

CONTROLLING OFFICER'S REPLY**FHB(FE)067****(Question Serial No. 1802)**Head: (49) Food and Environmental Hygiene DepartmentSubhead (No. & title): (-) Not specifiedProgramme: (1) Food Safety and Public HealthControlling Officer: Director of Food and Environmental Hygiene (Miss Vivian LAU)Director of Bureau: Secretary for Food and HealthQuestion:

Under the Programme, it is mentioned that the Department conducted a total of 10 379 pest control surveys in 2019.

- I. Among the above surveys, please give details of those on mosquitoes, biting midges and rodents (including the number of surveys conducted, the areas surveyed and the coverage of the surveys) in each of the past 3 years.
- II. 14 new posts were created in the Pest Control Advisory Section of the Department last year. What were the accomplishments of the Advisory Section in the past year? Is there any plan to create more posts in the coming year?

Asked by: Hon CHAN Hoi-yan (LegCo internal reference no.: 18)Reply:

- I. The information sought is provided as follows:

Types of surveys	Number of surveys conducted		
	2017	2018	2019
Mosquito	5 284	6 077	6 585
Rodent	1 969	2 033	1 958
Biting midge	128	120	0
Other pests	1 863	1 886	1 836
Total	9 244	10 116	10 379

Mosquito surveys include the following:

1. Dengue vector surveillance is conducted by setting up ovitraps to understand the distribution of Aedes mosquitoes in all districts. In 2017, the number of survey locations was 52 and the surveys were conducted a week per month. Since July

2018, the number of survey locations has been increased to 57 and the survey frequency has been increased to 2 weeks per month. In addition, the frequency of surveys in all sea and land ports has also been increased from bi-weekly to weekly since July 2018. This is in line with the surveillance work at the Hong Kong International Airport.

2. Japanese encephalitis (JE) vector surveillance is done through setting up light traps every month to collect adult mosquitoes (*Culex tritaeniorhynchus*) for testing the presence of JE virus. The programme covers 7 districts, including Southern, Sham Shui Po, Sai Kung, North, Kwai Tsing, Tuen Mun and Yuen Long. Since 2018, Eastern District has also been included.
3. Malaria vector surveillance is conducted by carrying out rotational larval surveys at all fresh water streams in the territory to understand the distribution of local malaria vectors.
4. Ad hoc surveys are carried out in response to mosquito-borne diseases including dengue fever, JE, Zika virus infection, Chikungunya, etc. The surveys cover the surrounding areas of local movements of patients of relevant diseases.

Rodent surveillance includes the following:

1. Rodent infestation surveys are conducted half-yearly for detecting the presence of rodents in 41 selected locations covering all districts across the territory.
2. Rat-flea surveys are conducted in selected biotope every year to assess the risk of plague transmission. In 2017 and 2018, the surveys were conducted respectively in the industrial areas and in street market areas. In 2019, the survey was conducted in peripheral areas of housing estates.
3. Ad hoc surveys are conducted in response to rodent-borne diseases including Hantavirus infection, scrub typhus, urban typhus, spotted fever, leptospirosis, rat hepatitis E virus infection, etc. The surveys cover the surrounding areas of local movements of patients of relevant diseases.

Biting midges are not vectors for mosquito-borne diseases such as dengue fever, JE and Zika virus infection. The biting midges found locally are not major vectors of any vector-borne diseases. Therefore, the Department does not conduct regular survey on biting midges. In light of the biting midges problem in Hong Kong at that time, the Department conducted a special territory-wide survey from July 2017 to July 2018 to study the seasonal variation and distribution of biting midges as well as to re-assess the presence of any disease vector species in Hong Kong. The Department will continue to keep in view the biting midges problem and conduct further surveys when necessary to update the strategy in the prevention of biting midges.

- II. The accomplishments of the Pest Control Advisory Section of the Department in 2019 were as follows:

On mosquito surveys, as mentioned above, the Department continued to conduct dengue vector surveillance to understand the distribution of *Aedes* mosquitoes. Besides, the Department worked on a new design for ovitrap with a sticky trap mounted inside the trap for collecting adult mosquitoes directly. Field trials were conducted in Wong Tai Sin, Cheung Chau and Yau Tong from June to November 2019 and the new design proved effective. The Department will place around 5 000 new ovitraps in the territory in 2020. Apart from the existing monthly ovitrap index for *Aedes albopictus*, the Department will also release the new adult mosquito density index for *Aedes albopictus* to better reflect the effectiveness of mosquito control work and facilitate government departments to formulate more targeted anti-mosquito measures.

In 2019, the Department continued to carry out JE vector surveillance in 8 districts in Hong Kong. During the surveillance period, no JE-infected vector mosquitoes were detected. The malaria vector surveillance, which was conducted by carrying out rotational larval surveys at all fresh water streams in the territory to monitor the distribution of local malaria vectors, also found no breeding of vector mosquitoes.

To strengthen control of mosquito-borne diseases and mosquito infestation, the Department tested a new mosquito trapping device in 2019. It involved the carrying of growth regulators by female mosquitoes to the water bodies where they laid eggs to prevent the larvae in those water bodies from developing into adult mosquitoes. The trial use of the new mosquito trapping device has achieved noticeable results, leading to a substantial reduction in the adult mosquito population. The Department has recommended various government departments to use this mosquito trapping device more widely in suitable locations. Before March 2020, around 2 700 new mosquito traps have been deployed by various departments in areas under their purview with a view to preventing mosquito breeding before the onset of rainy season.

On rodent surveys, the Department continued to conduct rodent infestation surveys at half-yearly interval in 41 locations in various districts in the territory and the number of survey locations will be increased to 50 in 2020. In addition, the Department conducted a test on a synthetic and non-poisonous bait having different flavours of food in the rodent infestation surveys in 2019. The bait is compared to sweet potatoes currently used in terms of their attractiveness to rodents, with a view to assessing whether the sensitivity of rodent infestation surveys can be enhanced by placing baits that are more attractive. The Department has also proactively introduced new technologies to monitor rodent infestation. Since April 2019, the Department has been putting on trial night-vision and thermal imaging cameras with artificial intelligence analytical function and collecting data of rodent activities to quantify and assess the effectiveness of anti-rodent operations.

The Department invited an expert in rodents, referred by the World Health Organization, to visit Hong Kong in November 2019. The expert provided advice on rodent control in the territory, including ways to improve the effectiveness of baits and traps. The Department is now following up on the expert's advice and continuously promoting rodent prevention and control in the community, as well as exploring the application of various technologies on baits and traps.

The Department does not plan to create new posts in the Pest Control Advisory Section in 2020-21. Depending on the latest progress of pest control work, manpower will be provided through internal redeployment of resources to cope with the work demand.

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