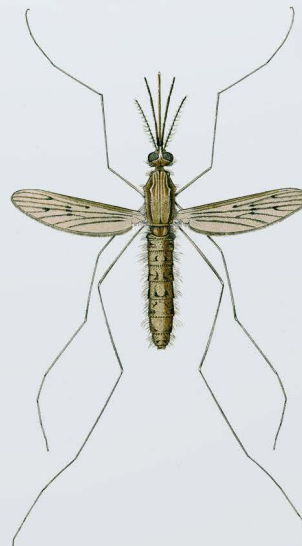


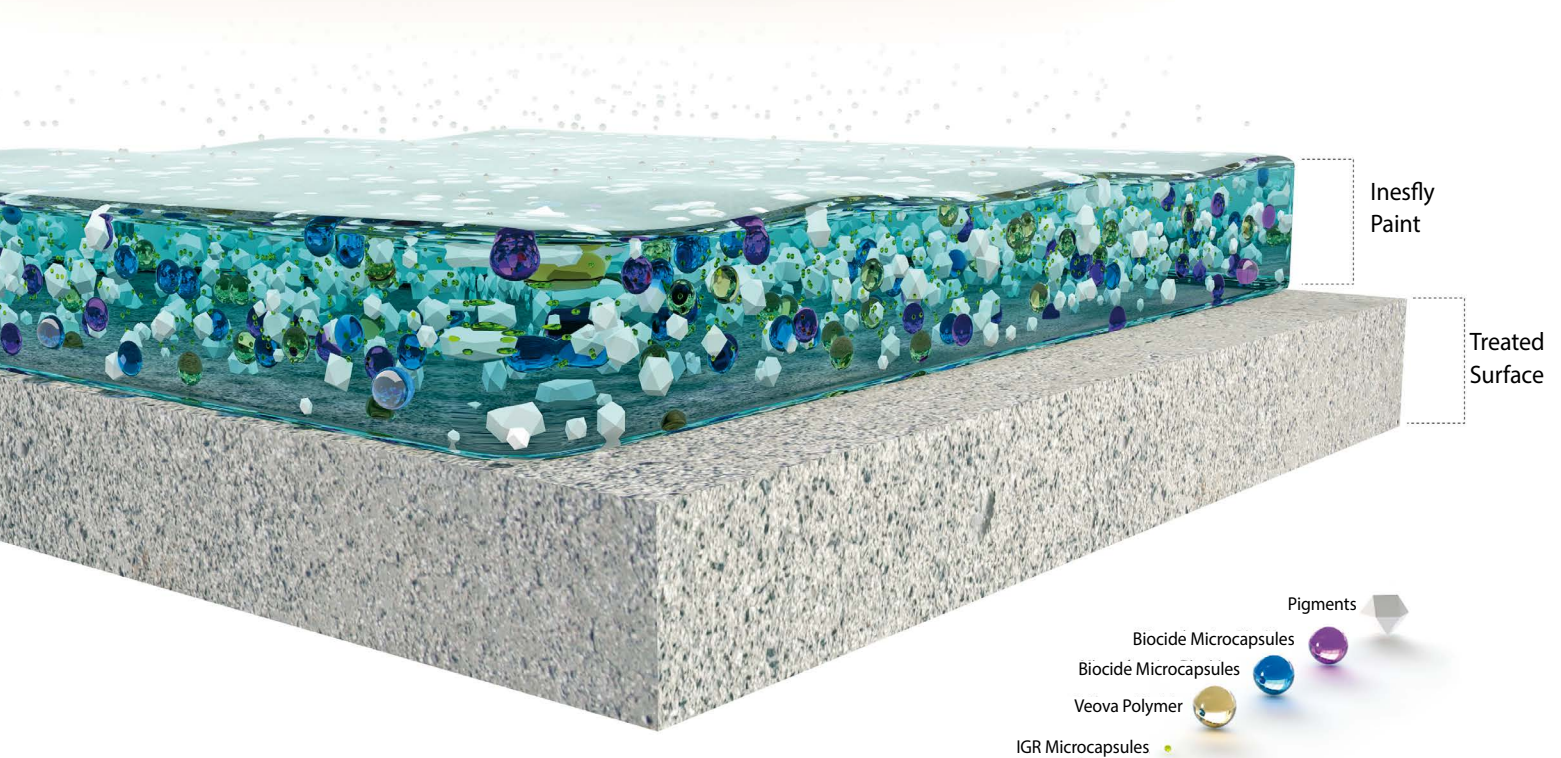
