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**Legislative Council**

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**Panel on Food Safety and Environmental Hygiene**

**Background brief prepared by the Legislative Council Secretariat  
for the meeting on 12 April 2016**

**Anti-mosquito work**

**Purpose**

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

**Background**

2. According to the Administration, apart from causing nuisance to human beings, some species of mosquitoes may pose threat to public health as vectors of diseases, such as dengue fever ("DF") and Japanese encephalitis. The Food and Environmental Hygiene Department ("FEHD") organizes 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 concerted efforts among government departments concerned in anti-mosquito work.

3. An Anti-Mosquito Steering Committee ("AMSC") has been set up since 2002 to set strategies and directions for territory-wide anti-mosquito efforts. AMSC is chaired by the Permanent Secretary for Food and Health (Food) and comprises members from 12 policy bureaux and departments. An Interdepartmental Coordinating Committee on Dengue Fever was also set up in 2001 to coordinate efforts at the operational level. FEHD has been coordinating the mosquito control and prevention work by various departments under their respective purviews.

4. Since 2003, FEHD has put in place an enhanced dengue vector surveillance programme for monitoring the distribution of *Aedes albopictus* at selected areas, and evaluating the effectiveness of mosquito control and prevention work carried out by various parties. The surveillance data thus collected provide an informed basis for timely adjustment to their mosquito control strategies and measures. Under the dengue vector 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 reflecting the distribution and activity of *Aedes albopictus* throughout the territory. A total of 44 areas in the community are currently covered under the surveillance programme. Starting from 2004, the surveillance programme has been extended to cover all major port areas. The Port Monthly Ovitrap Index for *Aedes albopictus* ("PMOI") is enumerated to reflect the overall monthly situation of mosquito breeding in the port areas.

5. In addition, an ovitrap index rapid alert system targeting the management offices of residential premises, social welfare facilities, schools, construction sites and utilities companies that fall within the 44 surveillance areas has been introduced since April 2011 to ensure that anti-mosquito measures are taken promptly when AOI of a particular area reaches the alert level of 20%. Whenever AOI reaches 20%, subscribers to the system whose premises are situated within the surveillance area concerned will be individually notified by the relevant departments upon the publication of AOI.

6. According to the Administration's information provided to the Panel in May 2015, MOIs recorded in 2014 were in general lower than those in previous years, and the movements in 2014 were also in general similar to the pattern in previous years. A chart showing the trend is at **Annex I**. In 2014, the highest AOI of 45.6% was recorded in Tseung Kwan O in May, followed by 41.4% in Ma On Shan in July. The monthly AOIs for all 44 surveillance areas are provided at **Annex II**. In total, 19 areas had recorded AOIs reaching or exceeding the alert level of 20% on at least one occasion. In response, FEHD convened district task force meetings and activated the rapid alert system for a total of 20 times to step up the coordination of government efforts in mosquito control and to mobilize community participation in anti-mosquito efforts. In 2014, the ovitrap indices for all six groups in the port areas were below 20%. The highest ovitrap index of 10.5% was recorded in the group of Cross Boundary Check Points on Land in June (see **Annex III**). PMOIs in 2014 ranged from the lowest of 0% (in January to March and December) to the highest of 2.5% (in June). The PMOI movements showed a similar pattern as in previous years. A chart showing the trend is at **Annex IV**.

## **Members' concerns**

7. The subject of mosquito control was regularly discussed at the meetings of the Panel. Members' major views and concerns are summarized below.

### Anti-mosquito measures

8. Members were concerned about the measures taken by the Administration to prevent incidents of interference of ovitraps. Enquiry was raised as to whether the Administration would consider expanding the scope of the dengue vector surveillance programme and lowering the AOI alert level of 20%. The Administration was also urged to have better coordination and division of labour among government departments, and to make continuous efforts to carry out anti-mosquito work throughout the year, particularly in those districts frequently affected by mosquito infestation.

