in the other eight Provinces in Zambia, prior to submission on the health budgets for malaria prevention



The Butterfly Tree launches Vectorcide products in Zambia

2. November 2015

The Butterfly Tree carried out the process of applying the coating, inside dwellings in targeted areas of the Mukuni Chiefdom in the Kazungula District, Southern Province.

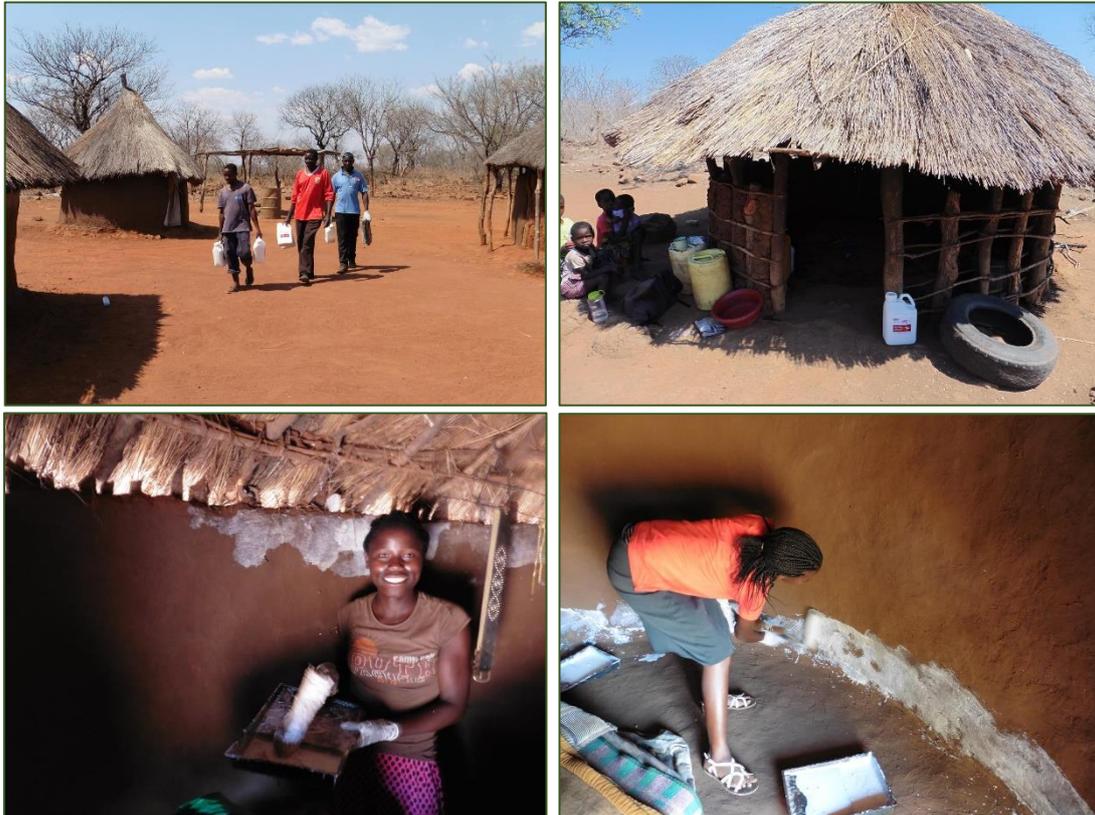
Chuunga, which records the highest number of cases of malaria, does not get any support from the Ministry of Health. They have never conducted Indoor Residual Spraying in this area, which is an hour and forty minute drive through rocky and hill terrain, from Mukuni Village, near Livingstone. It becomes inaccessible during the rainy season.

Siafwebafweba and Kamwi areas were also covered. The surrounding villages are close to a stream and consequently there is a high record of malaria cases.

Stain Musungaila, member of The Butterfly Tree, is managing the new malaria prevention project in Zambia. Before retirement he was head of Sun international's Community Projects in Zambia. He

trained Mrs Maseka, community health workers and four school leavers who had been sponsored by The Butterfly Tree, to take part in the exercise, which took three long days from 6am to 5pm.

