

# IZS

T E R A M O

/

ISTITUTO  
ZOOPROFILATTICO  
SPERIMENTALE  
DELL'ABRUZZO  
E DEL MOLISE  
"G. CAPORALE"

# Entomology group

## activities overview

Silvio G. d'Alessio  
Entomologist - IZSAM

PROVNA2 project  
Closing Workshop Phase 2  
21-22 April 2026, Tunis

# KICK-OFF MEETING (12-14 NOV 2024) FOR PROVNA2 PROJECT

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## Regional workshop on Rift Valley Fever surveillance in Northern African countries - PROVNA2

Tunis, Tunisia  
12-14 November 2024

### Preliminary AGENDA of the meeting

12 November 2024

Time	Topic	Speaker/Tutor
09.00 – 09.15	Welcome	WOAH Tunis IZS-Teramo
09.15 – 09.30	Introduction to the course: background, objectives and methodologies	WOAH Tunis IZS-Teramo
09.30 – 10.00	PROVNA project (phase 1 and phase 2)	IZS-Teramo WOAH Tunis
10.00 – 10.30	Surveillance approaches for RVF	IZS-Teramo
10.30 – 11.00	Discussion	
10.45 – 11.00	Coffee break	
11.00 – 11.45	RVF vectors and entomological surveillance	IZS-Teramo
11.45 – 12.30	Diagnosis of RVF in animals: laboratory aspects	IZS-Teramo
12.30 – 13.00	Discussion	
13.00 – 14.00	Lunch break	
14.00 – 15.30	Countries Presentation on RVF situation, risk factors for RVF introduction/spread and diagnostic capacities	National Contact Points
15.30 – 15.45	Coffee break	
15.45 – 17.00	Plenary discussion on already ongoing surveillance activities in the countries and available data	All participants
17.00 – 17.15	Recap of the day	IZS-Teramo / WOAH Tunis
19:30	WOAH welcome dinner	

Objectif Général

Objectifs spécifiques

Localisation/Zones

Calendrier (saisonnier, continu, ...)

Méthode et cible

Informations complémentaires



## CDC – Light trap



## BG Sentinel



## BG – Pro: 2 in 1



In two different operation modalities:

- **BG Sentinel style**
- **CDC Light Trap style**

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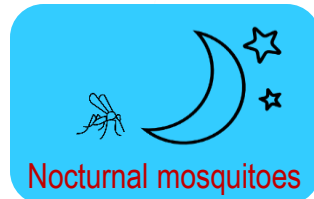
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## FLYING ADULT TRAPS: specifications

SPECIFICATIONS	BG PRO	CDC LIGHT	BG SENTINEL
Battery (12v) W=2kg Life: 14h/20h	YES	YES	YES
Power bank (6v 10.000 mAh) W=0,180Kg Life: 24h/48h	YES	NO	NO
Main power supply	YES	NO	YES
Automatic shutter	YES	NO	YES
Catch bag above the fan	YES	NO	YES
Dry ice container	YES	YES	NO
Standing mode	YES	NO	YES
Hanging mode	YES	YES	NO

### ATTRACTANTS



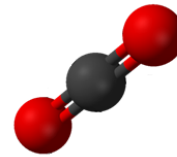
Light



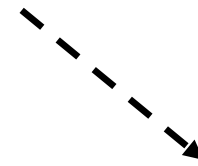
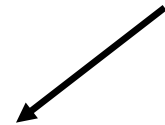
CDC – Light trap  
BG Pro



**CO<sub>2</sub> from gas bottle**  
CO<sub>2</sub> at a rate of 175 ml/min  
10 kg of CO<sub>2</sub> last ~20 days



CO<sub>2</sub>



**CO<sub>2</sub> from DRY ICE**  
1 kg of dry ice = CO<sub>2</sub> at a rate of 387 ml/min



Lure



BG – Sentinel  
BG Pro



**CO<sub>2</sub> from yeast fermentation**  
CO<sub>2</sub> production for 24 hours

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## PERIOD OF INTENSE COLLABORATION: IZSAM, WOAAH, AND NORTH AFRICA!