9. According to the Administration, ovitrap covers and wind bridges had been used to minimize intentional or unintentional interference. Regular and surprise inspections were also conducted to ensure that contractors followed the anti-mosquito work plan. Since the surveillance programme already covered 44 areas, there was no apparent need for further expanding the coverage. It should also be noted that the AOI alert level was lowered from 30% to 20% several years ago. The Administration would continue to monitor the situation and consider adjusting the alert level as and when necessary.

10. Concern was expressed about the rise in the number of imported DF cases and the prevalence of DF in Guangdong Province and some Southeast Asian countries (including Singapore, Malaysia and Thailand) in recent years. Noting that PMOI recorded at cross boundary check points on land and cross boundary ferry piers were particularly high, posing threat to the residents living in the nearby areas, e.g. Tin Shui Wai and Yuen Long, members enquired whether there were targeted measures to strengthen the anti-mosquito work in the port areas so as to prevent DF from being introduced into the territory. There was a suggestion that the Administration should collect information on specific cities/regions of countries with higher risks of DF and advise Hong Kong residents not to visit those places to avoid infection of DF.

11. The Administration advised that the port dengue vector surveillance programme in nine port areas had been stepped up from a monthly interval to twice a month since November 2014. Starting from the summer of 2015, the strengthened surveillance had been extended to all the 29 port areas. FEHD had also worked with the MTR Corporation Limited to set up mosquito catching apparatuses at the station platforms for through trains. As most of the DF cases confirmed in the past few years were imported, and DF remained highly prevalent in neighbouring areas that were frequently visited by Hong

Kong residents, including Guangdong Province, Taiwan and Southeast Asia, FEHD would monitor the situations in neighbouring areas and strengthen public education on prevention of DF accordingly. At present, information about the countries that were visited by infected people would be collected. FEHD would work with the Port Health Office of the Department of Health to remind Hong Kong residents to take mosquito preventive measures when travelling abroad and to seek medical advice if they felt sick after visiting endemic areas.

### Inter-departmental cooperation

12. There was concern that some government departments seemed not to have accorded a high degree of importance to mosquito control in venues under their management and were not proactive in undertaking anti-mosquito work. Members enquired about the coordination and cooperation among various departments in taking forward various mosquito control strategies and measures.

13. The Administration advised that effective mosquito control required sustained efforts on the part of all parties concerned. In assuming a coordinating role, all FEHD District Environmental Hygiene Offices would convene a special anti-mosquito task force meeting each year before rainy season to enhance relevant departments' awareness of the importance of mosquito control in venues under their management. Whenever AOI reached 20%, the FEHD District Environmental Hygiene Office concerned would convene district task force meetings with concerned departments/parties and provide necessary advice and assistance to them in formulating mosquito control strategies. These apart, FEHD had launched a new Anti-mosquito Campaign in early 2015 in collaboration with other relevant government departments to maintain the momentum. Bearing the theme "Prevent Japanese encephalitis and Dengue Fever - Act Now!", the Campaign was scheduled for implementation by phases, during which relevant departments had joined hands to launch two rounds of intensive mosquito preventive and control exercises across the territory covering areas under their purview. According to the Administration, FEHD would continue to work jointly with District Councils and relevant organizations to enhance mosquito control work at the district level.

### **Recent developments**

14. Over the past few months, thousands of newborn babies in Brazil were born with microcephaly, which were suspected to be related to their mothers having been infected with Zika virus through mosquito bites during pregnancy. It has been reported that there is a trend of the Zika epidemic spreading across

the globe.

