

CONTROLLING OFFICER'S REPLY

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(Question Serial No. 0102)

Head: (49) Food and Environmental Hygiene Department

Subhead (No. & title): (-) Not specified

Programme: (2) Environmental Hygiene and Related Services

Controlling Officer: Director of Food and Environmental Hygiene (Ms Irene YOUNG)

Director of Bureau: Secretary for Environment and Ecology

Question:

As regards mosquito control, please advise this Committee of:

1. the number of mosquito complaints received in each of the past 3 years, with a breakdown by District Council district;
2. the technological applications employed by the Food and Environmental Hygiene Department for enhancing mosquito control in the past 3 years, with a breakdown of expenditure by application;
3. the number and monthly usage of the existing large ultra-low volume foggers, with a breakdown by District Council district; whether an evaluation has been made on the anti-mosquito effectiveness of the equipment; and whether further procurement will be made by the Department if the equipment is effective;
4. whether targeted mosquito prevention and control work is conducted in areas with serious mosquito infestation. If yes, the details; if no, the reason(s); and
5. whether smart systems will be used for managing anti-mosquito work, i.e. making use of big data to gauge the positions of each spot and each bush area, the weather and the mosquito breeding situation, so as to assess the extent of anti-mosquito work to be carried out. If yes, the details; if no, the reason(s).

Asked by: Hon YANG Wing-kit (LegCo internal reference no.: 21)

Reply:

1. The number of mosquito complaints received by the Food and Environmental Hygiene Department (FEHD) in each of the past 3 years (2020 to 2022), with a breakdown by District Council district, is provided at **Annex 1**.

2. The information on the technological applications employed by FEHD for enhancing mosquito prevention and control in the past 3 years (2020 to 2022), with a breakdown of expenditure by application, is provided at **Annex 2**.
3. FEHD adopts an integrated pest management strategy for mosquito prevention and control. With a focus on prevention and control of mosquitoes at their immature stages, the strategy includes elimination of mosquito breeding places and application of appropriate larvicides to kill larvae at breeding places where immediate elimination is not feasible. To contain adult mosquitoes, fogging is carried out. In 2020, FEHD procured 18 large ultra-low volume (ULV) foggers for use in all districts. They are effective in conducting fogging treatments in scrubby areas to kill adult mosquitoes. FEHD will continue to use large ULV foggers in suitable districts.

The number of fogging operations conducted by FEHD to kill adult mosquitoes in the past 3 years, with a breakdown by District Council district, is provided at **Annex 3**.

4. The crux of mosquito prevention and control work is to prevent and remove accumulation of water for curbing mosquito breeding. Each year, FEHD conducts the territory-wide Anti-mosquito Campaign in 3 phases, usually around February to October. A territory-wide thematic mosquito prevention and control special operation is also launched between the phases, which focuses on enhanced mosquito control work at strategic areas with more serious mosquito infestation, such as construction sites.

To further enhance the effectiveness of mosquito control efforts, FEHD also conducts All-out Anti-mosquito Operations each year in collaboration with the relevant bureaux/departments from around March and April until the end of the rainy season. The operations focus on eliminating potential breeding places in venues under the management of the relevant bureaux/departments, especially through repairing structural defects such as defective floor and surface channels. Regular fogging operations are also carried out to suppress the density of adult mosquitoes in the venues under their respective management.

5. Since 2005, FEHD has uploaded the data collected through ovitraps/ gravidtraps for *Aedes albopictus* to the Geospatial Information Hub of the Lands Department. With the help of the system, the latest detailed findings of ovitrap/ gravidtrap surveys can be released. Moreover, data analyses can be performed to identify the hotspots of mosquito infestation and conduct more targeted anti-mosquito work. Starting from 2020, FEHD also provides relevant departments/bureaux and organisations with information on hotspots of mosquito infestation, including locations with continuous detection of mosquito activities or high adult mosquito density, so that early prevention and control work can be carried out to achieve better results.