### LETTER OF DONATION/LETTRE DE DONATION

Donor/Donateur: Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale" (IZS - Teramo)

Donor contact/Contact du donateur: .....

Funding source/ Source de financement: World Organisation for Animal Health (WOAH) - Project "Establishment of a risk-based surveillance system for Mosquito-Borne Diseases in North Africa (PROVNA2)

Shipment order number/numéro d'ordre d'expédition: .....

Courier/Courrier: .....

Materials or Equipments description/Description du matériel ou des équipements:

- N. 15 mosquito traps (Kit BG PRO), Biogents
- N. 15 Cables to use the traps with electricity, Biogents.
- N. 15 BG Lure attractants (Mozzibait), and refill lures (4 packs with 10 lures each), Biogents
- N. 7 spare nets (with 2 bags and 1 funnel net each), Biogents
- N. 15 BG-Booster CO2 (tube and pressure regulator), Biogents

Beneficiary/Bénéficiaire: .....

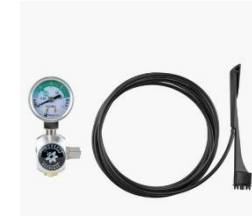
## List of materials shipped to each countries

(double the amount for Tunisia):

- 15 BG pro traps



- 15 BG booster



- 15 BG mozzibait with cartridge



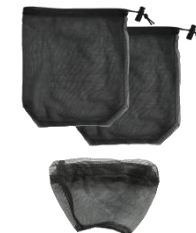
- 4 packs BG mozzibait (refill) set



- 15 cable for main power supply



- 7 spare nets (2 collection bags and 1 funnel nets)



COUNTRY	DATE
ALGERIA	10 April 2025
LIBYA	15 April 2025
MAURITANIA	15 April 2025
MOROCCO	16 April 2025
TUNISIA	22 May 2025

- Shipment of equipment (mosquito traps and accessories)
- Additional equipment for mosquito traps (gas cylinders and power banks)
- Country profile and surveillance activities
- Critical Issues and specific requirements



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SAVE THE DATE



15  
JULY

2<sup>nd</sup> Webinar – PROVNA 2

Entomology: use of BG-PRO traps

Entomologie : utilisation de pièges BG-PRO

## Agenda

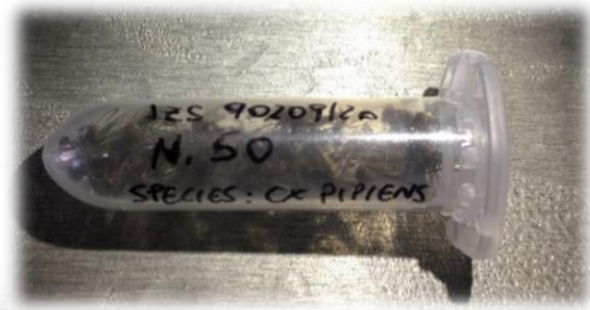
Time	Topic	Speaker/Tutor
10 min	Welcome and introduction to the workshop: objectives and methodologies	WOAH / IZS-Teramo
40 min	<p>BG Pro trap: how &amp; where to use it</p> <ul style="list-style-type: none"> <li>• Comparison between the conventional trap models and the BG Pro</li> <li>• Characteristics and peculiarities of BG Pro trap</li> <li>• List of materials shipped to each country and how to assemble the trap</li> <li>• Attractants and Power sources</li> <li>• Where to place the traps</li> </ul>	IZS-Teramo
10 min	Video tutorial (FRA and ENG) "The BG Pro Trap: components and installation"	WOAH / IZS-Teramo
30 min.	Discussion	All participants
15 min	<p>Sample management</p> <ul style="list-style-type: none"> <li>• How to manage the samples</li> <li>• How to store the samples</li> </ul>	IZS-Teramo
15 min.	Discussion	All participants

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- manual BG Pro
- how to assemble the trap and which attractants and power sources can be used
- how and where to place the trap in field
- how to manage the adult mosquito samples



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### Mosquito surveillance

Use of BG Pro traps and samples management

Silvio G. d'Alessio

PROVNA 2  
Webinar, 15-July-2025

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### FLYING ADULT COLLECTION

Suction traps BG - Pro: 2 in 1

Versatility

Some components seem not very durable!  
Anyway all componets are replaceable.