15. On 15 February 2016, the Administration briefed the Panel on Health Services on the latest measures adopted by the Government to prevent and control Zika virus infection. According to the Administration, Zika virus is primarily transmitted to humans through bites of *Aedes mosquitoes*, and *Aedes aegypti* is considered the most important vector for Zika virus transmission to humans. Although *Aedes aegypti* is currently not found in Hong Kong, other mosquito species such as *Aedes albopictus* are also considered potential vectors. Since *Aedes albopictus* is widely present locally, there is a risk of secondary spread of imported infection in Hong Kong. Furthermore, extensive international travel will increase the risk of imported Zika virus cases in Hong Kong. Given the foregoing, the Government has put in place a series of preventive measures to guard against the Zika virus, including, among others, mosquito elimination.

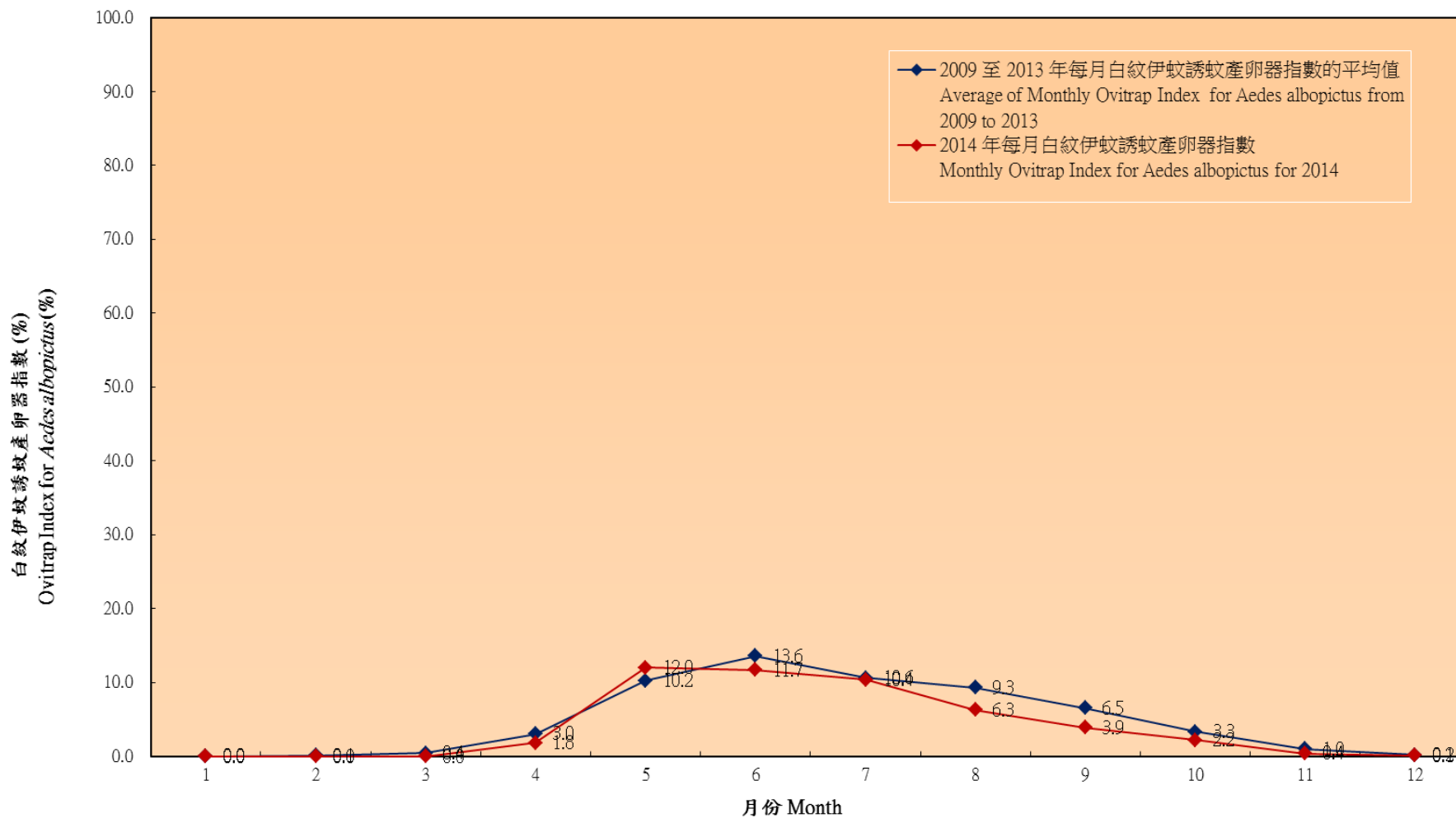
16. Given the widespread public concern, the Administration will brief members on government efforts in mosquito control, including the Anti-mosquito Campaign 2016, at the Panel meeting on 12 April 2016.

