



ISTANBUL  
METROPOLITAN  
MUNICIPALITY

DEPARTMENT OF HEALTH

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MİLYON  
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# VECTOR CONTROL: PROTECTING PUBLIC HEALTH IN İSTANBUL

24/7 – 365 DAYS  
OUR VISION TO FIGHT VECTORS



To control the vectors that negatively affect public health in Istanbul.



In this context, we attach more importance to cultural, physical and biological struggles rather than chemical struggles that may harm the environment and human health.

# DATA FIGHTING VECTORS FOR 2022 IN ISTANBUL

• **200.334 Mosquito Breeding Sites**

• **411.833 Biocidal product applications**

• **Service Over 7 Units**

• **182 Teams 182 Vehicles**



• Istanbul, which connects two continents and served as the capital of three ancient empires, with a total length of 647 kilometers of coastline; It is a Megapolis with 18 Million Population, 39 Districts and 9 Islands.

• **Area 5,343 km<sup>2</sup>**

• **611 Staff 60 Unit Managers (Biologist, Chemist, Agricultural Eng., Veterinary Technician...)551 workers**

## SCOPE OF FIGHTING VECTORS IN ISTANBUL IN 2022

### **IMM Health Department Health and Hygiene Branch Directorate**

It carries out its work on combating vectors across Istanbul. In this context, threatening public health; mosquito, housefly, mouse/rat, cockroach, tick and flea control is carried out.



## DATA FIGHTING MOSQUITOS IN 2022 IN ISTANBUL



At **106.571** addresses in 2022 Inspection was made every week in **200.334** mosquito breeding sources and biocidal product was applied at the breeding sites.



For mosquito larvae control; These sources were checked **7.003.050** times in total, including December 2021 - 2022, and biocidal products were applied **838.204** times.

## YEAR 2022 IN ISTANBUL FLY AND MOUSE/RAT FIGHTING DATA



In 2021-2022, housefly control was carried out in an area of **4.189.835** square meters, including December.



For rodent control including December 2021 - 2022, a total of **1.174.617** manhole covers were opened and rodenticide application was made.



# OUR METHODS TO COMBAT VECTORS

## CULTURAL APPLICATIONS



## PHYSICAL APPLICATIONS



## BIOLOGICAL APPLICATIONS



## CHEMICAL APPLICATIONS



**We carry out advanced scientific fighting methods in an integrated manner.**

# OUR METHODS TO COMBAT VECTORS

## Cultural Applications

Based on the fact that 86% of mosquito breeding resources are created by humans, information is provided to the public through different communication tools in order to eliminate these areas by human hands. Social media, brochures, videos and animations are provided on the IMM Health Department website [saglik.ibb.istanbul](http://saglik.ibb.istanbul) to raise awareness of the public on this issue. As a result of cultural struggle studies and simple measures to be taken by our people, it is foreseen to prevent reproductive resources.



# OUR METHODS TO COMBAT VECTORS

## Physical Applications

We carry out studies in all uncontrolled focal points where vectors can reproduce and spread, such as the elimination of puddles, the improvement of streams and swamps, the prevention of stagnant water, with physical struggle, which is an important part of the struggle with vectors. While implementing these works, we act in cooperation with the units within our municipality and district municipalities. Since physical and cultural struggle works are carried out without the use of any drugs, they constitute our primary struggle steps.



# OUR METHODS TO COMBAT VECTORS



## Biological Control

Is one of the least harmful methods of control for the environment. In case of detection of mosquito reproduction in the breeding sites detected by our teams or reported to our teams by the citizens through 153 Solution Centers, efforts to combat biologically, using biocidal products are continued. Biological control is used in order not to harm other living organisms other than our target.

# OUR METHODS TO COMBAT VECTORS



## Chemical Control

In order to protect public health and to prevent epidemics, chemical control methods are used even if we do not want to choose them for the control of vectors in mandatory situations. In chemical control, drugs approved by the World Health Organization and the Ministry of Health are used. In order not to disturb the nature, we care not to use this method of struggle, except in compulsory situations.



While the demands for combating vectors received from 153 Solution Centers were 82,773 in 2019, it decreased to 70,546 in 2020. Compared to 2019, the number of requests decreased by 15%.