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### CDC light trap style

Option: Rainshield

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### ADULT SAMPLES FROM THE FIELD TO THE LABORATORY

Mosquitoes  
Cotton wool  
Silica gel

Do not compress the cotton layer to avoid crushing and damaging the mosquitoes.

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Protocols and video are shared with the Countries:

## FIELD AND LABORATORY PROTOCOLS

**ARABIC:** وصف مخصصة BG-PRO يمكن استخدام هذا النوع من المصيدة بطريقتين وفقاً للهدف المطلوب: طريقة الحارس (BG-Sentinel): تستخدم لجمع البعوض الناضج والناثق خاصة الأنواع الضامة للإنسان مثل (Aedes albopictus) أو (Aedes aegypti) أو (Culex pipiens) أو (Culex quinquefasciatus) على الأرض أو على ارتفاع 50 سم كحد أقصى من الأرض. طريقة CDC: تستخدم لجمع البعوض الناضج والناثق خاصة الأنواع الضامة للإنسان مثل (Aedes albopictus) أو (Aedes aegypti) أو (Culex pipiens) أو (Culex quinquefasciatus) على الأرض أو على ارتفاع 150 سم كحد أقصى من الأرض. الرجاء الرجوع إلى دليل تركيب المصيدة "Manual-BG-PRO-web.pdf" المتوفر عبر الرابط التالي: <https://eu.bioagents.com/telechargements/71anq-fr>

**FRENCH:** DESCRIPTION DE la Piège BG-PRO Ce modèle de piège peut être utilisé de deux manières (ou styles), selon la cible: Modèle BG-Sentinel: Collecte des moustiques femelles adultes en quête d'hôte, en particulier les espèces anthropophiles telles que *Aedes aegypti* ou *Ae. albopictus*. Le piège doit être positionné au sol ou à une hauteur maximale de 50 cm du sol. Modèle CDC: Collecte des moustiques femelles adultes en quête d'hôte, notamment les espèces nocturnes telles que *Culex sp.* ou les moustiques des eaux temporaires comme *Aedes vexans* ou *Ae. caspius*. Le piège doit être positionné à environ 150 cm du sol. Pour l'assemblage du piège, veuillez consulter le manuel "Manual-BG-PRO-web.pdf", disponible sur le lien suivant: <https://eu.bioagents.com/telechargements/71anq-fr>

**ENGLISH:** DESCRIPTION OF BG-PRO TRAP This trap model can be used in two modalities (styles) according to the target: BG-Sentinel Style: collection of host-seeking adult female mosquitoes, especially anthropophilic species such as *Aedes aegypti* or *Ae. albopictus*. The trap should be positioned on the ground or at maximum 50 cm from the ground. CDC Style: collection of host-seeking adult female mosquitoes, especially nocturnal species such as *Culex sp.* or floodwater mosquitoes such as *Aedes vexans* or *Ae. caspius*. The trap should be positioned approximately 150 cm from the ground. Please, for the trap assembling read the "Manual-BG-PRO-web.pdf", which is available at the following link: <https://eu.bioagents.com/telechargements/71anq-fr>

ARABIC

FRENCH

ENGLISH

VIDEO TUTORIAL  
on assembling and  
placing the BG trap

FRENCH  
ENGLISH



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## TRAINING COURSE IN TERAMO

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Animal health

*Mosquito Identification Training*

### IZSAM Tutors

Silvio Gerardo d'Alessio

Matteo De Ascentis

## Training course on identification of Mediterranean mosquitoes

PROVNA2

10-14 novembre 2025

**Algérie – Mauritanie -Tunisie**

Beneficiaries:

KACI MOUSSA Salima

HOUIDECHE Abed

BARRY Yahya

FATIMETOU BOUNENE N'diaye

THABET Sarra

17-21 novembre 2025

**Libye - Maroc**

Beneficiaries:

AMAZIGH Abdellah

LAHRACH Meriem

SHAIBI Taher

ELSHEH Ahmed

KHALIFA Saadawi Walid



## LARVAE: identification at genus level

**4. Identification of Culicidae larvae to genus level**

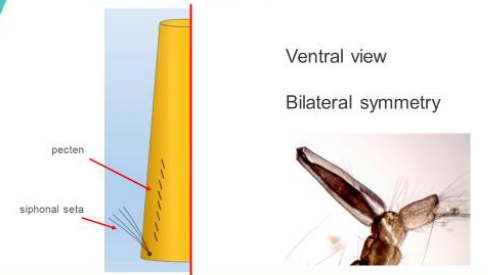
Silvio G. d'Alessio  
Matteo De Ascentis

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Mosquito identification training  
November 10-14, 2025

**Culicinae: SIPHON**

Ventral view  
Bilateral symmetry

pecten  
siphonal seta



## ADULTS: identification at genus level

**5. Identification of Culicidae adults to genus level**

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Matteo De Ascentis

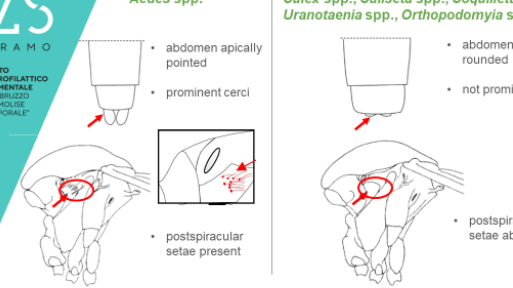
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**Aedes spp.**

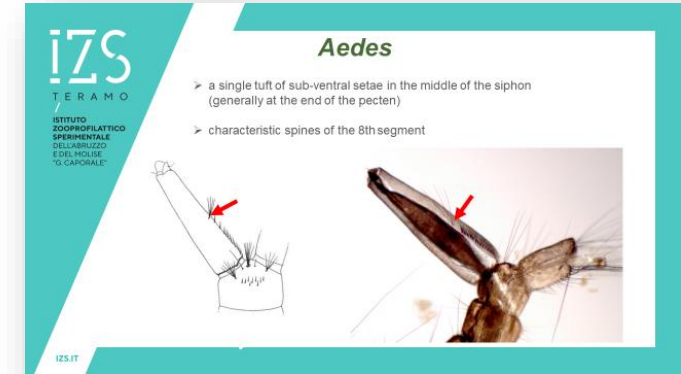
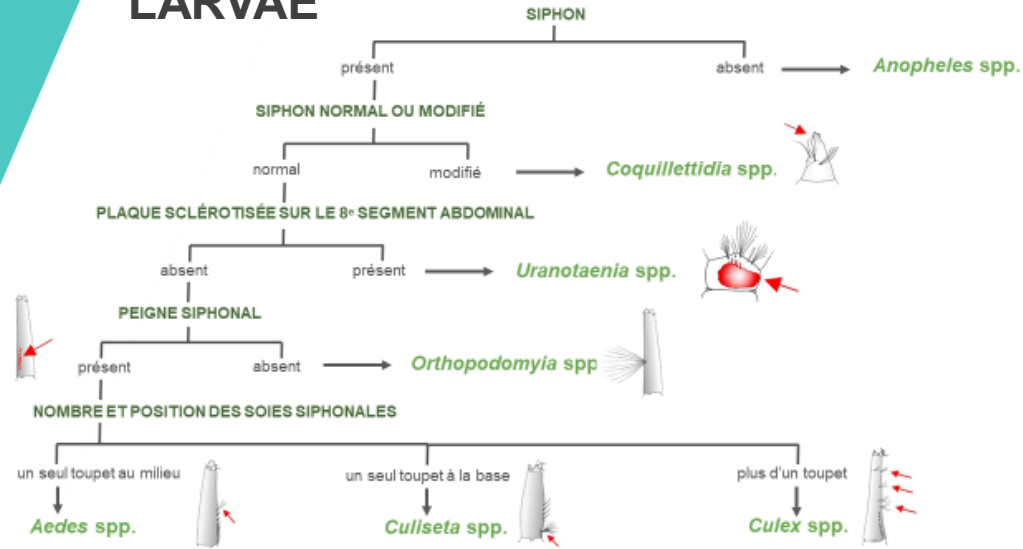
- abdomen apically pointed
- prominent cerci
- postspiracular setae present