### **Relevant papers**

17. A list of the relevant papers on the Legislative Council website is in **Annex V**.

Council Business Division 2  
Legislative Council Secretariat  
6 April 2016

2009-13 年與 2014 年白紋伊蚊誘蚊產卵器指數比較  
 Comparison of Monthly Ovitrap Index for *Aedes albopictus* (2009-13 and 2014)



**Ovitrap Indices for 44 locations in 19 districts – 2014**

	Locations	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Hong Kong Island & Outlying Islands	Chai Wan West	0.0%	0.0%	0.0%	0.0%	3.6%	10.9%	9.1%	7.3%	5.7%	3.6%	0.0%	0.0%
	Shau Kei Wan and Sai Wan Ho	0.0%	0.0%	0.0%	0.0%	12.1%	21.4%	27.1%	8.5%	3.5%	1.7%	0.0%	0.0%
	North Point	0.0%	0.0%	0.0%	0.0%	13.2%	5.7%	3.7%	9.4%	1.9%	1.9%	0.0%	0.0%
	Wan Chai North	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	10.2%	4.3%	4.2%	0.0%	0.0%	0.0%
	Happy Valley	0.0%	0.0%	0.0%	0.0%	3.5%	16.1%	16.1%	13.5%	3.5%	1.8%	0.0%	1.8%
	Central, Sheung Wan and Sai Ying Pun	0.0%	0.0%	0.0%	0.0%	14.8%	5.6%	9.1%	3.8%	3.6%	3.6%	0.0%	0.0%
	Sai Wan	0.0%	0.0%	0.0%	0.0%	22.6%	7.4%	9.3%	3.9%	9.6%	1.9%	0.0%	0.0%
	Aberdeen and Ap Lei Chau	0.0%	0.0%	0.0%	0.0%	2.0%	5.9%	3.8%	4.3%	3.8%	0.0%	3.7%	0.0%
	Pokfulam	0.0%	0.0%	0.0%	0.0%	16.3%	6.1%	10.4%	6.1%	4.3%	4.3%	0.0%	0.0%
	Deep Water Bay and Repulse Bay	0.0%	0.0%	0.0%	1.8%	13.0%	32.1%	10.9%	0.0%	0.0%	0.0%	0.0%	0.0%
	Cheung Chau	0.0%	0.0%	0.0%	0.0%	2.9%	11.8%	20.6%	13.9%	5.6%	0.0%	0.0%	0.0%
Tung Chung	0.0%	0.0%	0.0%	5.4%	13.2%	13.5%	8.1%	2.7%	8.1%	0.0%	0.0%	0.0%	
Kowloon	Tsim Sha Tsui	0.0%	0.0%	0.0%	0.0%	0.0%	12.3%	14.5%	1.8%	0.0%	0.0%	0.0%	0.0%
	Mong Kok	0.0%	0.0%	0.0%	0.0%	1.8%	3.7%	5.5%	1.9%	1.8%	1.8%	0.0%	0.0%
	Lai Chi Kok	0.0%	0.0%	0.0%	0.0%	16.0%	9.3%	2.1%	9.6%	4.0%	0.0%	0.0%	0.0%
	Sham Shui Po East	0.0%	0.0%	0.0%	9.3%	23.6%	14.8%	5.5%	3.7%	0.0%	0.0%	0.0%	0.0%
	Cheung Sha Wan	0.0%	0.0%	0.0%	3.7%	9.3%	5.7%	13.5%	7.4%	1.9%	1.9%	0.0%	0.0%
	Kowloon City North	0.0%	0.0%	0.0%	1.8%	18.2%	3.7%	13.2%	4.0%	7.3%	0.0%	0.0%	0.0%
	Hung Hom	0.0%	0.0%	0.0%	0.0%	0.0%	9.4%	9.6%	5.9%	3.7%	9.8%	0.0%	0.0%
	Ho Man Tin	0.0%	0.0%	0.0%	0.0%	0.0%	7.4%	13.2%	10.0%	11.3%	1.9%	3.8%	0.0%
	Wong Tai Sin Central	0.0%	0.0%	0.0%	0.0%	6.3%	20.6%	3.2%	6.3%	3.2%	1.7%	0.0%	0.0%