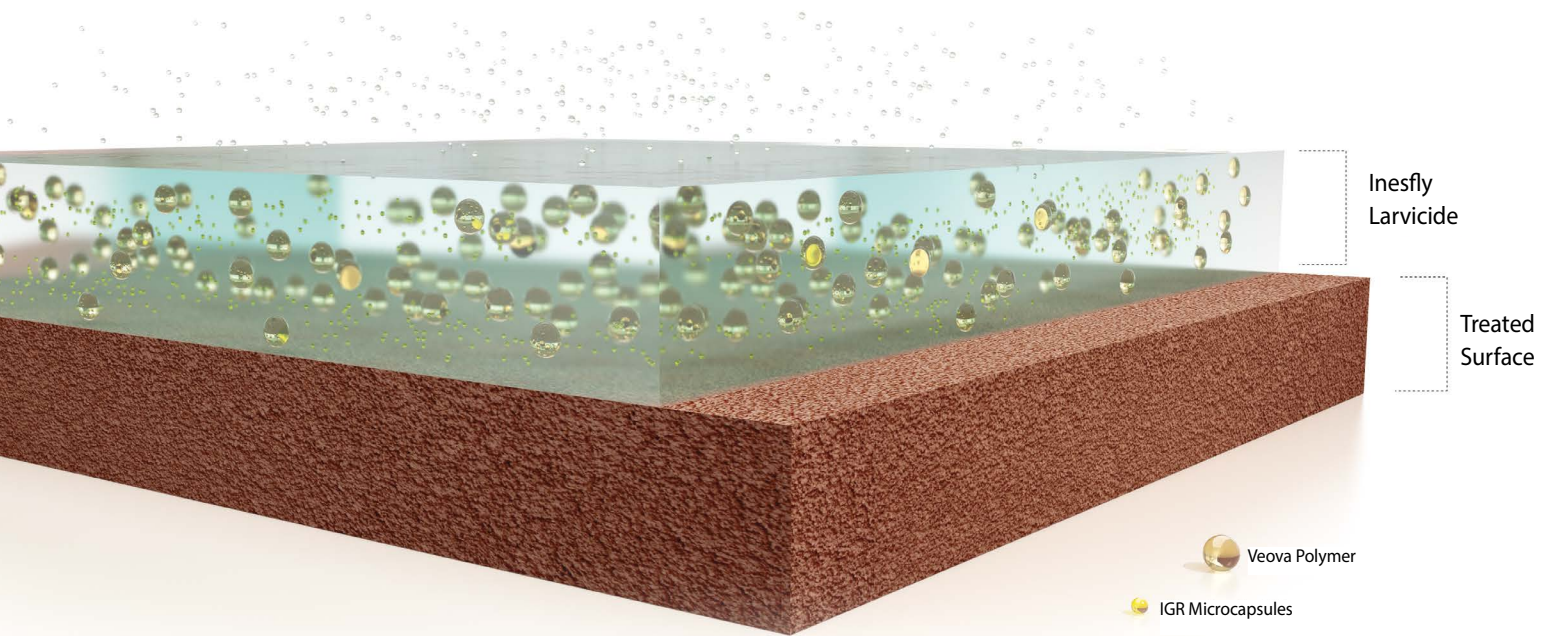