**Culex spp., Culiseta spp., Coquillettidia spp., Uranotaenia spp., Orthopodomyia spp.**

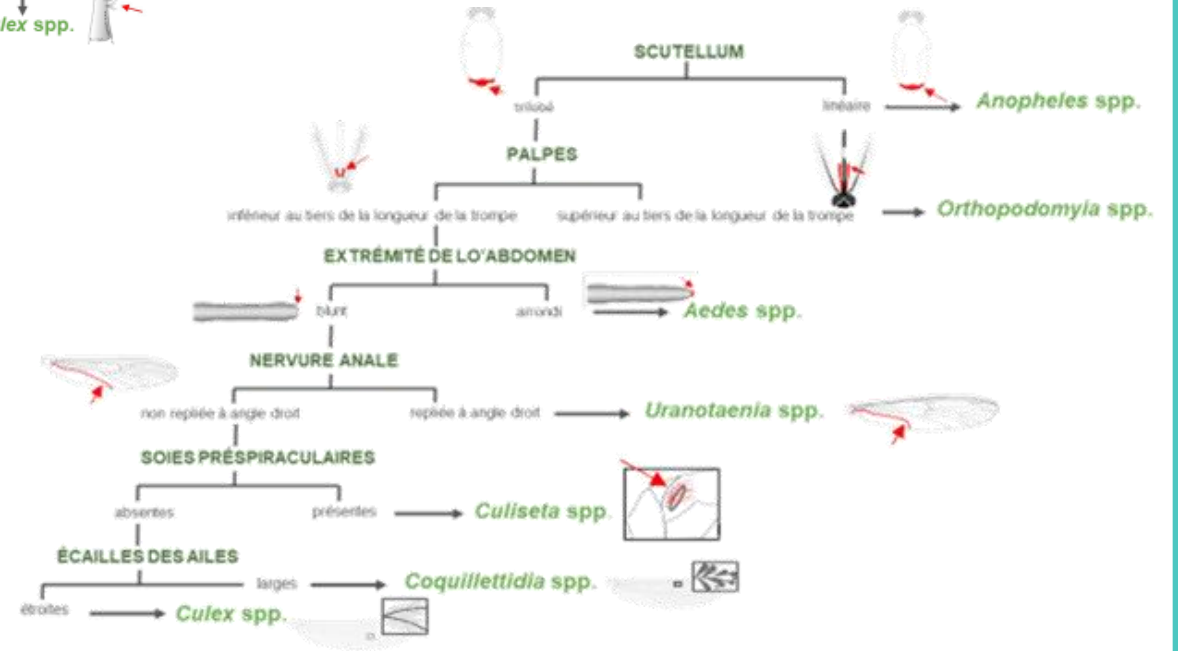
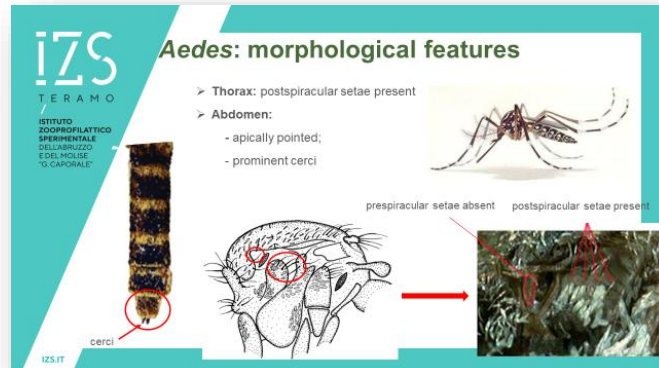
- abdomen apically rounded
- not prominent cerci
- postspiracular setae absent



## LARVAE



## ADULTS



# TRAINING COURSE IN TERAMO: identification at species level

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**6. Genus Culex:  
species identification**

