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Panel on Food Safety and Environmental Hygiene

**Subcommittee on Issues Relating to the Improvement of
Environmental Hygiene and Cityscape**

**Background brief prepared by the Legislative Council Secretariat
for the meeting on 27 April 2021**

**Administration's work on control of
mosquito and biting midge infestation**

Purpose

This paper provides background information on the Administration's work regarding the control of mosquito and biting midge infestation, and summarizes major views and concerns of members of the Panel on Food Safety and Environmental Hygiene ("the Panel") on the subject.

Background

2. According to the Administration, it has all along accorded high priority to pest control work. In July 2018, the Anti-mosquito Steering Committee was re-organized and upgraded as the Pest Control Steering Committee ("PCSC"). Chaired by the Under Secretary for Food and Health, PCSC is responsible for formulating policies on pest control, promoting inter-departmental coordination and regularly reviewing the effectiveness of the pest control work carried out by various bureaux and departments. PCSC has set three targets for pest control work, namely enhancement of prevention, coordination and surveillance.

Mosquito surveillance and control

3. According to the information available on the website of the Food and Environmental Hygiene Department ("FEHD"), to study the distribution of

Aedes albopictus, gravidtraps are set in selected areas throughout the territory for monitoring the breeding of these mosquitoes. The percentage of the gravidtraps found positive with breeding of these mosquitoes gives the Gravidtrap Index for *Aedes albopictus*. The value of Gravidtrap Index for *Aedes albopictus* indicates the extensiveness of the breeding of the vectors. Gravidtraps are set in the surveyed areas for two weeks and collected on a weekly basis. Data of the two weeks' surveillance is combined to obtain the Area Gravidtrap Index and Area Density Index. The Gravidtrap Index and Density Index for *Aedes albopictus* of each surveyed area are released after the two weeks' surveillance. Once the Gravidtrap Indices and Density Indices of various surveyed areas are available, FEHD's District Environmental Hygiene Offices and other relevant government departments will be notified of the figures so that they can promptly carry out targeted mosquito prevention and control work.

4. According to the Administration, early prevention is the most effective approach for mosquito control. It will commence and strengthen targeted operations to prevent mosquito breeding before the rainy season; and enhance collaboration with the local communities to avoid mosquito proliferation. Once the rainy season arrives, all departments will be mobilized to conduct regular fogging operations to eliminate adult mosquitoes. Under PCSC's coordination, relevant departments have been allocated additional resources for enhancing their pest control work. They have also included standard pest control terms in new cleansing service contracts in order to closely monitor the performance of their pest control service contractors and ensure that the contractors will provide appropriate and effective pest control services. At the district level, an inter-departmental communication platform has been set up by the frontline staff of FEHD and other departments for monthly coordination of specific mosquito control work and joint site inspections, provision of technical support and review of the effectiveness of the Administration's mosquito control work. FEHD also provides professional training for other government departments.

Prevention and control of biting midges

5. As advised by the Administration, activities of biting midges are seasonal with peak season in hot and humid summer, i.e. between May and November. The most effective measures for preventing proliferation of biting midges are environmental control, reduction of potential breeding places and enhancing public awareness of the need to adopt self-protection measures.

6. Before the start of the rainy season, the Administration will strengthen coordination of the preventive work carried out by various government departments in premises under their purview. As biting midges are frequently found in parks, more likely to cause nuisances to the public, FEHD has

formulated technical guidelines on the prevention and control of biting midges for relevant departments' reference, with a view to tackling the issue at source by reducing potential breeding places of biting midges. Suggested measures include pruning plants regularly, removing fallen/dried leaves on soil surface and covering soil surface with gravels, as well as applying larvicide if necessary. The anti-mosquito and environmental improvement measures taken by government departments can also help reduce potential breeding places. FEHD also organizes training and talks on the control of biting midges for the relevant departments, including the Leisure and Cultural Services Department ("LCSD") and the Housing Department ("HD"), to enhance the effectiveness of their control work.

Members' concerns

7. The effectiveness of the Administration's work in the control and prevention of mosquito and biting midge infestation has all along been a concern to Panel members. Their major views and concerns expressed at the meeting on 21 April 2020 are summarized below.

Mosquito surveillance

8. Enquiries were raised about the distribution and locations of the areas where the gravidtraps were placed, and whether there were guidelines on selecting locations for placing gravidtraps. Some members held the view that gravidtraps should be placed in every public rental housing estate, as statistics so collected could better reflect the situation of mosquito infestation in the community.

9. The Administration advised that gravidtraps were placed at selected locations according to the World Health Organization's recommendations for the dengue vector surveillance programme. To enhance the surveillance of dengue vector, FEHD had, since July 2018, increased the number of surveyed areas under the mosquito surveillance programme to 57. The exact locations of the surveyed areas were listed on FEHD's website. Approximately 3 200 gravidtraps were placed at the 57 surveyed areas and around 1 800 gravidtraps at 33 ports. To ensure representativeness of the surveillance results, gravidtraps were mainly set up in areas where local dengue fever cases had been reported, as well as densely populated housing estates, schools, and so on. In general, gravidtraps were placed at a distance of about 100 metres from each other so that the same mosquito would not oviposit in two different gravidtraps. As at April 2020, about one-sixth of the residential areas throughout the territory were covered under the dengue vector surveillance programme. In deciding the coverage of the mosquito surveillance programme and the locations for placing new gravidtraps, FEHD would, take into account new

developments (e.g. the establishment of new housing estates) and emerging public health needs.