The implementation was supervised by Stain Musungaila, Mrs Maseka and overseen by Jane Kaye-Bailey. The charity provided the workers with transport and food and gave a small payment to the health workers for their time. The Butterfly Tree's sponsored orphans were volunteers.



Volunteers applying the Vectorcide coating

- **Chuunga catchment area:** 150 households and additional dwellings, such as outdoor kitchens were covered. The entire community welcomed the intervention - there were no refusals.
- **Kamwi catchment area:** the Villages of Siloozi, Chibalani, Siejoba, Siazibola, Syakondo and Jafuta. A total of 266 dwellings were covered. 17 households refused to have the application; however they have since been to the clinic requesting the products after hearing from their neighbours that both mosquitos and cockroaches were dying.
- **Siafwebafweba catchment area:** the villages of Siafwebaweba, Zwanga, Malumani and Kakekwa were coated. A total of 220 households were covered. There were no refusals.

In all these areas where there were stagnant ponds The Butterfly Tree applied the Larvicide granules to prevent the larva developing into mosquito.



Larvicide used in mosquito breeding grounds

In addition the health facilities at Mukuni Village, which include the main clinic, the maternity clinic, women's shelter and the health worker's house, have received the Vectorcide application.

Implementation

A total of 740 structures were coated with the addition of the health facilities. Some of the Vectorcide coating has been held back for a 'mop up', these are areas that have not been covered or for new dwellings that are being built. 97% of the found structures were coated. The programme was readily accepted by the communities, it will last for two years and is not harmful to humans and animals, as is the case with indoor Residual Spraying.

We are using the products, funds permitting, in rural areas of the Kazungula and Livingstone Districts of the Southern Province of Zambia, where there is a high prevalence of malaria. The results are very positive, communities that previously recorded high numbers of malaria are recording zero cases.

There had been a reduction in new cases of malaria in the Mukuni Chiefdom up until the end of 2014. This was mainly due to the widespread coverage of mosquito donated by the Butterfly Tree.

However in 2015 not only Mukuni, but most areas in the Southern Province of Zambia and Zimbabwe, recorded an alarming increase in cases of malaria. This was due to a number of reasons:

1. Lack of mosquito net distribution
2. Villages not receiving Indoor Residual Spraying
3. Drug resistance

Challenges

- Delayed shipping of the products from South Africa
- Refusals - this was only 3%
- The weather – during the process of application the temperature exceeded 40 degrees

Conclusion

Though the entire procedure has taken a considerable time the programme is proving to be successful. The Ministry of Health has welcomed the project and has indicated that they will use Vectorcide coating as a replacement for Indoor Residual Spraying. Livingstone City Council has already bought a substantial amount of Larvicide and used it for the sewage ponds in town, which are breeding grounds for mosquito. A number of lodges and hotels are buying the products for their CSR programmes.

3. November 2015 – March 2016

- Chuunga zone – no new cases of malaria. Prior to our intervention this community had never received IRS
- Jafuta and Syankondo - seven new cases of malaria reported. However three cases were visitors from Kalomo, where there is reportedly a malaria prevalence
Three cases were from uncoated structures, only one case in Jafuta had been coated, but it is believed that it occurred because the structure has a considerable gap between the mud and the roof. A new dwelling is being built and will receive the Vectorcide coating
- The Gundu community in the Mukuni Chiefdom, which was not coated, has reported thirteen new cases of malaria to date
- Mukuni Health Centre, which has a catchment of 10,926, also received the coating. The medical staff has reported that there is a lack of mosquitos in the facility
- 'Mop up' took place to coat houses that had previously refused the coating

Challenges

- The weather – during the current rainy season some of the villages become inaccessible, which makes evaluation and 'mop ups' difficult
- Insufficient funds to provide protection in other villages in the Mukuni Chiefdom

Conclusion

These findings are showing a significant reduction in new cases of malaria. The malaria season peaks in June, after which we will present a final evaluation.

