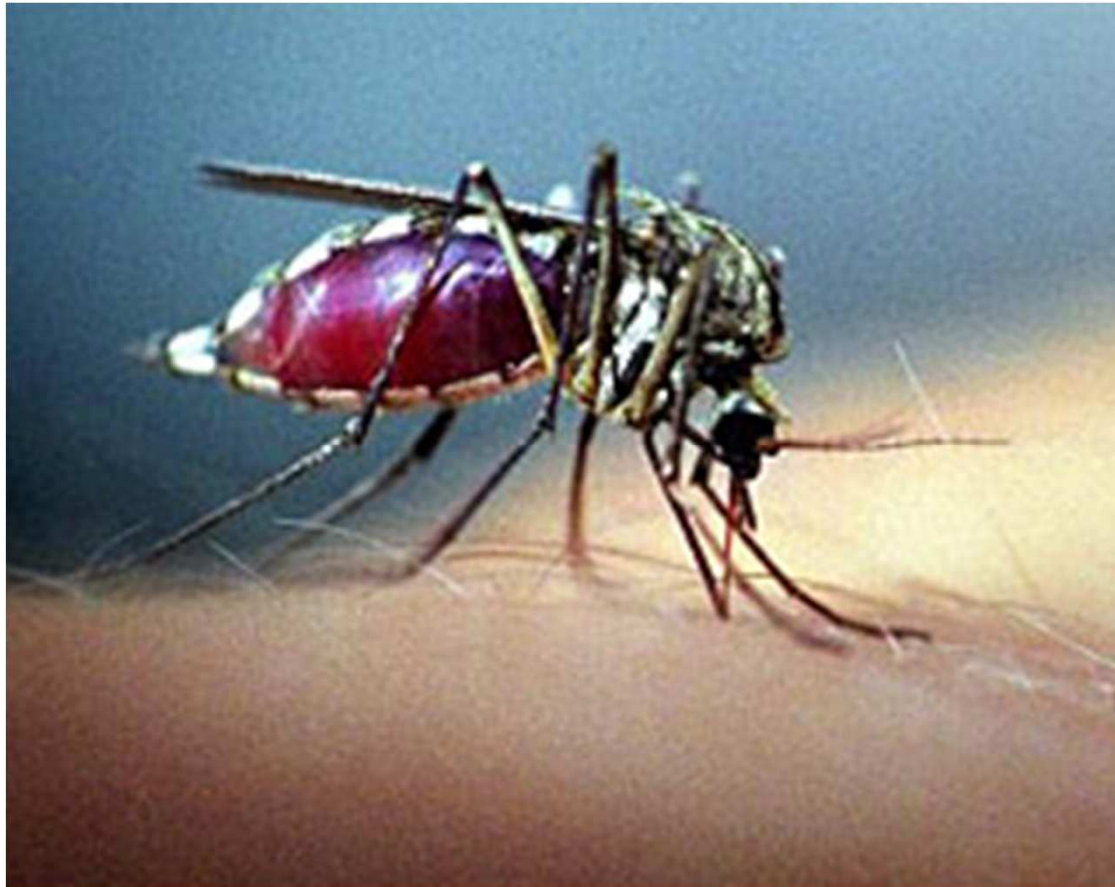




# Sanitized<sup>®</sup> Vector and pest protection on textiles

Mosquito nuisance - no thanks...



# What are vectors and how do they transmit diseases ?



- › Mosquitoes transmit malaria, dengue fever or yellow fever



- › Lice can transmit typhus



- › Fleas host encephalitis germs as well as agents of other diseases



- › Tsetse flies transmit sleeping sickness



- › Sand flies can transmit leishmaniasis



# What are vectors and how do they transmit diseases ?



- › Ticks transmit lyme borreliosis



- › Bed bugs can be carrying plague and hepatitis B  
Bedbugs are not regarded as a vector of transmissible diseases



# Why focusing on mosquitoes ?



**Of all disease-transmitting insects, mosquitoes are the most dangerous.**

Among mosquitoes the genus of Anopheles are the transmitter of malaria, which next to tuberculosis is the deadliest infectious disease in the world.,,

In the temperate zones of Europe, ticks transmit Lyme borreliosis. Ticks can carry various pathogenic agents, which they are able to transmit with a single bite.