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**7. Genus Aedes:  
species identification**

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**8. Genus Anopheles:  
species identification**

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**9. Other genera:  
species identification**

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Matteo De Ascentis

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# TRAINING COURSE IN TERAMO: collection methods

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## Mosquito surveillance Collection methodology and samples management

Silvio G. d'Alessio

Webinar, 11-March-2024

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SUMMARIZING COLLECTION METHODOLOGY

Methodology	Target	Attractants	Sites	Sample management
Light trap 	Nocturnal mosquitoes 	Light and dry ice 	Shaded and protected from the wind 	Sample between cotton wool in tube with silica gel 
CO <sub>2</sub> - Sentinel (CO <sub>2</sub> ) 	Diurnal (and nocturnal) mosquitoes 	Chemical lure (and dry ice) 	Protected from the rainfall 	Sample between cotton wool in tube with silica gel 
Gravid trap 	Eggs laid directly in the water 	Infusions of dead oak leaves or grass 	Shaded 	Sample between cotton wool in tube with silica gel 

IZS  
SUMMARIZING COLLECTION METHODOLOGY

Methodology	Target	Attractants	Sites	Sample management
Ovitrap 	Container mosquitoes some Aedes sp. 	Water 	Close to or under vegetation or near buildings 	In plastic bags in water for rearing larvae 
Netting, dipping, aspirating 	Larvae 	None 	Breeding sites 	Rearing L1-L3 larvae to L4 larvae or until adult emergence 
Aspirator 	Endophilic or exophilic mosquitoes 	None (indoor) or human/animal bite (indoor/outdoor) 	Indoor or outdoor 	Sample between cotton wool in tube with silica gel 



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## PROVNA2 TEAM



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Organisation  
for Animal  
Health

Organisation  
mondiale  
de la santé  
animale

Organización  
Mundial  
de Sanidad  
Animal

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## Closing Workshop Phase 2 PROVNA project

(21-22 April 2026, Tunis, Tunisia)

Preliminary AGENDA of the meeting

# THANK YOU FOR YOUR ATTENTION

Entomology Unit  
Public Health - IZSAM

Maria Goffredo  
Matteo De Ascentis  
Alessandro Di Muzio  
Serena Florio  
Michela Quaglia  
Silvio G. d'Alessio



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SAVE THE DATE



15  
JULY

2<sup>nd</sup> Webinar – PROVNA 2

Entomology: use of BG-PRO traps

Entomologie : utilisation de pièges BG-PRO

## Agenda

Time	Topic	Speaker/Tutor	
10 min	Welcome and introduction to the workshop: objectives and methodologies	WOAH / IZS-Teramo	
40 min	BG Pro trap: how & where to use it <ul style="list-style-type: none"> <li>• Comparison between the conventional trap models and the BG Pro</li> <li>• Characteristics and peculiarities of BG Pro trap</li> <li>• List of materials shipped to each country and how to assemble the trap</li> <li>• Attractants and Power sources</li> <li>• Where to place the traps</li> </ul>	IZS-Teramo	
	10 min	Video tutorial (FRA and ENG) "The BG Pro Trap: components and installation"	WOAH / IZS-Teramo
	30 min.	Discussion	All participants
	15 min	Sample management <ul style="list-style-type: none"> <li>• How to manage the samples</li> <li>• How to store the samples</li> </ul>	IZS-Teramo
15 min.	Discussion	All participants	

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## Mosquito surveillance

Use of BG Pro traps and samples management

Silvio G. d'Alessio

PROVNA 2  
Webinar, 15-July-2025

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## FLYING ADULT COLLECTION

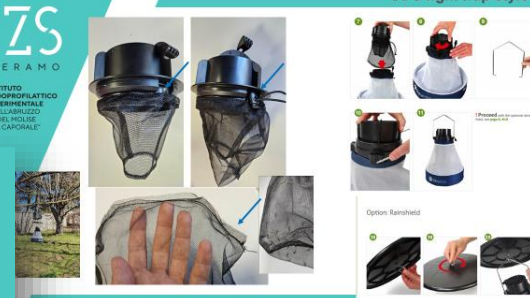
Suction traps BG – Pro: 2 in 1



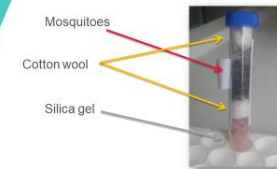
Some components seem not very durable!  
Anyway all componets are replaceable.