**if Inesfly<sup>®</sup>**  
Corporation

## Controlling Mosquitoes of the **Anopheles** Genus

| Malaria |







# OUR TECHNOLOGY

Inesfly technology has made it possible to combine a variety of types of active ingredients (natural products, biocides etc.) in a polymer microcapsule. This ensures their controlled release, improves their duration and makes it easier to use them to control pests and vectors in our surroundings.

## SPECIFIC PROPERTIES

- Prolonged efficacy and duration
- Harmless to humans and animals
- Published scientific trials
- Proprietary method of application
- Resistant to alkalinity, UV radiation and temperature.
- Reduced treatment costs
- Low toxicity, greater duration.

INESFLY products are the result of a long process of research and development. The studies and projects carried out have demonstrated its efficacy in controlling various vectors which transmit endemic diseases. These efficacy studies have been performed in accordance with international protocols and by the world's foremost centres and experts in the field of Health.

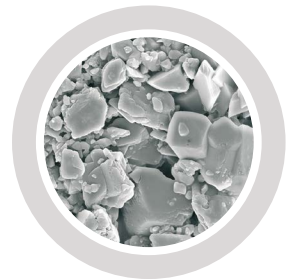
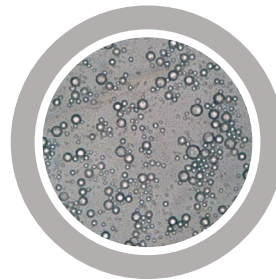
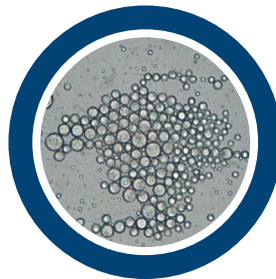
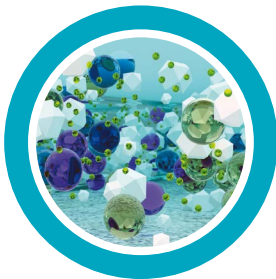
INESFLY products provide protection for humans against mosquitoes of the *Anopheles* genus, either directly or through complete control of their biological cycle.

Inesfly technology, patented in 53 countries worldwide, is used in various fields including public health, animal health, agriculture and ornamental plants.

The INESFLY microcapsule is formulated in a chemical process that produces microcapsules in suspension which include low-dosage biocides regulating insect growth. The type of polymer and the coating of the microcapsule together ensure the gradual, controlled release of the active ingredients.

We believe in health projects based on three main pillars:

- Control of vectors
- Clinical diagnosis and treatment
- Education on Hygiene and Health



# ANOPHELES

## DISEASE TRANSMISSION

Strategies for the prevention and eradication of vector-borne diseases necessarily involve disrupting the life cycle of the causative agent of the disease before it can be passed onto humans. Consequently, controlling diseases of this kind necessarily involves controlling vector populations. Control measures like these can only be implemented successfully with a knowledge of the biology and ecology of these vectors.

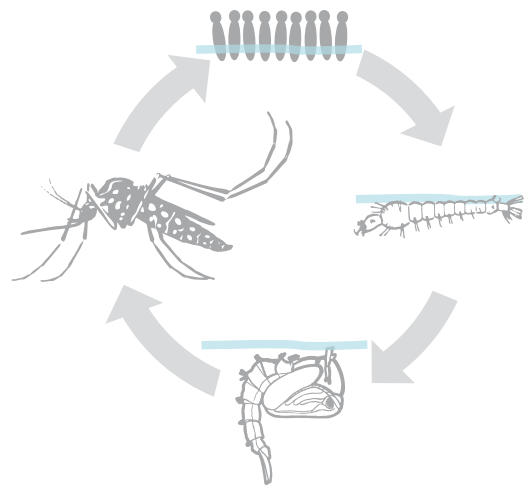
Malaria is the main disease transmitted by mosquitoes: it causes over 1 million deaths every year, predominantly in Africa, with approximately 90% of the victims being children under the age of 5. This endemic disease is hindering the economic growth and development of the countries affected.

Malaria is transmitted by mosquitoes of the *Anopheles* genus. Adult *Anopheles* have scales on their wings and a distinctive resting position as they hold their abdomen upright instead of level with the resting surface as observed in other genera. They are active between early evening and dawn.

Males feed on nectar and other sources of sugar. Females, in addition to needing sugar, also need blood as a source of protein so that they can develop eggs. 2-3 days after consuming blood, females lay their eggs (between 50 and 200 of them) one by one into the water.

The eggs cannot tolerate dry conditions. After 2-3 days they hatch and a larva emerges from each one of them.

The larvae of the *Anopheles* mosquito do not have a respiratory siphon, so they keep their bodies level with the water surface.



This vector can reproduce in a variety of habitats, including rice paddy fields and irrigation water. Most species are believed to prefer clean, uncontaminated water. *Anopheles* mosquito larvae have been found in freshwater swamps, saltwater, mangrove swamps, ditches overgrown with grass, the banks of streams and rivers and small, temporary pools of rain water.

Strategies to control these vectors should aim at achieving the greatest possible reduction in population to reduce incidence of the diseases that they transmit and thereby to create a healthier environment to live in.