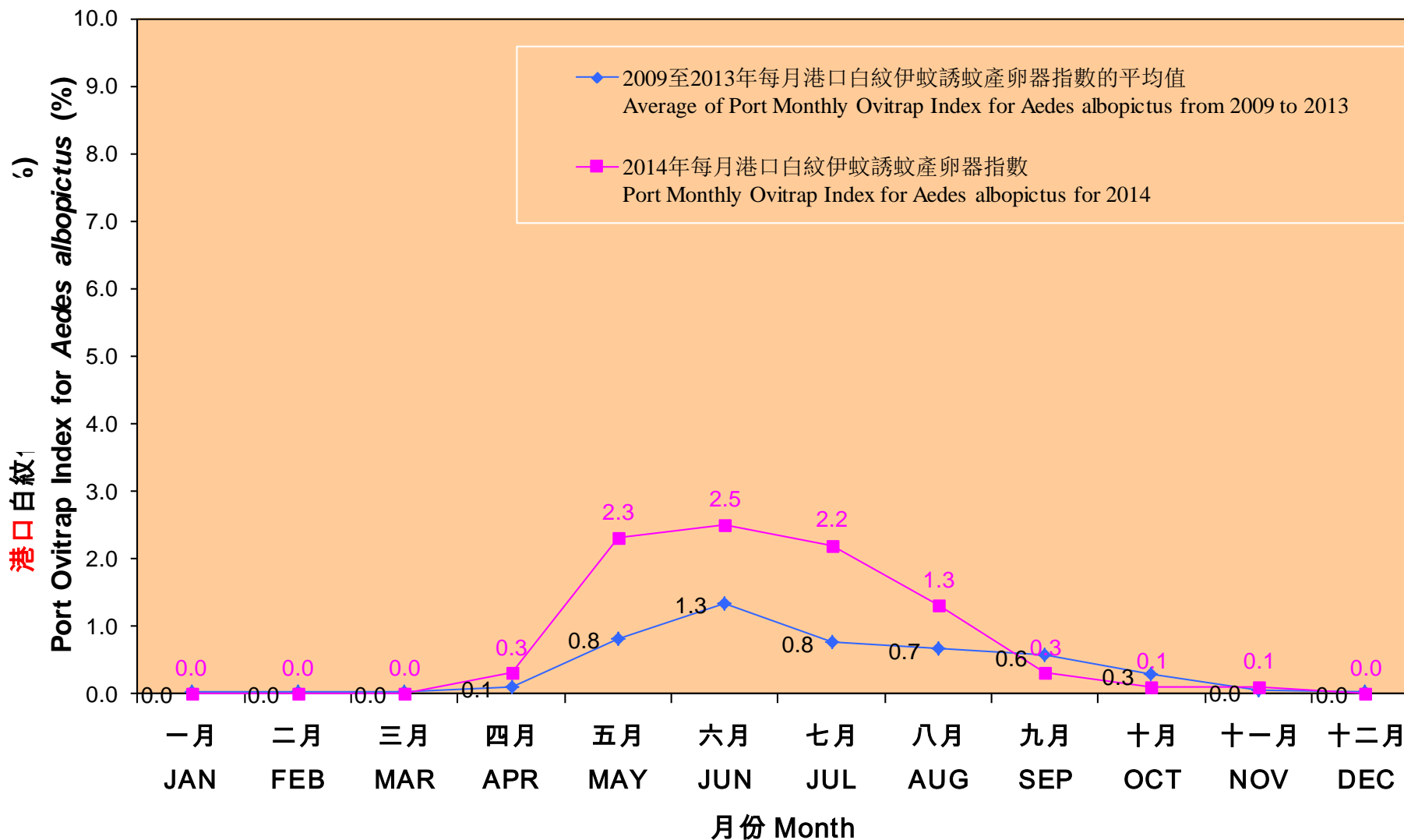
	Locations	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	Diamond Hill	0.0%	0.0%	0.0%	0.0%	0.0%	9.6%	3.8%	3.8%	1.9%	11.8%	1.9%	0.0%
	Kwun Tong Central	0.0%	0.0%	0.0%	3.8%	11.8%	20.4%	3.8%	7.3%	7.5%	1.9%	0.0%	0.0%
	Lam Tin	0.0%	0.0%	0.0%	3.7%	32.7%	18.9%	13.0%	7.7%	5.9%	1.8%	0.0%	0.0%
New Territory East	Tseung Kwan O	0.0%	0.0%	0.0%	18.3%	45.6%	13.3%	8.6%	5.2%	0.0%	1.7%	0.0%	0.0%
	Sai Kung Town	0.0%	0.0%	0.0%	10.0%	30.6%	10.4%	8.2%	4.0%	0.0%	0.0%	0.0%	0.0%
	Ma On Shan	0.0%	0.0%	0.0%	0.0%	3.4%	17.2%	41.4%	3.6%	3.6%	3.6%	0.0%	0.0%
	Yuen Chau Kok	0.0%	0.0%	0.0%	0.0%	10.9%	12.7%	29.6%	16.7%	11.3%	9.1%	3.7%	0.0%
	Tai Wai	0.0%	0.0%	0.0%	0.0%	7.3%	16.4%	23.6%	8.9%	1.9%	3.6%	0.0%	0.0%
	Tai Po	0.0%	0.0%	0.0%	0.0%	3.6%	27.3%	5.6%	3.7%	9.3%	1.9%	1.9%	1.9%
	Fanling	0.0%	0.0%	0.0%	0.0%	16.7%	13.0%	9.4%	13.0%	0.0%	5.6%	0.0%	0.0%
	Sheung Shui	0.0%	0.0%	0.0%	0.0%	5.7%	18.2%	10.9%	14.5%	5.8%	1.9%	0.0%	1.9%
New Territory West	Tin Shui Wai	0.0%	0.0%	0.0%	3.6%	3.8%	10.9%	14.0%	5.3%	1.8%	2.0%	0.0%	0.0%