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## CDC light trap style



## ADULT SAMPLES FROM THE FIELD TO THE LABORATORY



Do not compress the cotton layer to avoid crushing and damaging the mosquitoes.

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Manual (ENG), protocol (ENG, FRA, AR) and video (ENG, FRA) are shared with the Countries:

- manual BG Pro
- how to assemble the trap and which attractants and power sources can be used
- how to manage the adult mosquito samples



## FIELD AND LABORATORY PROTOCOLS

**ARABIC**

**FRENCH**

**ENGLISH**

## VIDEO TUTORIAL on assembling and placing the BG trap

FRENCH  
ENGLISH



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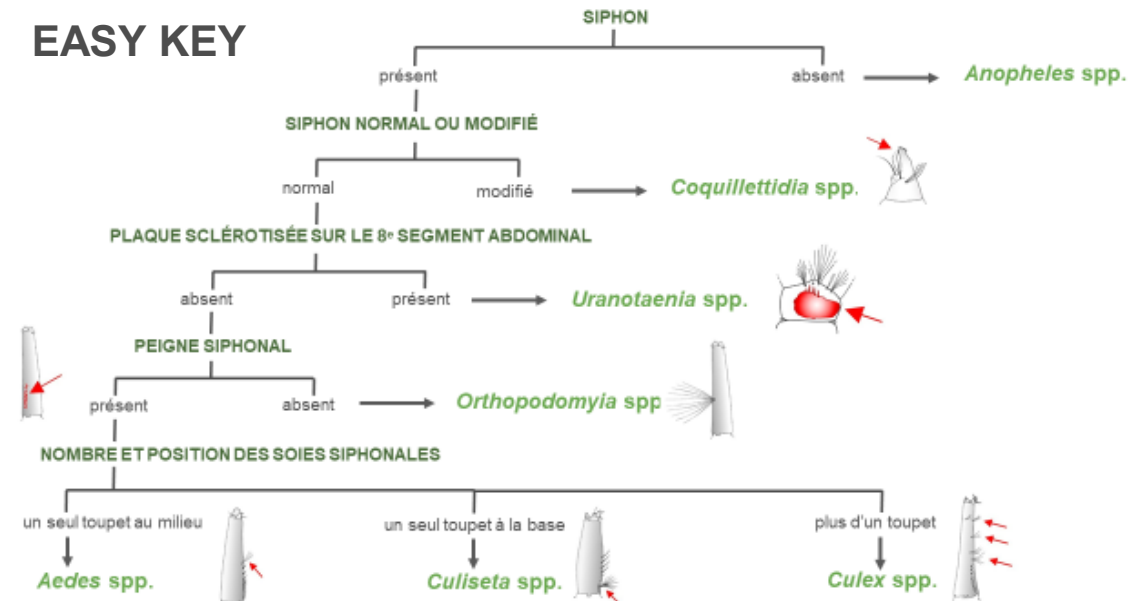
## 4. Identification of Culicidae larvae to genus level

Silvio G. d'Alessio  
Matteo De Ascentis

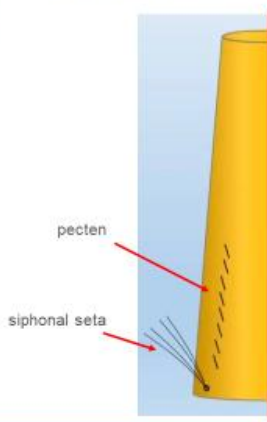
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## EASY KEY



## Culicinae: SIPHON



Ventral view

Bilateral symmetry



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## 5. Identification of Culicidae adults to genus level