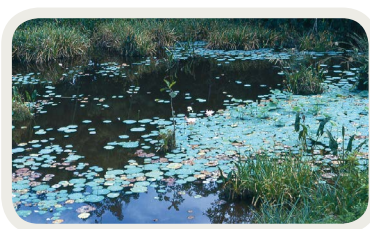
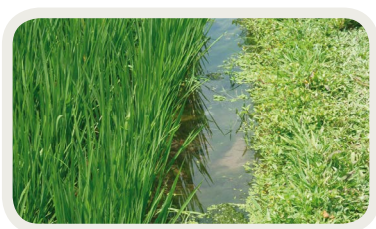
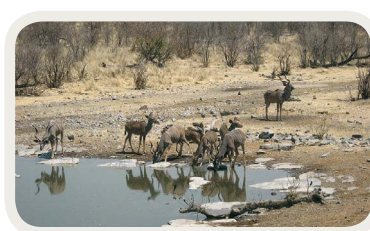
This can only be achieved by implementing an integrated control strategy that is effective

ON



in a variety of environments (within homes, outdoors areas) and that above all takes the developmental stages of the vector and personal protection into account.

At INESFLY, we offer specific product ranges to control fully-grown insects (INESFLY PAINTS, INESFLY SP COATING, INESFLY EM HOUSE), to control larvae (INESFLY LARVA IGR, INESFLY LARVAE 0.5G, INESFLY LARVAE 1G) and for personal protection (BODY, INESFLY INSECT REPELLENT GEL WITH ALOE VERA).



# PROJECTS

## ASSESSMENT OF THE EFFECTIVENESS IN THE FIELD OF INESFLY 5A IGR PAINT AGAINST *Anopheles gambiae* and *Culex quinquefasciatus*

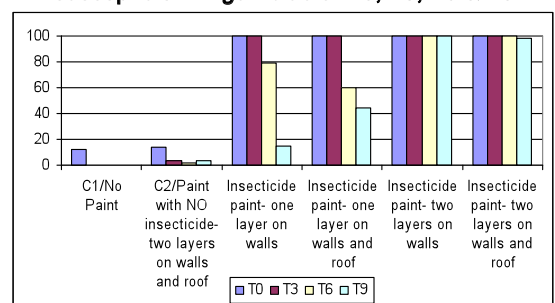
The duration and effectiveness of INESFLY 5A IGR PAINT against *Anopheles gambiae* and *Culex quinquefasciatus* was tested under field conditions. A range of applications were tested (walls, walls and ceilings) and combinations of 1 or 2 paint types. The formula's efficacy from a distance was tested.

The tests were performed by the Department of Parasitology of the University of Valencia (Spain), the LIN-IRD of Montpellier (France) and the CREC of Cotonou (Benin).

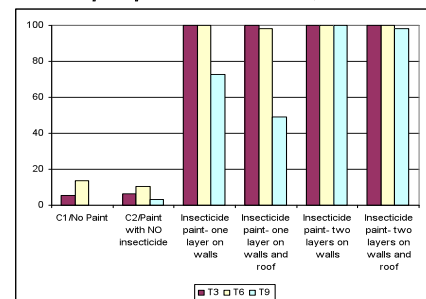
The results showed rapid mortality, effective duration of 9 months and that the paint was effective from a distance.



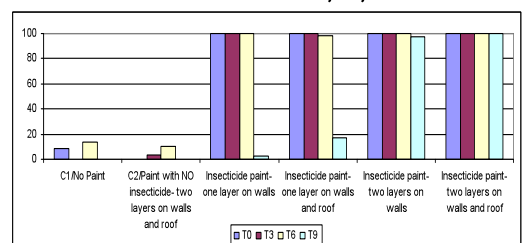
**30' Bioassays - Delayed mortality against susceptible *An. gambiae* at T0, T3, T6 & T9**



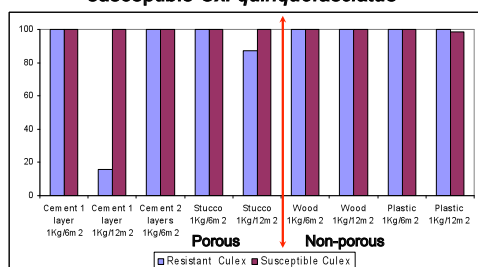
**30' Bioassays - Delayed mortality against susceptible *Cx. quinquefasciatus* at T3, T6 & T9**



