



中華人民共和國香港特別行政區政府總部食物及衛生局
Food and Health Bureau, Government Secretariat
The Government of the Hong Kong Special Administrative Region
The People's Republic of China

[English Translation]

25 February 2020

Clerk to Panel on Food Safety and Environmental Hygiene
Legislative Council Complex
1 Legislative Council Road
Central
Hong Kong
(Attention: Miss Josephine SO)

Dear Miss SO,

**Follow-up to the Panel on Food Safety and Environmental Hygiene
Rodent Control Work**

Regarding the captioned subject raised at the Panel meeting on 10 December 2019, our response is set out below.

- (1) At present, the Food and Environmental Hygiene Department (FEHD) conducts Rodent Infestation Rate (RIR) surveys by setting baits in selected areas. The ratio of the baits bitten will be used to infer the distribution of rodents in public places. The 41 survey areas currently covered by the RIR surveys and the 9 additional survey areas to be covered in 2020 are set out at **Annex 1**.

- (2) FEHD carries out rodent prevention and control work in markets on a regular basis. Relevant statistics are collected to accurately gauge the situation of rodent infestation. The RIR surveys now cover the areas of 23 public markets, 3 markets of the Housing Department and 14 private markets.
- (3) The executive summary (English version only) of the report by the British rodent expert recommended by the World Health Organisation, who visited Hong Kong in November 2019 to advise on Hong Kong's rodent prevention and control work, is enclosed at **Annex 2**.
- (4) FEHD has been implementing a series of comprehensive rodent control measures. The integrated approach adopted by FEHD in rodent prevention and control by improving environmental hygiene, poisonous baiting and trapping are based on the recommendations and technical guidelines of the World Health Organization. At present, these are the mainstream methodologies and are in line with other places.

FEHD has initially selected three additional markets to put on trial the anti-rodent measures recommended by the British rodent expert. If the results are satisfactory, the measures will be extended to other markets. FEHD will maintain close liaison with the expert on the details of implementation.

Besides, FEHD keeps abreast of international developments in the equipment and methodologies for rodent control work and studies the feasibility of application taking into account Hong Kong's actual environment. The Department will also exchange views with experts from other places and gather the latest information through meetings and international conferences. FEHD keeps an open mind to inviting other experts from areas with a similar climate (such as the Mainland or Southeast Asian countries) to visit Hong Kong.

- (5) Our rodent control strategy is to take targeted measures to eliminate the fundamental survival conditions of rodents, namely food, harbourage and passages. Efforts have been made to eliminate rodents' food sources and hiding places as well as to block their dispersal routes. Multi-pronged strategies will be adopted, including improving environmental hygiene, rodent disinfestation and enforcement actions, to strengthen rodent prevention and control.

On the application of technologies, FEHD is conducting studies on thermal imaging camera with artificial intelligence analytical function for monitoring the areas and extend of rodent activities. Initial trial results have shown that the data captured can quantify and assess the effectiveness of anti-rodent work by directly comparing the rodent population density before and after carrying out anti-rodent operations. Also, the technology can be used for identifying potential rodents' entry points, travel routes and areas they frequently visit, so that rodenticides and trapping devices can be placed in a more effective manner and more targeted rodent control measures can be implemented. FEHD has been conducting field trials in Kowloon City since early 2020 in order to update and upgrade the quantifying functions of the RIR. Furthermore, cameras will be installed before and after anti-rodent operations in designated target areas with a view to quantifying and reviewing the effectiveness of the operations. FEHD will continue to keep abreast of the latest information on rodent prevention and rodent trapping devices, and keep an open mind to the introduction of technologies to enhance anti-rodent work.