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TERAMO  
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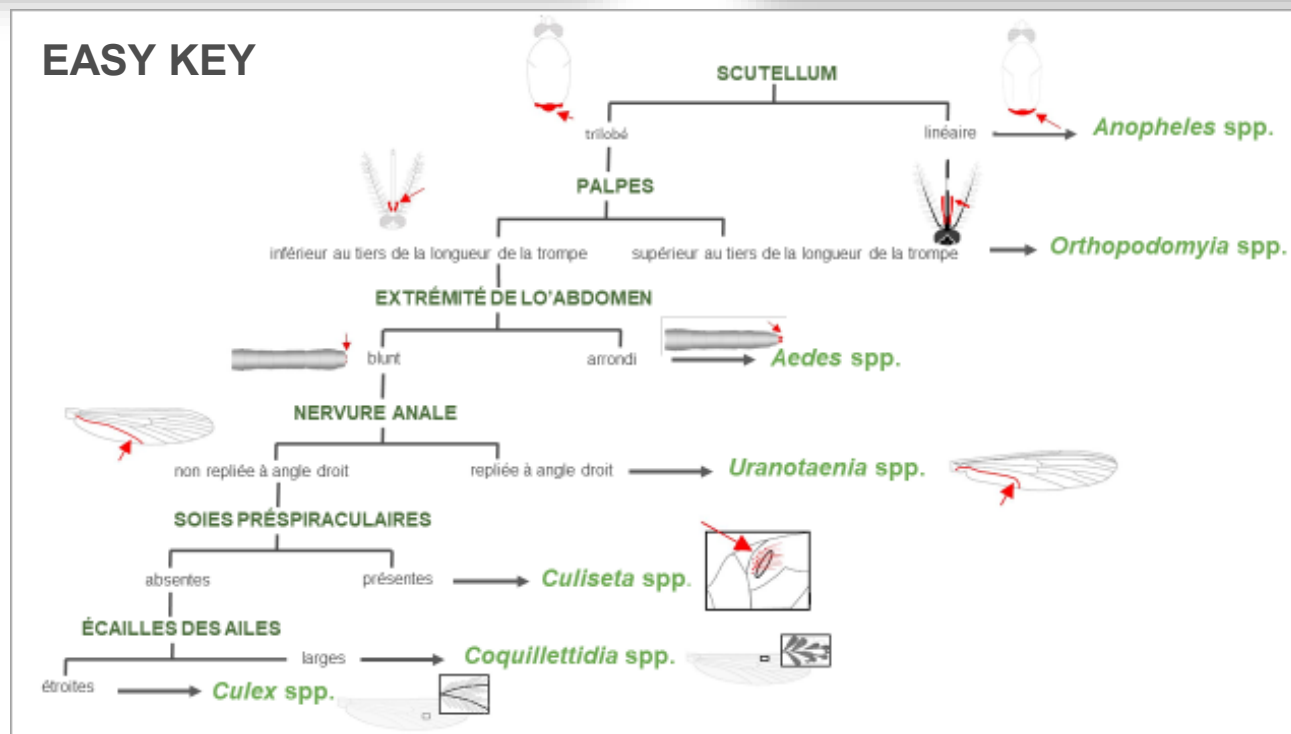
### Aedes spp.

- abdomen apically pointed
- prominent cerci
- postspiracular setae present

### Culex spp., Culiseta spp., Coquillettia spp., Uranotaenia spp., Orthopodomyia spp.

- abdomen apically rounded
- not prominent cerci
- postspiracular setae absent

IZS.IT



# IZS

T E R A M O

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ISTITUTO  
ZOOPROFILATTICO  
SPERIMENTALE  
DELL'ABRUZZO  
E DEL MOLISE  
"G. CAPORALE"



World  
Organisation  
for Animal  
Health

Organisation  
mondiale  
de la santé  
animale

Organización  
Mundial  
de Sanidad  
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T E R A M O

ISTITUTO  
ZOOPROFILATTICO  
SPERIMENTALE  
DELL'ABRUZZO  
E DEL MOLISE  
"G. CAPORALE"

## Closing Workshop Phase 2 PROVNA project

(21-22 April 2026, Tunis, Tunisia)

Preliminary AGENDA of the meeting