4. April – May 2016

The Butterfly Tree received reports that there is an outbreak of malaria in the Kazungula District of Zambia. April to May are the peak months for malaria. The Mukuni Chiefdom has 94 cases of malaria, only a very few were from areas that received the application of Vectorcide products. These cases could have been people working at night or people from outside the community staying in the area.

During the second week of May The Butterfly Tree was called by the government to attend an urgent meeting in Zambia, the outbreak has turned into an emergency. The three worst affected districts are Ndola in the Copperbelt, Kazungula, where we carry out most of our work, and Kabwe. Each district, for the first quarter of the month, has recorded in excess of 4,000 cases of malaria.

The District Medical Officer from Kazungula has sent us a report, saying that most areas of the District have been badly affected. Mukuni is the only area that has recorded very low or zero cases and says that this is because our new intervention is working, and that the products are very effective in fighting the malaria vector.

The government say that they need to control the problem, and are asking if we are able to donate more products for the worst hit areas. The country is suffering from an economic downturn.

Challenges

- Lack of mosquito nets and other prevention methods in rural villages
- One possible reason for the increase of malaria is that in March, which is the end of the rainy season, some areas received increased heavy rains, which has left a great deal of stagnant water - prime breeding areas for mosquito
- Insufficient funds to assist the government in areas of outbreak

Conclusion

The Ministry of Health and Mrs Maseka, our Environmental Officer, have stated that the products are working to help in the fight against malaria. Chuunga village and other communities in the Mukuni Chiefdom, which usually has a high prevalence of malaria, have seen a substantial reduction, recording zero or very few cases. However more funds are needed to purchase the new products to help control the current outbreak and to prevent the increase of further outbreaks. Vectorcide coating is needed to protect people in areas of high prevalence, and the Larvicide granules will prevent the larva from developing into mosquito.

With the help of a number of corporate and individual donors we have been able to provide an advanced form of protection in the fight against malaria.

5. August 2016

The malaria outbreak has proved to be setback for the fight against malaria in Zambia, with the Kazungula District being one of the worst affected areas. Over **9,000** cases of malaria have been recorded. The Butterfly Tree team closely monitored areas of the Mukuni Chiefdom where they applied the Vectorcide products in November. These were areas known for their high prevalence of malaria. The following has been recorded:

- A total of 1,391 patients were tested for malaria, of these 1,004 were tested at community level by trained community health workers, the remainder were tested at Mukuni Rural Health Centre
- 25 cases of malaria were treated at the health centre, 175 cases were treated at community level
- Zero deaths and a reduction in complicated malaria cases were recorded. The Butterfly Tree funded malaria prevention workshops, which have encouraged early testing and treatment, thus greatly reduced mortality.

Between January and June the Mukuni Chiefdom recorded 200 cases in total. This was the lowest number of cases for the entire District. The Chiefdom has a catchment of 10,926. In comparison the Singwamba Rural Health Centre, also in the Kazungula District, has a catchment of 6,400. They recorded **3,245 cases of malaria** and **12 deaths** in children aged between 1 and 13 years.

Conclusion

The Ministry of Health requested further assistance from The Butterfly Tree. Vectorcide donated Larvicide for the Singwamba are where there was a great deal of stagnant water. This has since helped to reduce the number of mosquito in the region.

On the strength of the successful use of the products, in the field, by The Butterfly Tree the Ministry of Health is satisfied the Vectorcide products are very effective in fighting the malaria vector. It is believed that orders will shortly be placed by the government.

The Butterfly Tree intends to create further awareness and raise more funds to apply the Vectorcide products to assist the Zambian government where there are shortfalls. We have every confidence in both the insecticidal coating and the Larvicide granules and believe that this safe intervention is superior to anything else that is currently being used.

Compiled by Jane Kaye-Bailey
Founder of The Butterfly Tree
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www.thebutterflytree.org.uk