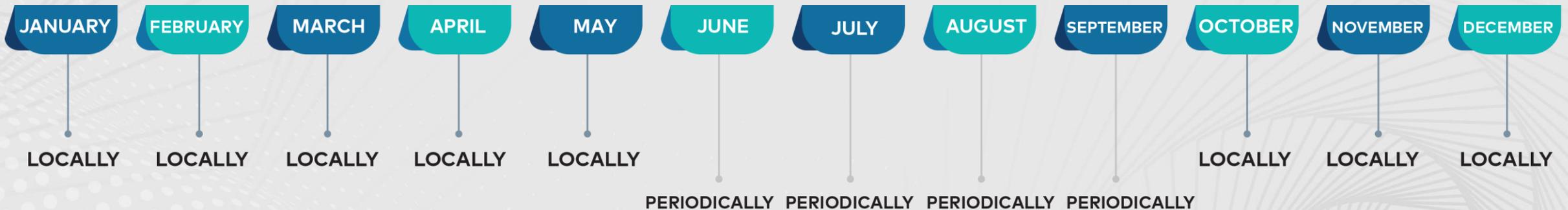
In 2021, 64,968 requests were received. As a result of the studies carried out, an 8% decrease was observed in the demands for intervention compared to 2020.

In 2022, including December, 54,840 requests were received.

# MOSQUITO CONTROL APPLICATION PERIODS

Our fight against larvae is continued periodically throughout the year and reproduction is detected in the sources. Biocidal product is applied according to the need.

## ADULT CONTROL



# IMM *Aedes albopictus* (asian tiger mosquito) WE CREATED THE REPORT TO FORM THE BASIS OF THE ACTION PLAN



As Istanbul Metropolitan Municipality, we established the “Scientific Board for Vector Combat” with scientists from Hacettepe, Istanbul, Cerrahpaşa, Koç, İSTÜN and California State Universities by implementing a pioneering practice for the first time in local governments. We hold regular meetings with our Scientific Board and plan next months efforts every month.



## WE IMPLEMENTED IMM *AEDES ALBOPICTUS* ACTION PLAN

An Istanbul-adapted version of the "Guidelines for the surveillance of invasive mosquitoes in Europe" published by our Scientific Committee and the European Center for Disease Prevention and Control (ECDC) was written, and based on this report, a 559-day action plan for Asian Tiger Mosquitoes was prepared, determined and implemented. As the first step of the implementation, we held the Asian Tiger Mosquito Action Plan Workshop with 39 district municipalities.