Mosquito prevention and control measures

10. There were views that the Administration failed to tackle the pest problem in the community owing to a lack of coordination among various departments in their pest control efforts. The Administration was urged to enhance the inter-departmental coordination in implementing pest control measures. In particular, FEHD should take a leading role in coordinating the pest control work of various departments.

11. The Administration advised that under the coordination of PCSC, additional resources had been allocated to a number of departments for carrying out enhanced pest control work in areas under their respective purview. Relevant departments had also made concerted efforts in conducting routine pest control operations in the districts and shared among themselves techniques and experience in pest control work. For instance, upon completion of internal testing, FEHD had provided some new mosquito traps to the relevant departments and organizations (including LCSD, HD, Department of Health and Hospital Authority) for trial use in Ma On Shan and Sheung Shui since September 2019. The new mosquito traps had been effective in eliminating mosquitoes, resulting in a substantial reduction in the number of adult mosquitoes.

12. In response to members' follow-up questions on the effectiveness of the new mosquito traps, the Administration advised that the new mosquito traps could attract female mosquitoes to lay eggs and allowed the dissemination of the insect growth regulator with which they came into contact to other water bodies where they might land. The regulator could prevent the mosquito larvae in the water bodies from developing into adult mosquitoes. FEHD had conducted internal testing on the new mosquito traps at various places including villages in the rural areas. Test results showed that activities of adult mosquitoes had decreased substantially. According to the feedback from local residents, the number and frequency that they got bitten by mosquitoes had also reduced significantly after the installation of the new mosquito traps. Since the new mosquito traps had been effective in eliminating mosquitoes, around 2 700 new traps would be installed for prevention of mosquito breeding by various departments within the areas/venues under their management. Hillsides and shrubby areas were suitable places for placing these traps.

13. Concern was raised as to whether targeted operations would be conducted to control mosquito breeding in construction sites, as they would easily become potential breeding grounds. According to the Administration,

since 2017, FEHD had set up four pest control inspection teams to step up inspections on construction sites and enforcement actions against persons in charge of premises with unattended mosquito breeding places. In 2019, FEHD initiated 173 prosecutions for mosquito breeding, and 162 of them involved construction sites. On the educational front, FEHD had published guidelines on mosquito prevention for the reference of contractors and workers working in construction sites.

Monitoring the infestation of and implementing control measures against biting midges

14. Expressing concern about the infestation of biting midges in Hong Kong, members called on the Administration to introduce a specific index for ongoing and long-term surveillance of biting midges. They hoped that the Administration would regularly announce the surveillance results of biting midges in various districts, so as to enhance public awareness about the problem and to alert relevant departments/members of the public to take preventive measures in response to index changes.

15. According to the Administration, biting midges found in Hong Kong were not vectors of mosquito-borne diseases. Given that targeted environmental measures could reduce breeding of biting midges and effectively contain their infestation, the Administration considered that it might not be necessary to introduce a specific indicator reflecting the extensiveness of biting midges throughout the territory for the time being.

16. In response to members' enquiries about the Administration's control strategy against biting midges, the Administration advised that FEHD had conducted a territory-wide survey on biting midges between July 2017 and July 2018. No biting midges were found to be of species that were capable of transmitting diseases to humans. With reference to the habitual behaviours as well as the seasonal and localized activity patterns of biting midges as revealed in the survey, FEHD had formulated technical guidelines on the prevention and control of biting midges for relevant departments' reference. With the adoption of various measures for reducing potential breeding places of biting midges as mentioned in paragraphs 5 and 6 above, complaint figures relating to biting midges received by relevant departments had significantly dropped over the past few years. This showed that the nuisances caused by biting midges in public places had been alleviated. The Administration further advised that to enhance the general public's knowledge on blood sucking midges and raise their awareness of adopting self-protection measures (e.g. wearing light-coloured, long-sleeved clothes and trousers and applying insect repellent when having outdoor activities), FEHD would step up its health education through the use of posters and leaflets.

Recent development

17. The Administration will brief the Subcommittee on its work on control of mosquito and biting midge infestation at the meeting on 27 April 2021.

Relevant papers

18. A list of the relevant papers on the Legislative Council website is in the **Appendix**.

Council Business Division 2
Legislative Council Secretariat
21 April 2021

**Relevant papers on the Administration's work on
control of mosquito and biting midge infestation**

Committee	Date of meeting	Paper
Panel on Food Safety and Environmental Hygiene	13.11.2018 (Item IV)	<u>Agenda</u> <u>Minutes</u>
	24.12.2018*	Administration's response to a motion passed at the meeting on 11 December 2018 in relation to the item "Mosquito and rodent control" discussed at the meeting on 13 November 2018 (<u>LC Paper No. CB(2)510/18-19(01)</u>)
	8.1.2019 (Item IV)	<u>Agenda</u> <u>Minutes</u>
	12.2.2019 (Item III)	<u>Agenda</u> <u>Minutes</u>
	21.4.2020 (Item III)	<u>Agenda</u> <u>Minutes</u>
	14.5.2020*	Administration's follow-up paper on "Mosquito control work" (<u>LC Paper No. CB(2)984/19-20(01)</u>)

* Issue date