

The Life-Saving Blue Mosquito Net

Data from WHO show that malaria infected 216 million people in 91 nations and regions in 2016, with 445,000 deaths.^[1] Aiming to eradicate the “devil’s disease,” Sumitomo Chemical Co., Ltd. of Japan offers an “insect-proof mosquito net.”



Center: Teaching Ethiopian children how to use Olyset™ Nets. Hirooka says, “It’s essential to instruct children properly: “When you tuck yourself into bed, make sure you’re completely surrounded by the net.”
Left: An insecticide-treated mosquito net can save the lives of young children, and bring peace of mind to their mothers.



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“Rather than giving a person a fish, teach him how to fish.”
The decision to supply the royalty-free technology to a local business in the United Republic of Tanzania was made promptly. This has become an important step in addressing Africa’s economic burden from malaria, estimated to be 12 billion dollars annually. [3]



Atsuko Hirooka is the executive officer of Sumitomo Chemical Co., Ltd. in charge of environmental health. She is responsible for the long-lasting insecticidal net business as well as other vector control products’ R&D, manufacturing, marketing and sales.

The vivid blue mosquito net is called “Olyset™ Net.” Created in 1994 by Sumitomo Chemical Co., Ltd., it is the world’s first mosquito net in which an insecticide is incorporated into threads made of polyethylene resin. Atsuko Hirooka, the executive officer who heads the vector control business in the company’s Environmental Health Division, says, “Malaria can be prevented by a modern lifestyle. Anopheles, mosquitoes the malaria disease vector, are active at night, so encounters can be avoided by sleeping in a tightly-built house that is difficult for them to enter. Also, if an insecticide is used, many mosquitoes that manage to come inside can be eliminated.”

However, that lifestyle is beyond the reach of many people. One solution is

an insecticide-treated mosquito net, which gives maximum benefit for a minimal investment. The Olyset™ Net is the first to incorporate an active agent, which persists for at least three years, and that has now become the mainstream approach. As design considerations, the net must be comfortable for humans to use every day, having good air permeability. For that reason, Olyset™ Net has a wide mesh but does not allow mosquitoes to pass through due to the effect of the insecticide, which also provides knockdown and repellency effects. In addition, Olyset™ Net is especially designed to make the insecticidal effect persist through repeated wash cycles. Such a net will keep people safe, and even children under five years of age, who have a particularly high risk of dying from malaria in homes with open

doors or windows, are safe as long as they remain inside the net.

However, a new problem has recently emerged: mosquitoes can develop resistance to insecticides. It is reported that mosquitoes have developed resistance against pyrethroids, the active ingredients used in the Olyset™ Net and other insecticide bednets. In order to offer a second-generation mosquito net, Sumitomo Chemical has developed Olyset™ Plus, in which a synergist is added that enhances the effect of pyrethroids such as permethrin. Hirooka explains, “We are not a mosquito net company, but a chemical company that is always ahead of the game. Our goal is to apply chemical technology against mosquitoes at multiple points in their life cycle, from before their immature stage until after their

emergence, and maximize the synergistic effect of our products to ensure safer environments for humans. Thanks to the availability of insecticide-treated nets, medicines, diagnostic reagents and kits, the death rate due to malaria has dropped from one child every 30 seconds in 2006 to one every 90 seconds today. But to completely eradicate malaria, research and development need to continue.”

One of the noteworthy effects of Olyset™ Net is the economic benefit achieved by the early transfer of production to sub-Saharan Africa, which shoulders 90% of the global burden of malaria.^[2] Sumitomo Chemical provided the royalty-free technology to a Tanzanian

manufacturer, whose production facility generated as many as 7,000 jobs during peak periods, and where the annual production of mosquito nets alone is approximately 30 million nets. Almost all the staff was hired locally, and Hirooka says, “This shows that there is no lack of talented personnel in Africa.” Stable employment is a factor that helps the workers transition to a modern, malaria-free lifestyle.

In 2018, Sumitomo Chemical joined in the “ZERO by 40” joint declaration to eradicate malaria by 2040. The blue mosquito nets have the potential of enveloping not only beds, but also the entire lives of everyone involved with a greater peace of mind. ✿

[1] WHO Malaria Key facts (last updated: June 11, 2018)
[2] WHO News Release, Media Centre, April 24, 2017
Prevent malaria - save lives: WHO push for prevention on World Malaria Day, April 25
[3] The World Bank, “Malaria in Africa”, October 2010.