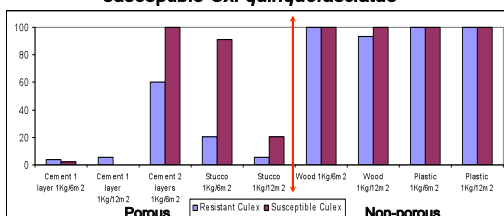
**Distance Tests against susceptible *Cx. quinquefasciatus*: Delayed mortality following an overnight exposition at distances of 100cm from 2 walls at T0, T3, T6 & T9**



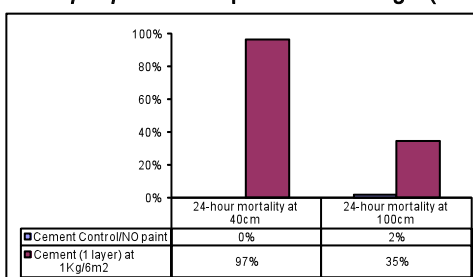
**Delayed mortality at T0 months against resistant and susceptible *Cx. quinquefasciatus***



**Delayed mortality at T12 months against resistant and susceptible *Cx. quinquefasciatus***



**Delayed mortality at T0 months against susceptible *Cx. quinquefasciatus* performed overnight (n≥55)**



## LABORATORY ASSESSMENT OF THE EFFECTIVENESS OF INESFLY 5A IGR PAINT FOR CONTROLLING *Culex quinquefasciatus* (MALARIA VECTOR) ON VARIOUS SURFACES

Carried out in collaboration with the Department of Parasitology of the University of Valencia (Spain) and the LIN-IRD of Montpellier (France). Laboratory tests were performed on the effective duration of types which are resistant or susceptible to *Culex quinquefasciatus* organophosphates. INESFLY 5A IGR PAINT was tested in two concentrations and on a range of surfaces (wood, metal, cement and plaster).

The results made it possible to establish that the product has high mortality on non-porous surfaces after 1 year. It demonstrated rapid mortality of susceptible individuals on porous surfaces, even after 1 year. There are no significant differences between different concentrations. It is effective for longer with 2 coats than with 1 coat. IGR demonstrates efficacy on porous surfaces after more than 9 months, even when the insecticide has ceased to be effective. Efficacy from a distance was also observed.



# PRODUCTS OF INESFLY AFRICA



# PUBLIC HEALTH

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## INESFLY 5A IGR NG

### DESCRIPTION

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Inesfly 5A IGR NG paint enables the control of all arthropods and pests, especially to control vectors that transmit endemic diseases including malaria, dengue fever, Chagas disease, leishmaniasis etc.

Highly effective for all kinds of insects: mosquitoes, flies, cockroaches, bed bugs, fleas, ticks, spiders, scorpions, ants and mites.

It can be used anywhere there is a substantial infestation of insects, including: Inside and outside homes, offices, health centres, hospitals, schools, hotels etc.

### COMPOSITION

---

|                          |        |
|--------------------------|--------|
| Alpha-cypermethrin ..... | 0.7%   |
| d-Allethrin.....         | 1.0%   |
| Pyriproxyfen .....       | 0.063% |

### USES

---

Easy to use as a standard water-based paint, and can be applied with a brush, a roller or an air-powered or airless sprayer. The applicable dosage can vary between 1 lt/6 m<sup>2</sup> and 1 lt/12 m<sup>2</sup>, depending on the type of surface, the type of pest and the severity of the infestation.

For best results, apply INESFLY PAINTS on the largest surface area possible to avoid creating “safe havens” for pests.

### PRESENTATION

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1 litre, 5 litres and 10 litres



## INESFLY 5A IGR

### DESCRIPTION

Inesfly 5A IGR paint is highly effective on all kinds of insects: mosquitoes, flies, cockroaches, bed bugs, fleas, ticks, spiders, scorpions, ants and mites.

Allows you to control all kinds of arthropods and pests, and in particular to control vectors that transmit endemic diseases including malaria, dengue fever, Chagas disease, leishmaniasis etc.

Inesfly 5A IGR paint is specially recommended for areas with pyrethroid-resistance problems.