# IMM ACTION PLAN



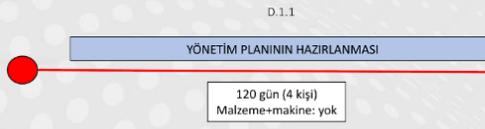
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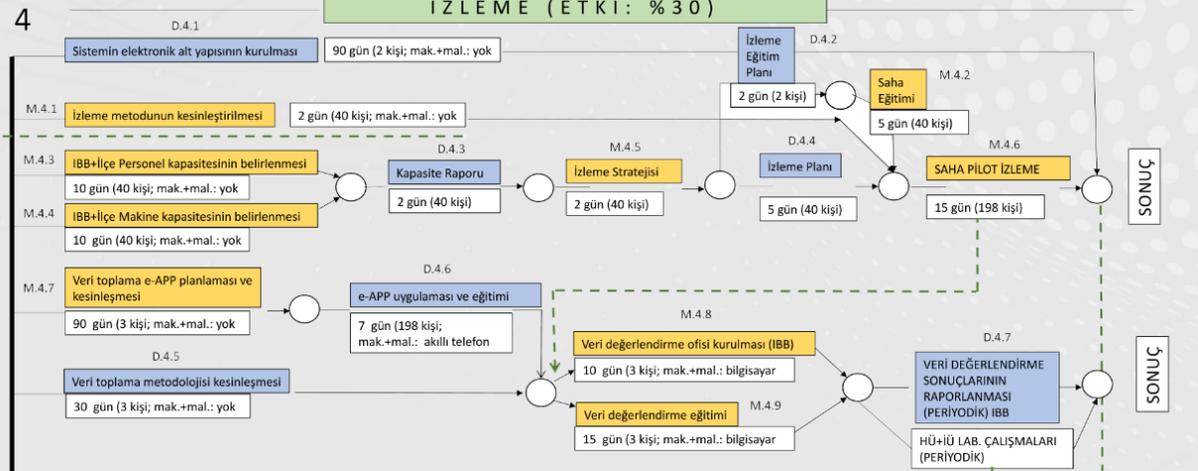
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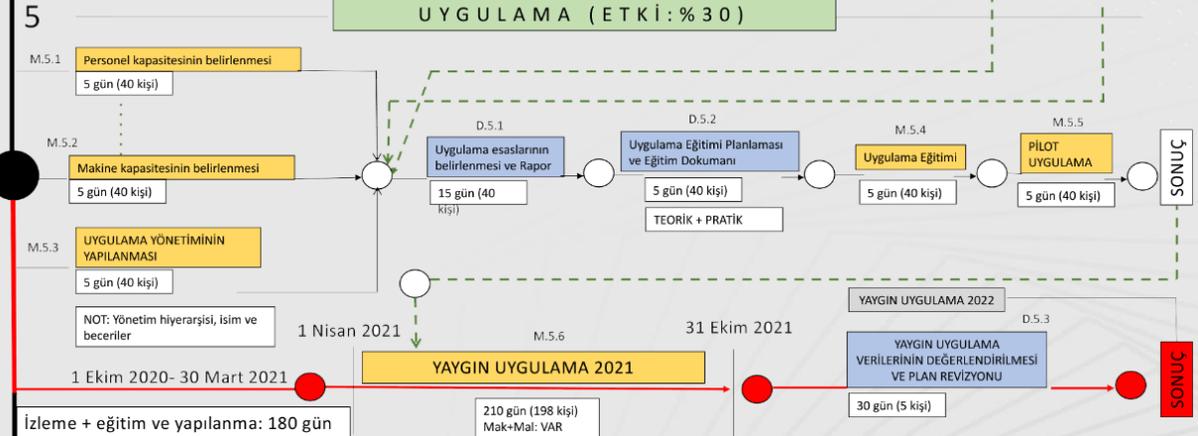
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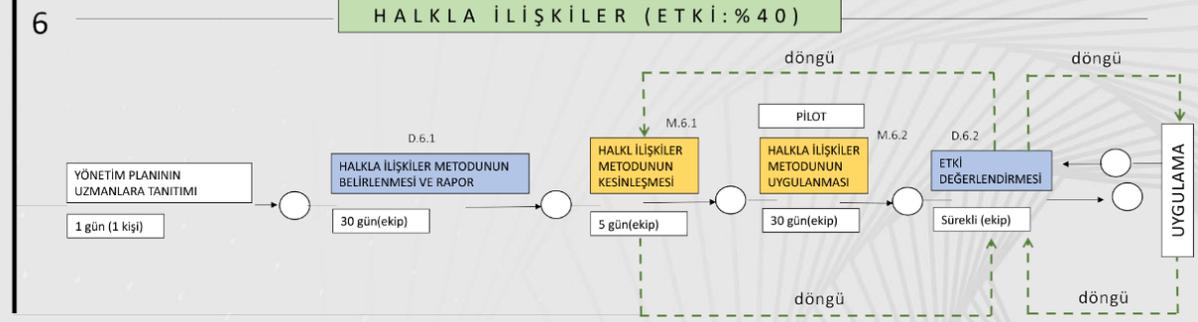
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En uzun yol: 559 gün  
Bitti: 120+15=135 gün  
Yol uzunluğu: 424 gün

Gerekli Süre:  
İzleme+Eğitim+Yapılanma+Uygulama+Etki değerlendirme: 420 gün

Maksimum kısaltılabilme olasılığı: 28 gün (% 6.6)  
Kritik yol uzunluğu: 392 gün

Yol uzunluğu : 424 gün  
Kritik yol uzunluğu: 392 gün

İŞ İSTASYONU

EN UZUN YOL

Deliverables

Milestones

V.1:9/6/20



# WITH ASIAN TIGER MOSQUITO CONTROL HEADLINES

## We Hosted the International Congress

In recent years, we have started an intense study against the Asian tiger mosquito, which is detected in Istanbul, the Aegean Region, the Eastern Black Sea coast, Antalya, Eskisehir and Bursa, which poses a serious threat by spreading rapidly. In this context, in September 2021 with the participation of many local and foreign scientists, IMM hosted the 3rd AIM-COST Annual Conference in Istanbul.



## Ovitrap

We started the installation of our 2,000 ovitrap reserves in 39 districts of Istanbul by evaluating the needs in the field. We aim to prevent the increase of mosquito density by performing physical and biological control in areas where populations are detected.

## WITH ASIAN TIGER MOSQUITO CONTROL HEADLINES

### **We Benefit from Light Traps with CO2 (EVS - Encephalitis-Virus-Surveillance)**

We have installed 60 EVS traps in pilot districts for adult mosquitoes. The data obtained are evaluated in our Species Identification Laboratory and the most effective control method is determined according to the population and species.