# Which mosquito species are important ?



Worldwide there are over 3,500 species of mosquitoes. Many of them are "only" annoying.

Over 100 species, however, are possible vectors of diseases. The mosquitoes themselves are not causes of disease. When they ingest the blood of an infected host they also take in disease-causing agents, which they pass on to a new host when they ingest the infected blood.

Yellow fever mosquito  
„*Aedes aegypti*“



Malaria mosquito  
„*Anopheles gambiae*“



„Mosquito plaque“  
Common Mosquito from  
northern temperate zones  
of Europe and USA  
„*Aedes vexans*“



# Sanitized® AM 23-24

## Home and technical textiles

### Application areas

- › Bed linen
- › Blankets and bed coverings
- › Pillows and pillow cases
- › Furniture fabrics
- › Curtains
- › Mattress ticking
- › Textile wall coverings
- › Carpets
- › Etc.



# Sanitized® AM 23-24 Garment textiles

## Application areas

- › Outdoor shirting
- › T-shirts
- › Trousers
- › Knee and hiking socks
- › Leisurewear for fishermen, hunters, horseback riders
- › Work wear for forest workers, uniforms for border patrols, etc.
- › Military camouflage garments
- › Sleeping bags



# Sanitized<sup>®</sup> AM 23-24

## Mosquito test procedure



1. Prepare mosquitoes.



2. Prepare source of heat with textile protected.



3. Position mosquitoes above source of heat with textile specimen.



# Textile specimen treated with AM 23-24 Mosquito-protection

Test with yellow fever mosquitoes: „*Aedes aegypti*“

protected



unprotected



# Sanitized<sup>®</sup> AM 23-24 Textile specimen treated with AM 23-24: Mosquito-protection

Test with malaria mosquitoes: „*Anopheles gambiae*“

protected



unprotected



# Sanitized® AM 23-24



Swiss Tropical Institute  
Institut Tropical Suisse  
Schweizerisches Tropeninstitut  
Médicine & Diagnostique



Mosquito efficacy confirmed!

Test fabric	Mosquitoes on woven fabric after:		
	1 min.	2 min.	20 min.
2% AM 23-24	0	0	0
Control	ca. 25	ca. 30	ca. 20

**Final conclusion:** The comparison of the treated textile specimens with the untreated ones confirms the very good mosquito repellence of the above products.

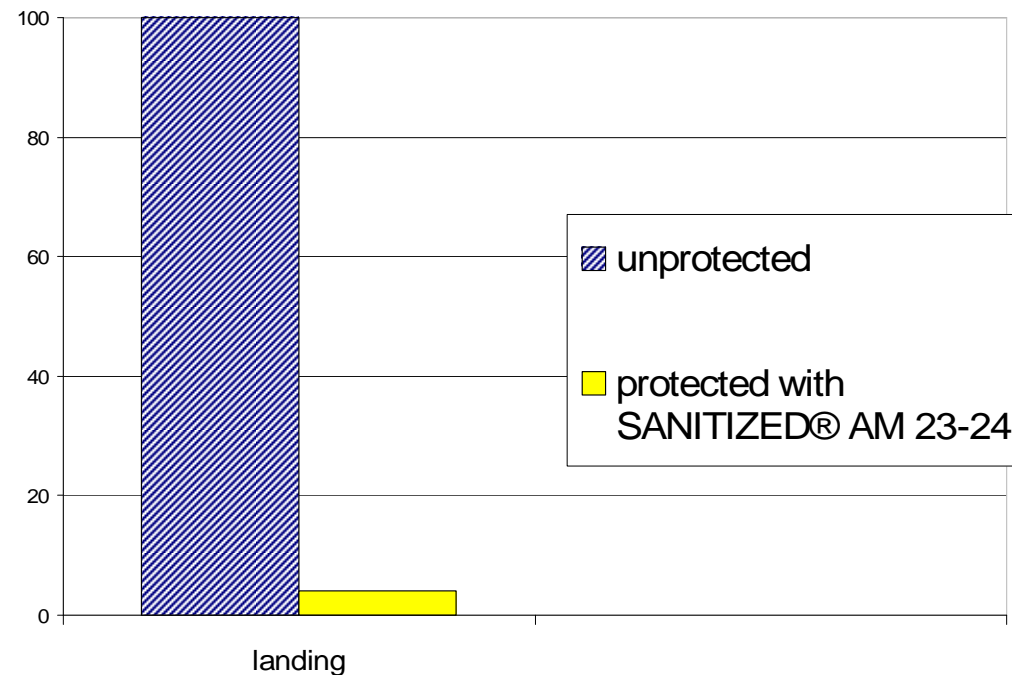
# Tested at Tropical Institute Switzerland



