In order to raise the overall hygiene standards to ensure food safety and to meet higher customer’s expectation, the National Environment Agency (NEA) has announced on 28 Feb 2013 that all food establishments were required to engage licensed professional pest management operators to carry treatments at their premises from 1 March 2013.

This initiative follows the introduction of a more frequent inspection regime by NEA since November 2011, which revealed operators with poor track records in toilet cleanliness and/or pest infestation checked at least six times every quarter. The increase in inspections has seen a doubling of tickets issued to operators for lapses in these areas. From 2011 to 2012, the number of tickets issued to operators of coffeeshops, food courts and canteens for lapses in toilet cleanliness increased from 131 to 236 and for pest infestation from 28 to 49.

According to NEA, approximately 2,300 operators of such premises have been informed of this change through letters. Common offences found at such premises include lapses in toilet cleanliness and maintenance, failure to keep premises free of pest infestation and not keeping the premises clean.

SPMA welcomes the new initiative by NEA as it reaffirmed the importance of professional pest treatment in food shops and it also provides additional business opportunity for the industry. However, some members were concerned about the stipulated frequency of monthly pest treatment in particular the requirement on monthly night treatment due to the acute manpower shortage currently faced by the service industries.

SPMA met NEA on 19 February 2013 for a brief dialogue session on this issue and NEA has kindly clarified and revised the pest treatment requirements at food shops. We are pleased to reproduce the NEA & SPMA circulars for information and records by all members.
Dear Sir/Mdm,

**REQUIREMENT OF PEST CONTROL CONTRACT FOR ALL FOOD SHOPS**

Pests such as rodents, cockroaches and flies carry disease agents that can contaminate food and cause sicknesses to man. Proper pest surveillance and control are therefore essential to any food business in order to ensure that food served to the customers is safe for consumption.

2. With effect from 1 March 2013, all licensees of food caterer (Code 114), restaurants (Code 146), restaurants permitted to cater (Code 171), and food courts (Code 192) are required to engage a licensed pest control operator (PCO) to inspect for and manage pest infestation within the licensed premises, including the individual stall areas. Individual food stall licensees who want to engage their own PCO may do so. This new requirement will be imposed as a condition of licence for all new licences issued and existing licences upon renewal. A copy of the pest control contract shall be made available to our officers as and when requested. Failure to comply with this condition shall constitute a breach of the conditions of the licence and the DGPH has powers to suspend, cancel or revoke licences issued under the Environmental Public Health Act (Chapter 95).

3. Your pest control contract shall cover the licence validity period and include the control of rodents, cockroaches and flies. The inspection frequency of the food shop premises by the pest control operator shall be at least once a month to detect any sign of pest infestation, and include at least one night inspection. The need for and frequency of treatment with pesticides or other control devices will depend on the presence and level of pest infestations. If there is high pest infestation, the frequency of treatment will need to be increased and such intensive treatment may last 1 to 3 months or even up to 6 months. Please note that only licensed pest control operators and registered pesticides are allowed to be used. The type of treatment, devices, gadgets and pesticides used to eliminate pest infestation in the food shop should not contaminate any food or equipment used for preparation and serving of food.

4. We would like to remind you that good housekeeping and denying pests access to food, water and shelter are the most effective control measures. All foodstuff should not be left in the open or kept in paper or plastic bags which rats can bite through. Keep all foodstuff in solid containers without holes or in closed cabinets. Please also ensure that all food wastes are removed from the floors, cooking range, sinks, drains and gully traps in your premises, and refuse are properly bagged and tied up before disposing of it into covered bins. Do not leave refuse bags in wicker baskets or uncovered bins.

5. If you have any enquiries, please contact us at 1800-CALL NEA (1800-2255 632) or email to Contact_NEA@nea.gov.sg

Yours sincerely,
Ms Wong Chiu Ying
for Director
Environmental Health Department
National Environment Agency

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Dear Sir/Mdm,

**REQUIREMENT OF PEST CONTROL CONTRACT FOR ALL FOOD SHOPS**

We refer to the circular, EHD Circular H/0002/2013, dated 15 Jan 2013.

In the circular, it was mentioned that all food shops are required to engage a licensed pest control company to conduct at least one night inspection per month. This is because pests such as rodents and cockroaches are active at night, and night inspections are more effective to detect their activities than day inspections. Also, it is easier for pest control companies to conduct thorough checks and treatment of the premises when there is no business operation going on.

After consultation with the pest control industry, we would like to inform you that night inspection for pest infestation will not be mandatory for now. However, you are strongly encouraged to do it as a best practice, for the reasons stated in paragraph 1. This is especially so if your premises is currently infested with rodents and cockroaches. If you have obtained a licence with the condition to require pest control contract with a night inspection, we will re-send a copy of the licence with revised conditions to you shortly.

If you have any enquiries, please contact us at 1800-CALL NEA (1800-2255 632) or email to Contact_NEA@nea.gov.sg

Yours sincerely,
Ms Wong Chiu Ying
for Director
Environmental Health Department
National Environment Agency
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Bio-product against broad
spectrum of pests.