### **We Opened an R&D and Species Identification Laboratory**

We opened a species determination laboratory within the IMM to carry out species determination and similar studies still carried out within Universities. Within the scope of AIMSurv, the data coming from the field are meticulously evaluated and the most effective method is put into practice in the laboratory, where we put the Turkish leg into practice with the members of the Fight Against Vectors Scientific Committee.

### **We Implemented the Geographic Information System Based Automation Program to Combat Vectors**

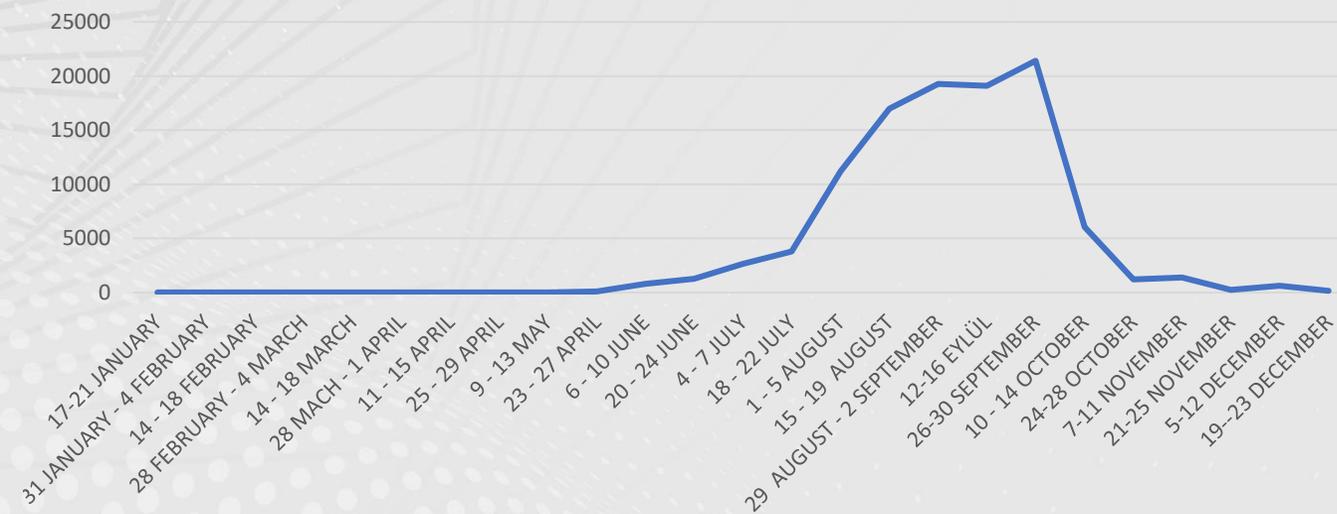
An automation program based on geographic information systems is used by all teams across Istanbul at the point of combating vectors.



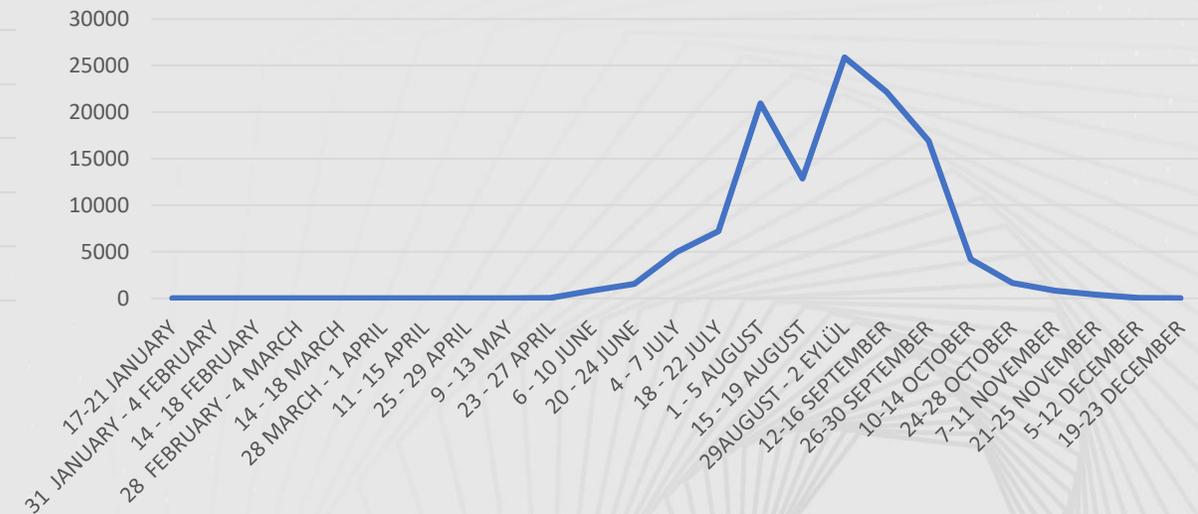
# WITH ASIAN TIGER MOSQUITO FIGHT HEADS

The data obtained from the ovitraps in 39 districts of Istanbul are evaluated district by district in our species determination laboratory and studies are planned accordingly. Below are the values for the year 2022 regarding the data.