	Yuen Kong	0.0%	0.0%	0.0%	0.0%	12.0%	16.0%	16.0%	16.0%	4.0%	8.3%	0.0%	0.0%
	Yuen Long Town	0.0%	0.0%	0.0%	0.0%	20.0%	7.7%	5.7%	1.9%	1.8%	0.0%	0.0%	0.0%
	Tuen Mun (S)	0.0%	0.0%	0.0%	0.0%	2.0%	9.4%	2.0%	3.8%	9.6%	1.9%	0.0%	0.0%
	Tuen Mun (N)	0.0%	0.0%	0.0%	0.0%	8.5%	7.0%	5.1%	3.4%	0.0%	3.5%	1.7%	0.0%
	So Kwun Wat	0.0%	0.0%	0.0%	0.0%	5.7%	11.1%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%
	Tsuen Wan Town	0.0%	0.0%	0.0%	3.4%	25.5%	6.7%	12.3%	3.6%	3.4%	0.0%	0.0%	0.0%
	Ma Wan	0.0%	0.0%	0.0%	0.0%	12.0%	4.2%	4.0%	8.0%	8.7%	0.0%	0.0%	0.0%
	Sheung Kwai Chung	0.0%	0.0%	0.0%	1.9%	20.4%	3.8%	2.0%	0.0%	0.0%	0.0%	1.9%	0.0%
	Kwai Chung	0.0%	0.0%	0.0%	10.2%	14.8%	5.8%	5.6%	7.4%	0.0%	0.0%	0.0%	0.0%
	Lai King	0.0%	0.0%	0.0%	1.9%	14.5%	20.0%	5.5%	10.9%	9.3%	3.6%	0.0%	0.0%
	Tsing Yi	0.0%	0.0%	0.0%	0.0%	22.8%	5.5%	5.4%	7.1%	5.3%	0.0%	0.0%	0.0%
<b>Monthly Ovitrap Index for <i>Aedes albopictus</i></b>		0.0%	0.0%	0.0%	1.8%	12.0%	11.7%	10.4%	6.3%	3.9%	2.2%	0.4%	0.1%



