

立法會
Legislative Council

LC Paper No. CB(2)1995/10-11(10)

Ref : CB2/PL/FE

Panel on Food Safety and Environmental Hygiene

**Background brief prepared by the Legislative Council Secretariat
for the meeting on 14 June 2011**

Mosquito prevention and control

Purpose

This paper provides a summary of discussions relating to mosquito prevention and control by the Panel on Food Safety and Environmental Hygiene ("the Panel").

Background

2. Apart from causing nuisance to human being, some species of mosquitoes may pose threat to public health as vectors of diseases, such as dengue fever, Japanese encephalitis ("JE") and chikungunya. According to the Administration, there were 79 imported dengue fever cases and four local cases in 2010. The Food and Environmental Hygiene Department ("FEHD") takes stewardship in organizing anti-mosquito campaigns annually on a territory-wide basis to heighten public awareness of the potential risk of mosquito-borne diseases, encourage community participation and promote cooperation among government departments concerned in anti-mosquito work. The campaign is implemented in three phases. The first phase of Anti-mosquito Campaign 2011 commenced on 28 February 2011.

3. Under the Anti-mosquito Campaign 2007, some 127 713 breeding places or potential breeding places of mosquitoes including those of *Aedes albopictus* and the vector of JE were identified and eliminated by the Administration. Enactment of the Public Health and Municipal Services (Amendment) Ordinance in May 2006 has also helped in raising the awareness of property owners and property management companies about mosquito prevention and control as well as the need for swift actions against mosquito breeding.

4. Since 2000, FEHD has put in place a dengue vector surveillance programme by the use of ovitraps to monitor the distribution of *Aedes albopictus* at selected locations and provide surveillance information for making timely adjustments to the mosquito control strategies and measures. Under the surveillance programme, two different indices, namely, Area Ovitrap Index ("AOI") and Monthly Ovitrap Index ("MOI") are recorded. AOI indicates the extensiveness of the distribution of Aedine mosquitoes in the surveyed area while MOI is the average of all AOIs of the same month, which reflects the distribution and activity of *Aedes albopictus* in the territory.

5. The records of 2007 revealed that a total of 58 AOIs exceeding 20% were recorded during the year and under such circumstances, the District Anti-mosquito Task Forces stepped up the coordination of government efforts in combating mosquito problem and mobilizing community participation in anti-mosquito activities in accordance with established practices. In addition to ovitrap surveys conducted in different districts, FEHD also carries out dengue vector surveillance in port areas. In 2007, the ovitrap indices of all groups of port areas were below 20%. Port Monthly Ovitrap Indices ("PMOIs") in 2007 ranged from 0% (January to February) to the highest of 3.2% (June). The variation in PMOIs was in line with the trends in previous years. For areas with positive indices, the Administration would act jointly with other relevant organizations such as Airport Authority, the MTR Corporation Limited and freight forwarding companies in strengthening the anti-mosquito work.

6. FEHD has since 2004 joined with the Hong Kong Observatory in a collaboration study to investigate the relationship between mosquito breeding and different weather parameters. The preliminary findings indicated that breeding of *Aedes albopictus* was closely related to the rainfall and average air temperature before and during the periods of the setting of ovitraps. Analysis of the data suggested that rainfall has a stronger effect on the breeding of the mosquito than the average air temperature.

Deliberations of the Panel

7. At its meeting on 8 April 2008, the Panel was briefed on the Anti-mosquito Campaign 2008 launched by the Administration and the campaign result of 2007. Concern was raised about the mosquito problem in the rural areas, such as live poultry farms and pig farms. The Administration pointed out that the existing ovitraps were not designed to monitor the distribution of *Culex* mosquitoes, vector of JE and other surveillance methods had to be used. According to the past figures of AOIs, there was no causal relationship between the indices of ovitraps and their proximity to pig farms.

8. On the enquiry about the reasons for the first phase of Anti-mosquito Campaign 2008 to commence so early in February, the Administration explained that *Aedes albopictus* laid their eggs in damp areas, such as flower pots, gutters and drainage pipes in winter (i.e. around November to December each year). When rainy season came in March and April, their eggs laid in these areas that would be flooded by water would be hatched. It was thus necessary for FEHD to start the first phase of the campaign in February to remind the public to take precautionary measures to prevent and combat mosquito breeding before the start of rainy season.

9. In view of the tampering of ovitrap case occurred in 2006, members expressed grave concern over the outsourcing system of mosquito control work and the measures taken by the Administration to prevent the re-occurrence of the incident. According to the Administration, FEHD had stepped up its efforts in monitoring the work of contractor after the incident. The Food and Health Bureau chaired a steering committee to coordinate the mosquito control work carried out by various government departments and provide the necessary policy steer. Headed by two Deputy Directors of FEHD, two different teams of staff were responsible for mosquito control operation work and monitoring of mosquito control work. The steering committee would keep in view the measures taken by departments to alleviate the mosquito problem and monitor the mosquito control work.

10. As regards the precautionary measures for the tampering of ovitraps, the Panel was advised that the Administration had improved the design of ovitraps by adding caps to cover the ovitraps so as to avoid inadvertent spilling of mosquito control pesticides into the ovitraps when the anti-mosquito operations were carried out. Ovitrap would also be sealed and, if the seals were found to be broken or tampered with, FEHD staff would change the ovitraps concerned and the figures of ovitrap indices would not be used. If there were suspected cases of tampering with ovitraps, FEHD staff would refer the suspected cases to the Police for investigation.

Relevant papers

11. A list of the relevant papers on the LegCo website is in the **Appendix**.

Relevant papers on mosquito prevention and control

Meeting	Date of meeting	Paper
Panel on Food Safety and Environmental Hygiene	6.10.2006 (Item I)	Agenda Minutes CB(2)3153/05-06(01)
	8.4.2008 (Item V)	Agenda Minutes CB(2)1488/07-08(2)
Legislative Council	18.10.2006	[Question 18] Asked by: Hon James TO Placement of ovitraps for mosquito surveillance
	26.11.2008	[Question 7] Asked by: Hon Alan LEONG Anti-mosquito measures

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Legislative Council Secretariat
8 June 2011