

FIGHTING RESISTANCE

SAVING LIVES BY COMBATING INSECTICIDE RESISTANCE IN MOSQUITOES



 SUMITOMO CHEMICAL

Vector Control Division
Leading innovation in vector control

WHAT IS

INSECTICIDE

RESISTANCE?

Insecticide resistance develops when genetic mutations allow a small proportion of an insect population to resist and survive an insecticide treatment.

By continually using the same class of insecticide, resistant insects can become more dominant in a population. In the case of insecticides used for malaria control this can reduce insecticidal efficacy and may compromise the ability to protect communities from biting mosquitoes and malaria transmission.

The success and popularity of Long Lasting Insecticidal net (LLIN) campaigns which are all treated with just one class of insecticide, the pyrethroids, has contributed to the emergence of pyrethroid insecticide resistance among mosquito populations in Africa and other malaria endemic regions.



WHAT TO LOOK OUT FOR

1

Insecticide resistant mosquitoes are more likely to bite at night



2

Failure of nets to knock down and/or kill mosquitoes



3

Blood-fed anopheles mosquitoes on or inside the net



4

Increased malaria cases in clinics (outside of seasonal variations)



5

Increased tolerance of mosquitoes in WHO susceptibility tests



Ignoring insecticide resistance could lead to approximately 120,000 more deaths from the disease every year



DON'T WAIT FOR RESISTANCE TO HAPPEN. PLAN AHEAD.

There are tools and strategies that can be adopted to manage resistance before it becomes endemic.

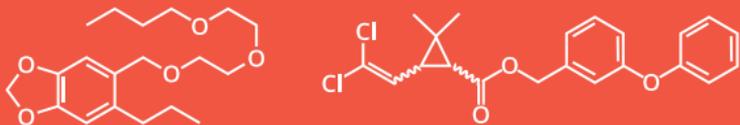
In response to initial outbreaks in resistance, Sumitomo developed a second generation long lasting net; Olyset® Plus, which has additional efficacy against resistant mosquitoes. Otherwise, when using Indoor Residual Sprays for example, it is possible to rotate products with different active ingredients to help combat resistance.

Monitoring the mosquito population for resistance should be part of any good program and if it is detected then act quickly to avoid control failure in your region.

HOW WE WORK

As a research and development based company, Sumitomo Chemical is helping to lead the fight against malaria by developing innovative vector control products.

We are at the forefront of efforts to develop novel products to combat resistance and have recently launched a new net, Olyset® Plus, which includes the synergist Piperonyl Butoxide (PBO) in combination with the pyrethroid permethrin. Olyset Plus is a 'mixture' net – where the active ingredient and synergist are mixed together and incorporated into every net fiber – compared to combination nets, where separate panels contain different insecticide treatments. The synergist blocks the action of enzymes found in resistant mosquitoes which would otherwise breakdown the pyrethroid making it ineffective.



**About 3.4 billion people – half of the world's population
– are at risk of life-threatening malaria**

HOW YOU CAN PROTECT YOUR COMMUNITY

It has been estimated by the World Health Organisation that without taking the necessary action to combat insecticide resistance, more than 55% of the benefits of vector control would be lost – leading to approximately 120,000 additional deaths per year (source – GPIRM)

To help combat resistance and save lives, we have developed a number of Vector Control tools including:

- **Indoor residual sprays** (e.g. Sumithion® WP; SumiShield- under development)
- **Larvicides** (e.g. Sumilarv® 0.5G)
- **Second generation nets** (e.g. Olyset® Plus)
- **Space Sprays** (e.g. SumiPro®)

For more information or to request a free sample net, visit www.sumivector.com, or email info@sumivector.com.

Reported Resistance In Africa by all vectors to Pyrethroids from 2000–2015



Key

-  Confirmed Resistance (<90% Mortality)
-  Possible Resistance (<90-97% Mortality)
-  Susceptibility (<98-100% Mortality)

- ✓ ROTATE YOUR PRODUCTS
- ✓ COMBAT RESISTANCE
- ✓ SAVE LIVES



KEY FACTS

- Enhanced knockdown and kill against pyrethroid-resistant mosquitoes
- Excellent biological performance against susceptible mosquitoes
- Improved re-generation of both active ingredients
- Insecticide and synergist incorporated inside fibres

[CLICK HERE REQUEST A SAMPLE](#)

Founded in 1913, Sumitomo Chemical continually strives to contribute to the sustainable development of society. In line with this approach, Sumitomo developed the Olyset® Long Lasting Insecticidal Net (LLIN) which was the first LLIN to receive WHO recommendation. In addition half of the global capacity for the Olyset LLIN is based in Africa, where the nets are needed most and where the benefits to the local economy of the 7000 jobs created are felt most. Since its launch in 2001, the first generation Olyset Net has protected almost 800 million people. In keeping with its commitment to innovation and bringing benefits to society, it is also manufacturing the first net to have a synergist in every fiber and is also due to launch the first new class of insecticide in the malaria control field for 40 years.



For more information or to request a free sample net, visit www.sumivector.com, or email info@sumivector.com.