Product is exclusively for professional use.

### COMPOSITION

|                    |        |
|--------------------|--------|
| Chlorpyrifos ..... | 1.5%   |
| Diazinon .....     | 1.5%   |
| Pyriproxyfen ..... | 0.063% |

### USES

Easy to use as a standard water-based paint, and can be applied with a brush, a roller or an air-powered or airless sprayer. The applicable dosage can vary between 1 lt/6 m<sup>2</sup> and 1 lt/12 m<sup>2</sup>, depending on the type of surface, the type of pest and the severity of the infestation.

For best results, apply INESFLY PAINTS on the largest surface area possible to avoid creating "safe havens" for pests.

### PRESENTATION

1 litre, 5 litres and 10 litres



## INESFLY EM HOUSE IGR NG

### DESCRIPTION

INESFLY EM HOUSE IGR NG is a ready-to-use, water-based transparent biopolymer coating that contains suspended biopolymer microcapsules which serve as insecticides, acaricides and insect growth regulators.

Highly effective at controlling all kinds of arthropods. Can be used wherever paint cannot be applied.

Can be applied to fabrics: Product is specially designed to protect personal fabrics in environments with high infestations of disease-transmitting vectors.

Product supplied to NATO - No. 9484B

### COMPOSITION

|                          |        |
|--------------------------|--------|
| Alpha-cypermethrin ..... | 0.3%   |
| d-Allethrin.....         | 0.3%   |
| Pyriproxyfen .....       | 0.063% |

### USES

Product is ready to use. Apply directly to any surface you wish to treat. Can be applied using an air-powered sprayer. Spray around 50 ml of the product per m<sup>2</sup> (a 5 lt sprayer can treat a 100 m<sup>2</sup> surface area).

Recommended for spraying fabrics including clothing, awnings etc.

Spray from a distance of 15 cm and leave to dry for 3-4 hours. Reapply after every wash.

### PRESENTATION

100 ml, 200 ml, 500 ml, 1 lt, 5 lt and 10 lt



## INESFLY EM HOUSE FLOOR CLEANER

### FLOOR CLEANER

#### DESCRIPTION

Inesfly EM House Floor Cleaner is a floor cleaner which has been designed to eliminate all kinds of dirt, especially grease. Its neutral pH means it can be used on any kind of floor.

Its composition ensures a low level of foaming when used in sweepers. It has a pleasant scent.

It is effective against all kinds of crawling arthropods including cockroaches, silverfish, ants, mites, spiders and scorpions.

#### COMPOSITION

Alpha-cypermethrin ..... 0.25%  
d-Allethrin ..... 0.25%  
Pyriproxyfen ..... 0.050%  
Mixture of non-ionic surfactants.

#### USES

Industrial floors and surfaces, farms, shops and homes. Places which need to be kept very clean and protected from crawling insects: warehouses, storerooms, terraces, basements, wine cellars, larders, food storage areas, kitchens, etc.

Dilute the product to 1% in water for normal levels of dirt, for use in sweepers and for manual use with a mop. Do not rinse.

#### PRESENTATION

1 lt and 5 lt



## INESFLY SP COATING

#### DESCRIPTION

INESFLY COATING is a water-based biopolymer coating containing suspended insecticide, acaricide and growth-regulating microcapsules. The product has a very high duration and is ideal for use in hard-to-reach places that cannot be painted.

Highly effective for all kinds of insects, including: mosquitoes, flies, cockroaches, bed bugs, fleas, ticks, spiders, scorpions, ants and mites.

#### COMPOSITION

Alpha-cypermethrin ..... 0.7%  
d-Allethrin.....1.0%  
Pyriproxyfen.....0.063%

#### USES

Dosage: 1 lt/1 m<sup>2</sup>.

For best results, apply this product on the largest surface area possible to avoid creating "safe havens" for pests.

Means of application: brush, roller, air-powered/airless sprayer, depending on the surface to be treated.

#### PRESENTATION

400 ml and 5 lt

# PERSONAL PROTECTION

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## INESFLY BODY

### DESCRIPTION

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INESFLY BODY repels flies and mosquitoes, providing over 6 hours of protection.

### COMPOSITION

---

Pyrethrum extract.  
Piperonyl butoxide.  
Cital. d-Limonene. Geraniol.