- (6) FEHD has put in place a stringent management mechanism for its outsourced contractors to monitor the performance of pest control service contractors. At present, performance standards are set out clearly in the tender document for pest control services. Minimum requirements on manpower, work shift, and frequency of services are also stipulated in the tender document according to operational needs. FEHD staff will monitor whether the contractors have complied with the contract terms in the delivery of services in accordance with the Operational Manual for Management of Pest Control Contracts. The work performance of contractors is monitored through site inspections, surprise checks and examination of job records. In the event of any irregularities, defaults or non-compliance with contract provisions in the delivery of relevant services, FEHD will take follow-up actions, including the issue of verbal and written warnings, default notices and the deduction of monthly payment. Such performance record will affect the tenderer's future bidding for FEHD's outsourced services contracts.

To further enhance the management of pest control service contractors, FEHD will include new contract terms in its pest control service contracts with effect from April 2020 to regulate the use and placing of rodenticides and rodent trapping devices, including the direction and location in which they should be

placed. If it is found that contractors have not complied with the contract provisions in the delivery of services, FEHD will take follow-up actions in accordance with the contract terms.

Yours sincerely,

[Signed]

(Gilford LAW)
for Secretary for Food and Health

c.c.: Director of Food and Environmental Hygiene

Rodent Infestation Rate Survey Locations

District	Survey Area
Central & Western	Queen's Road Central
	Hollywood Road
	Third Street
Eastern	Fung Yip Street
	Electric Road
	Tsat Tsz Mui Road
Southern	Lee Hing Street
	Wah Fu Road
	Aberdeen Praya Road #
Wan Chai	Lockhart Road
Islands	Praya Street
	Fu Tung Street
Kowloon City	Ma Tau Wai Road
	Nga Tsin Wai Road
	Muk Chui Street #
Kwun Tong	Hong Ning Road
	Hoi Yuen Road
	Lei Yue Mun Road #
Mong Kok	Fa Yuen Street
	Prince Edward Road West
Sham Shui Po	Cheung Wah Street
	Po On Road

District	Survey Area
	Yee Kuk Street
Wong Tai Sin	Clear Water Bay Road
	Sheung Fung Street
	Tai Yau Street #
Yau Tsim	Nathan Road
	Shanghai Street
Kwai Tsing	Tsing King Road and Tam Kon Shan Road
	Tai Wo Hau Road
	Cheung Wing Road #
North	On Kui Street
	San Hong Street
	Pak Wo Road
Sai Kung	Po Ning Road
	Man Nin Street
	Po Lam Road North #
Sha Tin	Hang Hong Street
	Sha Kok Street
	Wo Che Street #
Tai Po	Kwong Fuk Road
	On Po Road
Tsuen Wan	Chung On Street
	Sha Tsui Road
Tuen Mun	Tip King Road
	Ho Tin Street
	Tsing Tin Road #
Yuen Long	Castle Peak Road – Yuen Long

District	Survey Area
	Tin Shui Road
	Hung Yuen Road #

Note: Nine survey areas to be added in 2020 are marked with #.

Executive Summary

Hong Kong's dense human population and tropical climate create highly favourable conditions for the proliferation of rats, particularly cosmopolitan species such as the brown rat (*Rattus norvegicus*) and black rat (*Rattus rattus*). Although eradication of rats is possible on small uninhabited islands, all experts agree that eradication is simply not feasible for most parts of the world. Eradication of rodent pests in the highly urbanised environment of Hong Kong is simply not possible, and efforts aimed at total eradication would come at a very high price, both financially and to the environment, and would most likely fail. So Hong Kong is left with trying to manage rodent populations and keep them below an agreed threshold, below which the negative socio-economic impacts are considered to be minimal and for which the cost of implementation is acceptable. This is the challenge faced by Hong Kong and, indeed, the world, where finding cost-beneficial strategies and technology to sustainably manage rodent pests is a never-ending quest.