Application Case 1
Apply the gel on those inevitable and potential rat entry cracks and
crevices to reduce its entry point. Exp: surrounding the pipeline

Application Case 2
Apply the gel on those inevitable crack and crevices of crawling
insects (exp: cockroach, ant etc) to block them from enter to the
place. Work well with ant/cockroach gel and spraying as
preventing possible secondary infestation.

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Phone: +65 6841 2986 Fax: +65 6841 2026
Rats require food, water and shelter to thrive and the kitchen in food establishments provides a conducive habitat for rats. Kitchens with uncleared rubbish, poor maintenance, unkempt stall counters/kitchens and improper storage of items/cluttered items are typically more prone to rat infestation. Operators of food establishments are responsible to put in place an effective pest management system to protect their premises from any rat infestation.

Outreach to Stakeholders on Effective Pest Management Programme

Last August, the National Environment Agency (NEA) and the Singapore Pest Management Association (SPMA) jointly organized a seminar on rat control for building managing agents, food court operators and pest control operators. During the seminar, topics such as the current trend of rat infestation in Singapore, research findings on rats and their behaviours in our urban environment, the implementation of an Integrated Pest Management Programme and real-life case studies of pest control treatment in local food courts and shopping malls were covered.

Seminar participants were briefed to keep a lookout for tell-tale signs that suggest the presence of rats. The signs that indicate the presence of rats are rat droppings, rub marks, gnaw damages and rat burrows. Signs that indicate heavy infestation would include fresh droppings, strong urine smell and noise (e.g. rat squeaks, rustling in the ceiling and rat footprints), in addition to the signs mentioned above. These indicators are usually found near corners, under food preparation workstations, false ceilings and in between walls.

Rat prevention can be achieved through good hygiene, stock management and exclusion practices. The measures include sealing up wire mesh openings for all ventilation ducts in food and beverage outlets, setting up of rat traps and glue boards, as well as conducting night checks. The integrated pest management (IPM) system is the preferred method as compared to the reactive control strategy. IPM program makes use of the comprehensive information on the life cycles of pests, their interaction with the environment in combination with available pest control methods, to manage pest damage by the most economical means and with the least possible hazard to people, property and the environment. IPM also takes advantage of all appropriate pest management options including, but not limited to, the
The need for and frequency of treatment with pesticides or other control devices will depend on the presence and level of pest infestations.

premises, including the individual stall areas. Individual foodstall licensees who want to engage their own PCO may do so.

The pest control contract shall cover the licence validity period and include the control of rats, cockroaches and flies. The inspection frequency of the food shop premises by the pest control operator shall be at least once a month to detect any sign of pest infestation. The need for and frequency of treatment with pesticides or other control devices will depend on the presence and level of pest infestations. The type of treatment, devices, gadgets and pesticides used to eliminate pest infestation in the food shop should not contaminate any food or equipment used for the preparation and serving of food.

Licensees are strongly encourage to do night inspections especially so if their premises is currently infested with rats and cockroaches. These nightly inspections would be more effective as pests such as rats and cockroaches are active at night. It is also easier for pest control companies to conduct thorough checks and treatment of the premises when there is no business operation going on.

All these efforts are targeted to reduce the prevalence of rats and to ensure that all the food establishments have a good pest management plan so as to create a clean environment for the food handlers to prepare foods at all times. This is because all licensees and their food handlers are responsible to sell clean and wholesome food that is free from contamination, to the members of the public.
BESTCHEM FOGGING SOLUTION

**BESTCHEM Fogging Solution** is a water-based carrier product to be used when you do not wish to leave behind a thin, oily film on objects within the area to be sprayed.

**How BESTCHEM Fogging Solution works**

In thermal fogging, the formulation (i.e., mixture of the active ingredient with a water-based carrier) is exposed to hot air currents produced by the exhaust of a pulse-jet engine. The high velocity and temperature cause immediate fragmentation and partial evaporation of the fluid which is expelled through the exhaust pipe. As soon as the steam encounters the ambient air at a much lower temperature, it condenses into tiny droplets, forming a dense fog.

This fog contains the appropriate dose of the active ingredient, present in each of the micro droplets that compose it. The droplets can ‘float’ and move over long distances without losing their effectiveness. They can penetrate and access sites with dense vegetation, and can reach even the most inaccessible corners within a warehouse or a store.

**Benefits of BESTCHEM Fogging Solution**

- No significant odour
- Not phyto-toxic to plants
- Non-flammable
- Enables droplets to ‘float’ over long distances
- Creates a tighter droplet spectrum
- Ideal for use in sensitive applications such as vector control in residential areas
- Reduced likelihood of irritation compared to petrochemical carriers in thermal fogging applications
- A ‘must’ when fogging or misting warehouses containing agricultural commodities or other sensitive inventories
- Only new carboys are used to package BestChem Fogging Solution to prevent contamination

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**FLEAS**

**Introduction**

*Article by Dr Foo Foong Kuan*

Flea is the common name for over 2,500 species and subspecies of wingless insects of the Order Siphonoptera. Nearly all about 94% of these known species bite mammals, while the remainder is bird parasites. They are cosmopolitan in distribution, but most of the genera and species appear to be confined to certain geographical regions. For instance, species within the genus Xenopsylla are restricted to the tropic and warmer parts of the cold temperate zone. Fleas are peculiarly efficient vectors of various pathogenic agents that can cause severe diseases, e.g., Xenopsylla cheopis, the most medically important arthropod vectors of plague (Yersinia pestis) and flea-borne endemic typhus (Rickettsia typhi). They are also vectors of tularemia (Francisella tularensis). Some species of Ctenocephalides serve as intermediate hosts for several other species of cestodes. Apart from being vectors and intermediate hosts, chigoe or jigger fleas, Tunga penetrans, have been documented to penetrate into the skin of the feet of mammals.