### USES

---

Apply and spread thoroughly over all areas of skin exposed to bites. You do not need to use it frequently or repeatedly.

Do not use on children under 2 years.

### PRESENTATION

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100 ml bottle.





## INESFLY BODY REPELLENT

### SANITISING REPELLENT WITH ALOE VERA

#### DESCRIPTION

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INESFLY INSECT SANITISING REPELLENT is a mosquito-repellent gel with aloe vera extract which offers excellent protection for over 6 hours. Formulated with aloe, it has a moisturising effect, unlike other repellents on the market which dry the skin.

INESFLY INSECT SANITISING REPELLENT does three things: repels, sanitises and moisturises.

#### COMPOSITION

---

Pyrethrum extract.  
Piperonyl butoxide.  
Aloe Vera.  
Citral. d-Limonene. Geraniol.

#### USES

---

Apply and spread thoroughly over all areas of skin exposed to bites. No need for frequent or repeated application.

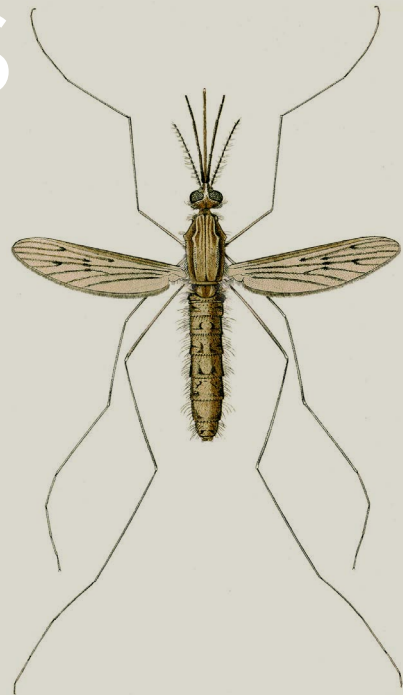
Do not use on children under 2 years.


#### PRESENTATION

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Individual sachets containing 7 ml of product. Box of 10

# CONTROL OF ANOPHELES MOSQUITO



|                |        |   | INESFLY 5A IGR NG PAINT | INESFLY 5A IGR PAINT | INESFLY EM HOUSE IGR NG | INESFLY SP COATING | INESFLY EM HOUSE FLOOR CLEANER | INESFLY BODY REPELLENT | INESFLY BODY |
|----------------|--------|---|-------------------------|----------------------|-------------------------|--------------------|--------------------------------|------------------------|--------------|
| ANOPHELES SPP. | ADULTS |  | ●                       | ●                    | ●                       | ●                  | ●                              | ●                      | ●            |

|   | INESFLY 5A IGR NG PAINT | INESFLY 5A IGR PAINT | INESFLY EM HOUSE IGR NG | INESFLY SP COATING | INESFLY EM HOUSE FLOOR CLEANER | INESFLY BODY REPELLENT | INESFLY BODY |
|---|-------------------------|----------------------|-------------------------|--------------------|--------------------------------|------------------------|--------------|
| Walls and ceilings of homes and offices     | ●                       | ●                    | ●                       | ●                  |                                |                        |              |
| Floors                                      |                         |                      | ●                       | ●                  | ●                              |                        |              |
| Standing water and puddles                  |                         |                      |                         |                    |                                |                        |              |
| Ponds, irrigation ditches, river backwaters |                         |                      |                         |                    |                                |                        |              |
| Textiles (curtains, carpets, rugs)          |                         |                      | ●                       | ●                  |                                |                        |              |
| Textiles (clothes, uniforms)                |                         |                      | ●                       |                    |                                |                        |              |
| Body (applied to the skin)                  |                         |                      |                         |                    |                                | ●                      | ●            |

# INESFLY

## CONTROLLING OTHER ENDEMIC DISEASE VECTORS

### MOSQUITOES OF THE *Aedes* genus, transmitters of dengue fever, yellow fever and chikungunya

Mosquitoes of the *Aedes* genus transmit the arboviruses that cause various diseases including dengue fever, yellow fever and the chikungunya virus.

These mosquitoes live in close contact with humans: they are found in domestic and peridomestic environments and are considered essentially urban insects. Females do not lay their eggs in water but in receptacles that contain or could contain water, both natural ones including cavities in trees or crevices in rocks, and artificial ones including swimming pools, ponds, water tanks, tyres, watering cans, vases or tins etc. Females feed on blood during the day when humans are most active, preferring human blood to that of other domestic animals.

