

Management plans for Invasive Mosquito Species Control

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LIFE CONOPS (LIFE12 ENV/GR/000466)

LIFE CONOPS MID-TERM WORKSHOP
ATHENS - 10th December 2015



TARGET IMS SPECIES

- *Aedes albopictus*
- *Aedes aegypti*
- Others IMS (*Ae. atropalpus*, *Ae. japonicus*, *Ae. koreicus*, *Ae. triseriatus* and *Ae. cretinus*)



ALBO MANAGEMENT PLAN COMPONENTS

- Standardized quantitative monitoring
- Public health risk assessment
- Community participation
- Standard control measures in public areas
- Standard control measures in private areas
- Emergence control measures
- Pilot doo-to-door control measures in private areas
- Efficacy & Quality control methods
- Resistance prevention



ALBO MANAGEMENT PLAN

Standardized quantitative monitoring aims

- to estimate the vector density level during the favorable season
- to estimate the sanitary risk for VBD
- to evaluate the impact of vector control measures on the vector density
- to evaluate the possible population dynamic changes in long term

ALBO MANAGEMENT PLAN

Community participation

- Education in school
- Citizen information (TV, radio, news, web)
- Mayor ordinance
- Distribution of domestic insecticides
- Non profit organizations involvement
- Efficacy evaluation?



ALBO MANAGEMENT PLAN

Standard control measures in public areas

- census and mapping of public road drains;
- larval control in road drains: (e.g. 5 treatments per season with IGR)
- adult control in specific sites following specific need analysis (e.g. schools, hospitals, urban green areas)

ALBO MANAGEMENT PLAN

Standard control measures in private areas

- Mayor ordinance
- Domestic water containers elimination
- Larval control in permanent breeding sites
- Mosquito proof measures adoption (e.g. covering of container)



ALBO MANAGEMENT PLAN

Emergency control measures in case of DEN, CHIK & ZIKA imported case detection (suspected or confirmed)

- based on the vector density observed
- prompt activation of vector control operations (< 24 hrs)
- identification of the areas to be submitted to vector control (100 m ray for singular case, 300 m ray for cluster)
- in public areas: three consecutive adult control treatments during the night + larval control in road drains
- in private areas: adult + larval control door-to-door during the day
- stop the operation in case the suspected case is not lab confirmed



ALBO MANAGEMENT PLAN

Door-to-door control measures in private areas

- Five larval control treatments in the public road drains with IGR (Diflubenzuron) (minimum threshold of treated road drains 95%)
- Five door-to-door interventions (larval control, source removal and citizen direct education) (minimum threshold of properties inspected 95%)
- Identification and reporting to the authorities of the non-collaborative citizen
- Quality control operations on mosquito control activities
- Intensive monitoring with ovitraps
- Introduction of Copepods in large water containers
- Sterile males releases in specific sites
- Adulticide treatments only in case of real needs
- Info contact green point (web, phone)



ALBO MANAGEMENT PLAN

Quality control methods on larval control in public road drains

- Census and mapping of the public road drains
- the PCO must regularly report on the treated roads
- In case the PCO mark the road drains, inspects the rate of marking in the 3-5% of the road drains
- A % of the total road drains censused should be sampled following each treatment
- Sampling will be conducted in the pre-defined time window (e.g. 10-20 days post-treatment for Diflubenzuron) with a water net and number of larvae/pupae recorded
- Weekly reporting to the Municipality



ALBO MANAGEMENT PLAN

Resistance prevention

- Maintain the record of insecticide used in each localities & year
- Each year consider some localities to be checked for albo population sensitivity
- Collect about 2,000 eggs in each locality
- Conduct standard bioassays for LD calculation in parallel on field and reference lab larvae

ANNEX LIST TO THE ALBO MANAGEMENT PLAN

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- SOP for ovitraps field management
- SOP for eggs counting
- Quality control procedure for the *Aedes albopictus* monitoring
- Mayor ordinance scheme
- Protocol for emergence vector control operations in case of Den, Chik & Zika cases detection
- Quality control procedure for larval treatments efficacy in road drains
- Protocol for bioassays on insecticide sensibility
- Public tender for PCO



AEDES AEGYPTI MANAGEMENT PLAN

- Immediate formal communication to the Public Health authorities and Municipalities
- extended surveillance to define the colonized area
- immediate application of intensive capillary control measures aimed to the maximum reduction of population density
- Public information
- Local and Regional authorities involvement
- Quality control methods