Swiss Tropical Institute  
Institut Tropical Suisse  
Schweizerisches Tropeninstitut  
Médecine & Diagnostique



Mosquito efficacy confirmed!



## Final conclusion:

Textiles treated with Sanitized® AM 23-24 showed a strong reduction of mosquito landings compared to unprotected textiles, thereby reducing the risk of mosquito bites. The mosquito results varied between 96-100 % reduction of mosquito landings.

# Sanitized® AM 23-24 Protects textiles from unwelcome „guests“



Protects from ticks



Reduces the number of mosquito landings/bites



**Sanitized® AM 23-24**

Protects from carpet beetles



Protects from bed bugs



# Sanitized® AM 23-24

## Product specification

- › Active ingredient: Permethrin derivative
- › Applicable by all normal application methods such as
  - Padding
  - Spraying
  - Foam
  - Coating
- › Dispersible in water
- › Pale yellowish liquid
- › Non-ionogenic
- › Temperature stability up to 150° C
- › Product requires no curing



- › AM 23-24 will be tested according to Oeko-Tex Standard 100 and will be approved for Class I textiles (baby).
- › It is biocompatible according to Cytotoxicity Test institute Hohenstein/Germany



# Sanitized® AM 23-24 / Focused on mosquito protection



**TEST CERTIFICATE**      **SANITIZED AG**

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SANITIZED AG  
Lyssachstrasse 95  
CH-3400 Burgdorf

SANITIZED AG  
Mr. Erich Rohrbach  
Lyssachstrasse 95  
Postfach 764  
CH-3401 Burgdorf

**Description of sample:**

Sample number: 2005-1840-01      Received: 20.09.2005      TA

Identification: Lot. 20092005

Main Component: Cotton 100%

Appearance: Yellow

Field of Application: Bed sheets

Sanitized: ACTIGARD AM 23-13

Declared Residual Amount: 1.5%

Final Process(es): Tadding

Final Parameter(s): 120°C - 90 sec.

**Test results of the SANITIZED-laboratory:**

Method:	Test point:	Growth:	Halo in mm:	Evaluation:
HPLC-Mü-e Analytical value	Assessment for the carrying out of an external mosquito test:	-	-	recommended

SANITIZED AG

Burgdorf, 20.09.2005

Evaluation of the results of an antimicrobial test carried out in accordance with the standard EN 1831:2005 (ISO 15822:2005).  
Inhibits some fungi in vitro. The sample is fully protected against the growth of test organisms and shows a good effect.  
Micro growth: at least 90% of the sample surface is free of microbial growth.  
Structure or total growth: the sample is insufficiently protected against the test organism and partially or completely covered with microbial growth.  
No test for protection against mosquitoes.

<b>Test results of the SANITIZED-laboratory:</b>				
Method:	Test point:	Growth:	Halo in mm:	Evaluation:
HPLC-Mü-e Analytical value	Assessment for the carrying out of an external mosquito test:	-	-	recommended

# Sanitized® AM 23-24

## Focused on mosquito AND hygiene protection



### Test results of the SANITIZED-laboratory:

Method:	Test point:	Bacteriostatic activity S:	Reduction in %:	Evaluation:
<b>Determination of the bacteriostatic activity:</b>				
JIS L 1902-2002	Staphylococcus aureus ATCC 6538	>3.9	>99.99%	good effect
<b>Assessment for the carrying out of an external mosquito test:</b>				
HPLC-Mü-e	Analytical value	-	-	recommended



**... Thank you for your attention !**