



Innovative second-generation mosquito net Interceptor® G2

- Innovative active ingredient system containing a combination of chlorfenapyr and alpha-cypermethrin
- New mode of action provided by chlorfenapyr
- Highly effective against insecticide resistant mosquitoes
- Based on well proven BASF technology used in Interceptor® mosquito nets
- Ready and safe to use
- Long-lasting efficacy
- WHOPES interim recommendation
- PQ listed

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Interceptor® G2 – the second-generation net to control insecticide resistant mosquitoes



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Interceptor® G2 is the first long-lasting insecticide-treated net (LN) containing the active ingredient chlorfenapyr in combination with alpha-cypermethrin. Chlorfenapyr is new to vector control and is the first non-pyrethroid adulticide employed on an LN. Due to its new mode of action, chlorfenapyr shows no cross resistance to other insecticide classes.

Interceptor® G2 – combining chlorfenapyr and alpha-cypermethrin

The use of long-lasting insecticide-treated nets (LNs), has unequivocally proven to be an important and successful tool for the mitigation of malaria. However, a negative consequence of the widespread use of LNs has been the accompaniment of selection which further exacerbates well-known resistance issues in mosquitoes to neurotoxic chemistries such as pyrethroids.

Interceptor® G2 is the second-generation LN developed by BASF with a combination of chlorfenapyr (200 mg/m²) and alpha-cypermethrin (100 mg/m²) to control insecticide resistant mosquitoes. Interceptor® G2 is a multifilament polyester net produced with a unique textile-finishing process using a proprietary polymer system.

Each active ingredient serves a specific function on the mosquito netting: chlorfenapyr is toxic to insecticide resistant and susceptible mosquitoes, while the pyrethroid component alpha-cypermethrin provides excito-repellency, crucial for reducing mosquito biting rates and providing personal protection to net users.

Chlorfenapyr – a new insecticide for malaria control

Chlorfenapyr, a pyrrole, was launched by BASF's Crop Protection division in 1995. It is registered in more than 40 countries mainly for professional pest control use (e.g. US EPA approval for use in kitchens and food storage). It has a mode of action which is new to vector control as it is not neurotoxic. Chlorfenapyr owes its toxicity to disruption of cellular respiration and oxidative phosphorylation in the mitochondria and leads to energy depletion in the mosquito. Evaluations performed on the mosquitoes *Anopheles gambiae*, *Anopheles funestus* and *Culex quinquefasciatus* show no cross resistance of chlorfenapyr to mechanisms that confer resistance to standard neurotoxic insecticides as organochlorines, pyrethroids, organophosphates and carbamates.



Interceptor® G2 – restoring control of mosquitoes in areas with insecticide resistance

Burkina Faso has documented increasing levels of insecticide resistance in malaria vectors. In experimental huts, Interceptor® G2 restored the control of mosquitoes in an area with high resistance where the pyrethroid-only LN Interceptor® (200 mg/m² alpha-cypermethrin) gave a control of only about 20%.

Interceptor® G2 provided comparable blood feeding inhibition and personal protection as a pyrethroid-only LN such as Interceptor®.

Figure 1: Mortality rates of *An. gambiae s.l.* in experimental huts with treated versus untreated net¹

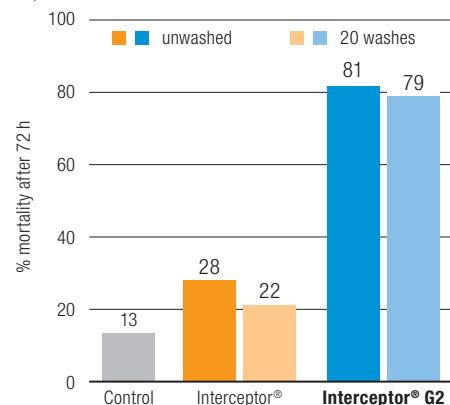
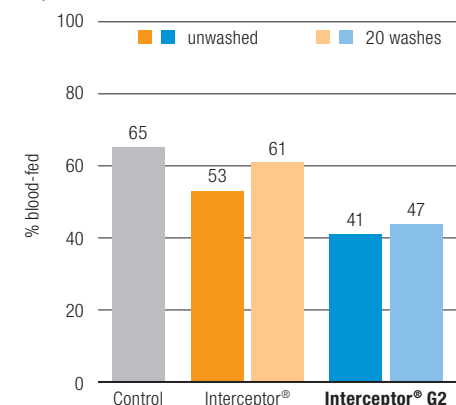


Figure 2: Blood feeding rates of *An. gambiae s.l.* in experimental huts with treated versus untreated net¹



Also in Tanzania, where the resistance level is not as elevated as in West Africa, the mixture net Interceptor® G2 showed improved control of mosquitoes in comparison to the pyrethroid-only LN, Interceptor®.

Personal protection is provided with Interceptor® G2 in Tanzania as well.

Figure 3: Mortality rates of *An. arabiensis* in experimental huts with treated versus untreated net²

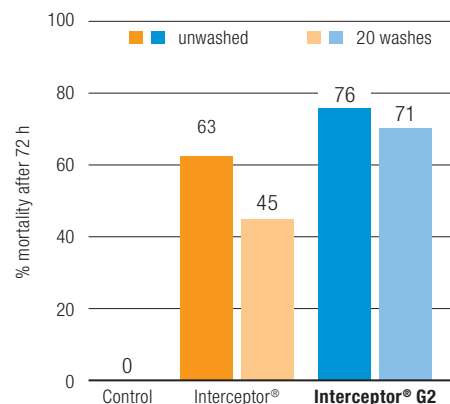
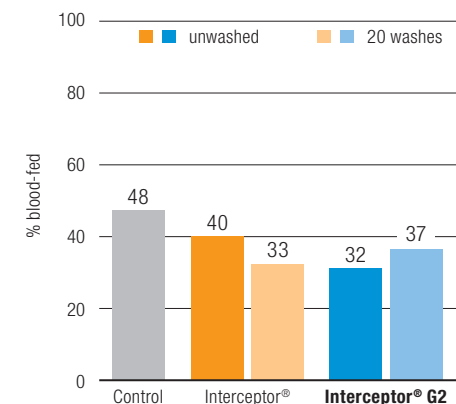


Figure 4: Blood feeding rates of *An. arabiensis* in experimental huts with treated versus untreated net²



¹ Bayili K., N'do S., Namountougou M., Sanou R., Ouattara A., Dabiré R. K., Ouédraogo G. A., Malone D., Diabaté A. (2017) Evaluation of efficacy of Interceptor® G2, a long-lasting insecticide net coated with a mixture of chlorfenapyr and alpha-cypermethrin, against pyrethroid resistant *Anopheles gambiae s.l.* in Burkina Faso, Malar J. 16:190 ² M. Kirby, M. Rowland, LSHTM, to be published