**Biology and life cycle**

Fleas are holometabolous insects with four main stages in their life cycle, i.e., egg, larva, pupa, and adult (Fig. 1). Females readily deposit about 300–1,000 eggs in their lifetime. They usually lay 3–25 eggs per batch daily in debris. Most eggs hatch into larvae within 2–14 days, but varies greatly with species, temperature, and humidity. Larvae are completely blind, afraid of light, and very active. They seek shelter in cracks and crevices, animal furs, and on people living with poor sanitation practices. They are scavengers, feeding on organic debris and small dead insects. Sometimes, they also feed on partially digested blood expelled by adult fleas. Fleas typically have three distinct larval instars, although some species only have two. Larval development of fleas may last for about 10–21 days, depending on the species and environmental conditions. After 2–3 days, the last larval instar spins a sticky silken cocoon and pupates within it. The emergence of the adults from cocoons requires stimulus such as movement, heat, and carbon dioxide. If no such stimulus exists, they can remain dormant in their cocoons for about a year. The life cycle of fleas mostly takes 20 months or more to complete under optimum conditions. Adult fleas may survive up to 6–12 months or as long as 2 years or more. Both sexes require a blood meal prior to mating. However, they can withstand long periods of starvation or desiccation up to 6 months or more in the absence of suitable hosts.

**Identification**

Adults are relatively small, being 1–4 mm in length. They can be light or dark brown and are compressed laterally. They are wingless but possessed well-developed and strong legs with the hind legs are the longest and adapted for jumping. Intriguingly, the adult fleas can jump vertically up to 20 cm and horizontally about 30 cm or more. The legs are attached to the thorax. The head is triangular-shaped, exhibiting three-segmented club-shaped antennae. The mouthparts are pointed downwards and modified for blood-sucking. The dorsal surface of the eight segment bears sensillor or pygidium. This structure is believed to function as sensory organ. Eggs are minute, oval, sticky, and whitish or yellowish. Larvae are small, pale, and have thirteen-segmented body with each segment possesses setae and the last segment

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*Fig. 1 Life cycle of a flea (Adapted from http://science.howstuffworks.com/environmental/life/zoo/biology/insects-aarthnids/flea2.htm)*
ends with anal struts. Their mouthparts are adapted for chewing. Pupae are enclosed in silken cocoons encrusted with soil and debris, which provide camouflage.

**Management strategies**

Kill the adult fleas with adulticide and suppress the development of the immature stages with insect growth regulators (IGR) (methoprene) or insect development inhibitor (IDI) (lefenuron). Treat household infestation with IGR incorporated with pyrethroids. Place flea collar impregnated with dichlorvos or fenthion round the neck of the pets. Apply spot on insecticides (fenthion) to the pets’ skin. Use insecticidal fog or aerosol containing IGR (methoprene and pyriproxyfen) and insecticidal smoke bomb containing permethrin to fumigate and disinfect the premises, respectively. Control measures should be taken on the host’s environment, which include dehumidify with air conditioner; frequent vacuuming, wash linen in hot water; and treat the places where the pets sleep with insecticidal powders or solutions. Apply suitable insect repellents (dimethyl phthalate, diethyltoluamide, and benzyl benzoate) for personal protection against fleas. Apply creams (antihistamines, hydrocortisone, and calamine) to reduce itchiness caused by the fleas.

(A) **WSH Council is holding a one day event on Safety & Health in Facilities Management 2013 on 9 May 2013 Marina Bay Sands, Expo & Convention Centre.**

Background information:

The Workplace Safety and Health Act (WSHA) was extended to cover all workplaces since 1 September 2011. The Facilities Management sector is one of the important industry sectors newly covered under the Act. The Facilities Management sector is unique in a way that it spans across various industries and involves multiple disciplines to ensure the smooth running of the entire built environment.

Good WSH standards and practices contribute to an organisation’s competitiveness, increases productivity and enhance their overall corporate image. It would thus, make good business sense to invest in WSH to achieve that edge in the corporate world. This half-day forum aims to raise WSH awareness for the FM industry and will update on the WSH related regulations that affect the FM industry as well as share WSH best practices from the perspectives of building owners, FM service buyers and service providers.

Please register @ https://www.wshc.sg/event?register=Sc6Nsja1dCUNb6f

(B) In the 4th quarter of 2013, a tentative joint rodent seminar with NEA involving renowned speakers on the management of rodents in urban environment.

**SPMA Contacts**

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