Number of mosquito complaints received by FEHD

District	2020	2021	2022
Central and Western	312	311	231
Wan Chai	239	282	233
Eastern	231	311	236
Southern	127	198	103
Islands	359	325	269
Yau Tsim Mong	279	330	235
Sham Shui Po	340	175	153
Kowloon City	269	233	108
Wong Tai Sin	88	89	64
Kwun Tong	142	150	132
Kwai Tsing	194	293	412
Tsuen Wan	158	251	191
Tuen Mun	314	367	263
Yuen Long	686	993	867
North	311	369	248
Tai Po	478	353	396
Sha Tin	371	331	288
Sai Kung	527	495	391
Whole territory	5 425	5 856	4 820

Technological applications for mosquito control and the expenditures incurred

Technological application for mosquito control	Effectiveness	Expenditure		
		2020	2021	2022
New mosquito trapping device	FEHD tested the new mosquito trapping device in Tuen Mun and Tsim Sha Tsui in 2019. Test results showed that the new mosquito trapping device was effective in minimising the nuisance caused by <i>Aedes</i> mosquitoes. FEHD has introduced the use of the device in its regular anti-mosquito work and recommended the technology to other departments.	Around \$610,000	Around \$640,000	Around \$640,000
Use of gravidtraps to monitor <i>Aedes albopictus</i>	The gravidtrap was tested in the laboratory and 10 districts from 2019 to 2020. Test results showed that the gravidtrap was effective in attracting and capturing adult <i>Aedes albopictus</i> mosquitoes, reducing the time required for surveillance, as well as providing a quantitative density index. Starting from April 2020, the gravidtrap has completely replaced the ovitrap previously used for monitoring <i>Aedes albopictus</i> .	Around \$40,000	N.A. ^{Note}	Around \$250,000
Large ULV fogger	The large ULV fogger was tested in Yuen Long District between April and July 2020. Test results showed that the large ULV fogger was suitable for conducting ULV space treatment over a large area, and its spray range was longer than the knapsack sprayer being used. The fogger was more effective in killing adult mosquitoes in the fogging treatments conducted in scrubby areas. FEHD has	Around \$1.4 million	N.A. ^{Note}	N.A. ^{Note}

Technological application for mosquito control	Effectiveness	Expenditure		
		2020	2021	2022
	introduced the use of large ULV foggers in its regular anti-mosquito work in the same year.			
Robotics fogger	Field trials were conducted in Yuen Long, Sha Tin and Sai Kung Districts between April and November 2021. Test results showed that the robotics fogger, which could be driven to designated places to spray pesticides when installed on vehicles, was safe, effective and user-friendly. The range of the sprayer was wider than that of the knapsack sprayer being used. The robotics fogger could facilitate fogging operations in large areas and was particularly useful in killing adult mosquitoes in places that were difficult for workers to reach. FEHD has introduced the use of robotics foggers in its regular anti-mosquito work since 2022. The technology has been recommended to other departments, and on-site demonstrations on the operation of robotics foggers have also been arranged.	N.A. ^{Note}	N.A. ^{Note}	Around \$1.19 million

Note: FEHD did not procure the equipment in the year.

Number of fogging operations conducted by FEHD to kill adult mosquitoes

District	2020	2021	2022
Central and Western	1 686	1 540	1 856
Wan Chai	1 299	1 639	1 537
Eastern	8 226	7 111	8 370
Southern	1 577	1 630	2 026
Islands	1 262	1 450	1 448
Yau Tsim Mong	135	105	130
Sham Shui Po	2 391	2 415	2 729
Kowloon City	2 847	3 561	3 243
Wong Tai Sin	1 226	1 312	1 299
Kwun Tong	1 217	1 151	1 040
Kwai Tsing	875	837	778
Tsuen Wan	1 425	1 682	1 726
Tuen Mun	2 990	2 983	2 868
Yuen Long	519	1 987	2 099
North	319	229	426
Tai Po	777	727	700
Sha Tin	669	1 662	1 616
Sai Kung	5 274	7 853	6 870
Whole territory	34 714	39 874	40 761

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