Strategies to control these vectors must aim at reducing their populations with an integrated control strategy that is applicable in a variety of environments (within homes, outdoors) and that above all takes the developmental stages of the vector and personal protection into account.

#### INESFLY SOLUTIONS TO CONTROL *Aedes*

Controlling adults (INESFLY PAINTS, INESFLY SP COATING, INESFLY EM HOUSE). Controlling larvae (INESFLY LARVA IGR, INESFLY LARVAE 0.5G, INESFLY LARVAE 1G). Personal protection (INESFLY BODY, INESFLY INSECT REPELLENT GEL WITH ALOE VERA VERA).

### TRIATOMINE BUGS, the transmitters of Chagas disease

Triatomine bugs are the vectors of Chagas disease, an endemic disease caused by the *Trypanosoma cruzi* protozoon, which is transmitted in the faeces of these bugs.

**Chagas disease** remains a serious health problem, and there is no vaccine for it. Controlling its transmitting vector remains the only option to eradicate the disease. It is endemic to large parts of America, from the southern United States to southern Argentina. Around 18 million people are thought to be affected, and around 100 million are thought to be at risk of contracting the disease.

Although there are over 100 species of triatomines, only 50% of them have been found to be naturally infected with *T. cruzi*. Of all those vectors, the most effective and that most frequently found colonising domestic habitats is *Triatoma infestans*, widely known as the kissing bug.

The kissing bug species is almost exclusively found within the home. It is most commonly found in human dwellings as well as in areas inhabited by domestic animals, including chicken coops, dovecotes and rabbit hutches. This insect tends to hide inside cracks in walls, ceilings and behind furniture, clothes and other items.

Overnight, when humans are asleep, kissing bugs emerge from their hiding places to feed on blood. Once they are on the person or animal on which they are going to feed, the bugs draw blood and defecate, and it is in that faeces that the parasitic protozoon is found.

#### INESFLY SOLUTIONS TO CONTROL TRIATOMINE BUGS

Controlling adults in domestic and peridomestic environments (INESFLY PAINTS, INESFLY SP COATING, INESFLY EM HOUSE).

### SANDFLIES, the transmitters of leishmaniasis

These are tiny 2-4 mm Diptera flies. Their bodies appear like that of a mosquito, but smaller. They belong to the Psychodidae family, are





haematophagous and females need blood to reproduce. 800 species have been identified, two-thirds of which have been reported in the Americas, the Middle East and Central Asia.

The adults are straw-yellow in colour and fly silently. They do not need water during their life cycle, only a certain amount of humidity, which is why they have been able to live in a wide variety of habitats, from leaf litter and cavities in the roots and trunks of trees in tropical rainforests to rodent burrows and caves. Most of the species have nocturnal feeding habits, but it is not unusual for the insects to bite during the day, and there are some species which only come out in daylight.

Sandflies have a painful bite, but their primary medical significance derives from being the vectors of leishmaniasis which, after malaria, is the second-most important transmissible disease produced by protozoa.

#### INESFLY SOLUTIONS TO CONTROL SANDFLIES

Controlling adults in domestic and peridomestic environments (INESFLY PAINTS, INESFLY SP COATING, INESFLY EM HOUSE). Personal protection (INESFLY BODY, INESFLY INSECT REPELLENT GEL WITH ALOE VERA).

#### SCORPIONS, the cause of scorpion stings

These are arachnids that can potentially invade and colonise homes, causing serious problems including death from stings, predominantly in children.

There are around 1500 known species, living in all parts of the globe except the polar regions, whilst Mexico is the country with the greatest number of different species (221), seven of which can kill humans.

All scorpions are able to inject venom containing 80 different toxins, 10 of which are toxic to humans, but only 25 species in the world have been identified as lethal to humans.

There are an estimated 1.2 million scorpion stings every year, resulting in around 3250 deaths. 1000 people die from scorpion stings every year in Mexico.

#### INESFLY SOLUTIONS TO CONTROL SCORPIONS

Controlling adults in domestic and peridomestic environments (INESFLY PAINTS, INESFLY SP COATING, INESFLY EM HOUSE, INESFLY EM HOUSE FLOOR CLEANER).



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