**Results of Ovitrap Surveillance in Port Areas in 2014**

<b>Location</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
Hong Kong International Airport	0.0%	0.0%	0.0%	0.3%	1.8%	1.6%	1.6%	1.1%	0.1%	0.0%	0.0%	0.0%
Cross Boundary Check Points on Land	0.0%	0.0%	0.0%	0.0%	8.9%	10.5%	6.6%	3.6%	2.4%	1.8%	0.3%	0.0%
Private Cargoes Working Areas	0.0%	0.0%	0.0%	0.0%	3.8%	9.0%	9.0%	3.8%	1.3%	1.3%	1.3%	0.0%
Cross Boundary Ferry Piers	0.0%	0.0%	0.0%	0.0%	7.8%	6.1%	4.3%	2.1%	1.0%	0.0%	0.0%	0.0%
Container Terminals	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Public Cargoes Working Areas	0.0%	0.0%	0.0%	0.0%	3.4%	8.5%	4.2%	3.4%	0.9%	0.0%	1.8%	0.0%
<b>Port Monthly Ovitrap Index for <i>Aedes albopictus</i></b>	0.0%	0.0%	0.0%	0.3%	2.3%	2.5%	2.2%	1.3%	0.3%	0.1%	0.1%	0.0%

**2009至2013年與2014年每月港口白紋伊蚊誘蚊產卵器指數比較**  
**Comparison of Port Monthly Ovitrap Index for *Aedes albopictus*: 2009 - 2013 and 2014**



### Relevant papers on anti-mosquito work

Meeting	Date of meeting	Paper
Panel on Food Safety and Environmental Hygiene	14.6.2011 (Item VII)	<a href="#">Agenda</a> <a href="#">Minutes</a>
	8.5.2012 (Item VII )	<a href="#">Agenda</a> <a href="#">Minutes</a>
	13.5.2014 (Item VI)	<a href="#">Agenda</a> <a href="#">Minutes</a>
	12.5.2015 (Item VI)	<a href="#">Agenda</a> <a href="#">Minutes</a>
Legislative Council	3.2.2016	Urgent oral questions respectively raised by <a href="#">Dr Hon Priscilla LEUNG</a> and <a href="#">Hon Alice MAK</a> on Zika epidemic
Panel on Health Services	15.2.2016 (Item III)	<a href="#">Agenda</a>  <a href="#">Administration's paper on "Measures for the prevention and control of Zika virus infection" (LC Paper No. CB(2)836/15-16(03))</a>