Hong Kong has not been complacent in trying to manage its rodent pest problems. The Food and Environmental Hygiene Department has well-established procedures for monitoring rodent activity and for reducing rodent pest numbers. Systems exist for the public to notify authorities about rodent pests, and there are good follow up procedures to try to tackle such problems. Refuse collection systems are well-

established and work very well, with overall sanitation issues to be considered very good. There is certainly room for improvement in Hong Kong's procedures, policies and training, but there are no quick fixes or new innovations that will lead to dramatic changes in Hong Kong's rodent management activities. In comparison to other similar cities, Hong Kong should be considered one of the very best in terms of its rodent management activities, and this is reflected in evidence, presented below.

Estimating the exact number of rodents in Hong Kong would not be easy, with such knowledge coming at considerable cost. Such data do not exist for any city in the world, and any mention of how many rodents there are in a given city is entirely anecdotal. However, there is evidence that existing rodent numbers should be considered very low in Hong Kong when comparing Hong Kong to other cities around the world. Cities with very high rodent numbers, such as New York City, will observe changes in rodent behaviour. Rodents are normally nocturnal and neophobic (fear of new objects). When rodent density becomes high, rodents will change their behaviour and start seeking food during the day and will be less affected by the presence of humans or other animals. New Yorkers regularly see rodents around during the day, which are not easily scared away, suggesting very high rodent density. As most sightings of rats in Hong Kong are around dusk and dawn, this tells us that

rodent numbers have not reached the extraordinarily high numbers that would lead to intra-specific food competition avoidance. Furthermore, the expected disease burden from rodent-related disease is surprisingly low in Hong Kong. Recent cases of rat hepatitis E in Hong Kong are certainly of concern and may point to a larger undiagnosed problem in Hong Kong and elsewhere. However, the burden of other more common rodent borne diseases, such as leptospirosis, is extremely low in Hong Kong. Human leptospirosis cases are generally high and severe throughout the wet tropics, whilst in Hong Kong it is largely a problem in domestic dogs, with human cases extremely rare. Other rodent borne diseases that should be expected in Hong Kong, such as Rickettsia, are also generally low in the number of human cases. Food contamination through rodent urine or faeces does not appear to be severe; however, the causes of severe gastroenteritis are not routinely diagnosed, but where many other causative agents/practices are more likely to explain food poisoning cases. Rodent damage to infrastructure is noted, particularly to electrical cables, and although more could be done to try to quantify infrastructure damage caused by rodents, the scale of such damage seems to be minimal.

In conclusion, evidence suggests rodent pests are low in Hong Kong with minimal impacts on people's livelihoods, health and wellbeing,

particularly when compared to other cities in tropical and temperate zones. This is in no doubt because Hong Kong has some very good procedures and practices in tackling the causes (good sanitation and hygiene to prevent rodent access to food), good proofing (closed sewer system), good management strategies (rodent surveillance, trapping/poisoning campaigns) and good public awareness and practices (community sanitation programmes, communication campaigns, low tolerance to seeing rodents). The Food and Environmental Hygiene Department should be applauded for the high quality work they carry out to keep the citizens of Hong Kong safe from large-scale rodent disease outbreaks and other negative livelihood impacts. Increased vigilance is highly recommended in terms of maintaining sanitation standards with special attention to continued communication engagement with the public to increase individual responsibility within a shared community problem. It should be accepted that continued public sightings of rats are very likely to continue for some time. It is not yet clear whether substantial increases in investment can lead to substantial reductions in complaints. In order to do this, there needs to be improvements in data capture and analysis, particularly in surveillance and monitoring, that could empower authorities to increase their evidential support on the work they do.

This report is based on the expert opinion of Professor Steven Belmain, Professor of Ecology at the Natural Resources Institute, University of Greenwich, United Kingdom. On invitation from the Pest Control Advisory Section, Prof Belmain visited Hong Kong during 4 – 8 November 2019. Field visits to different parts of the city, particularly to known hot spots of rodent activity, and discussions with different stakeholders took place. The information gathered during this visit forms the basis of this report, where a detailed itinerary of the visit can be obtained from the Pest Control Advisory Section.