AEGYPTI MANAGEMENT PLAN

Immediate formal communication to the Public Health authorities and Municipalities

- immediate emanation of Public Health regulation to support extraordinary measures
- organization of a crisis unit including representatives of stakeholders and authorities
- obtain a mandate from the court allowing to entry in private properties for public health emergence



AEGYPTI MANAGEMENT PLAN

Enlarge the surveillance to define the colonized area

- prepare a series of maps of different scales of the area including the site of first detection (P. of E.)
- position ovitraps (and B.G.) at a progressive distance from the site of detection considering the more favourable ecological condition
- as a first step 20-30 ovitraps should be placed in an area of about 1 kmsq, and enlarged in case of new positivity's
- analyse together with local authorities/stakeholders the possible way of introduction of the species and inform other entities of the risk
- analyse together with local authorities the possible pattern of passive dispersion and inform other entities of the risk (e.g. customers of positive used tyres company)

AEGYPTI MANAGEMENT PLAN

Immediate application of intensive capillary control measures aimed to the maximum reduction (possible elimination) of initial population

- Larval control treatments in the public road drains with IGR (Diflubenzuron) (minimum threshold of treated road drains 100%)
- door-to-door interventions (larval control, source removal and citizen direct education) (minimum threshold of properties inspected 100%)
- Identification and reporting to the authorities of the non-collaborative citizen
- Quality control operations on mosquito control activities
- Check sensitivity to Diflubenzuron or other Biocides
- Intensive monitoring with ovitraps (one ovitrap per ha)
- Adulticide treatments in case of detectable presence of adults
- Info contact green point (web, phone)



AEGYPTI MANAGEMENT PLAN

Public information

- immediate public information using local media requiring active participation (TV, radio, newspapers,...)
- continue the information campaign explaining the results achieved
- Stress the need of community involvement to face the sanitary risk



AEGYPTI MANAGEMENT PLAN

Local and Regional authorities involvement

- Stimulate the organization of a crisis unit including all entities such as Public Health Regional and Local, Epidemiology Services, Municipalities, port and airport authorities, expert entomologists;
- The crisis unit must define responsibilities, money allocation, coordination of the activities, adapt the strategy to the observed evidences.



AEGYPTI MANAGEMENT PLAN

Quality control methods

- the crisis unit must commission an independent body the quality control activities to check the efficacy of vector control
- 10% of the total road drains in the treated area should be sampled following each treatment
- sampling will be conducted with a water net and number of larvae/pupae recorded and kept for species determination
- the PCO must regularly report on the treated roads
- Weekly reporting on the field findings to the crisis unit



ANNEX LIST TO THE AEGYPTI MANAGEMENT PLAN

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- SOP for species discrimination
- Mayor ordinance scheme
- Protocol for emergence vector control operations in case of Den & Chik cases detection
- Quality control procedure for larval treatments efficacy in public & private areas
- Protocol for bioassays on insecticide sensibility



Dengue outbreak – Egypt 2015

- WHO Disease Outbreak News 12 November 2015
- On 27 October 2015, the National IHR Focal Point of Egypt notified WHO of an outbreak of Dengue fever in a village in the **Dayrout District** of Assiut Governorate.
- Between 1 and 31 October 2015, a total of **253 cases** were admitted to the Dayrout Fever Hospital due to acute febrile illness. ...
- A total of 28 out of the 118 serum samples were positive for **Dengue virus type I** by ELISA and PCR at the Central Public Health Laboratories. For further confirmation, samples were sent to the Naval Medical Research Unit Three (NAMRU-3) laboratory and tested positive for Dengue virus type I by ELISA and PCR.
- A national team of experts visited the affected village to carry out the necessary investigations.
- Entomological surveillance revealed the presence of **Aedes aegypti**.
- Vector control measures were immediately set up.



Dayrout district

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OTHERS IMS MANAGEMENT PLAN

(*Ae. atropalpus*, *Ae. japonicus*, *Ae. koreicus*, *Ae. triseriatus* and *Ae. cretinus*)

- Extended surveillance to define the colonized area
- Application of control measures
- Public information
- Local and Regional authorities involvement
- Quality control methods





Be ready!!!

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