### Anatolian Side Population Dynamics



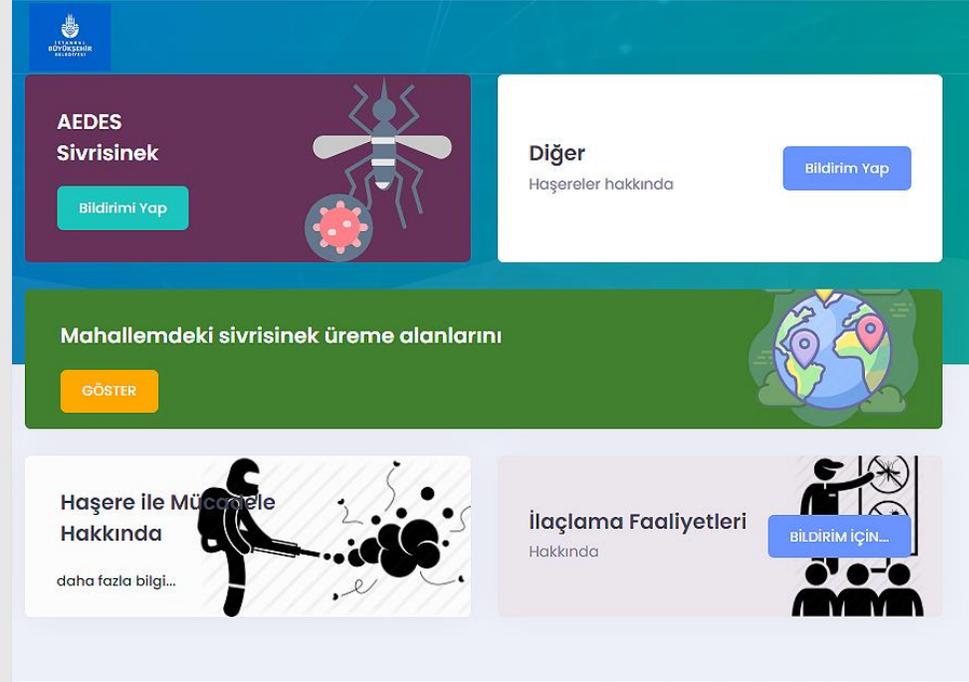
### European Side Population Dynamics



# ASIAN TIGER MOSQUITO FIGHTING HEADS

## Mosquito Notification System

A mobile application that will be integrated into the Vector Fighting System has reached its final stage, and pilot applications have started. In this way, we will soon include our people in our efforts to combat vectors via the application. Our notification system is implemented over the web, and complaints from our citizens are followed quickly and effectively through GIS-based automation.



[vbs.istanbulum.app/aedes](https://vbs.istanbulum.app/aedes)



**Our in-service training we do it constantly.**

## OUR FIGHT IS REWARDED

### **Prof. Dr. Nusret Fişek Public Health Service Award**

The Istanbul Metropolitan Municipality Health Department was awarded a certificate by the Turkish Medical Association Istanbul Medical Chamber in 2022, for its work against vectors under the guidance of science, the use of technology, and world-wide cooperation. Prof. Dr. Nusret Fişek Public Health Service Award.



# EVALUATION OF FIGHTING VECTORS SPECIFIC TO AEDES

**1** Since *Aedes albopictus* is an invasive species, it has begun to be widely seen in our country as well as in Europe.

**4** The scientific-based studies we started in IMM on the fight against *Aedes albopictus* should be made a national policy.

**2** At this point, scientists and local governments have important duties. We consider it important to coordinate, coordinate and uninterrupted struggle together. The support of common sense and science is critical in the effort to keep this difficult vector under control.

**3** We believe that we can contribute to the science-based and sustainable struggle that will be a model for other local governments by drawing attention to the wrong practices that can be done in the field with the support of our Scientific Board for Vector Control.



# THANKS

M. Hakan YILMAZTÜRK MD, Phd.

