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Prevention of disease vectors during hiking and camping

The cool and dry weather of autumn makes it a popular season for outdoor activities like hiking and camping. When enjoying these outdoor activities, people should take precautions to prevent the attack of different kinds of small creatures or the exposure to excreta of the animals, in order to avoid contracting diseases such as dengue fever, Japanese encephalitis, malaria, scrub typhus, murine typhus, tick-borne spotted fever and leptospirosis. Contracting these diseases in local rural areas is uncommon but does occur. Therefore, preventive measures should be taken when visiting rural areas.

Mosquito borne diseases

Mosquitoes are able to transmit pathogens such as viruses and protozoa to humans, and many vector species had been recorded in Hong Kong. Different species of mosquitoes bite at different times of the day and may transmit different diseases. One of the most commonly encountered mosquitoes in Hong Kong, *Aedes albopictus*, is capable of transmitting dengue fever. It is active outdoors in the day time, especially within two hours after sunrise and before sunset. At nights, campers and hikers may be attacked by members of *Culex* and *Anopheles*, and some of them are vectors of Japanese encephalitis and malaria. Some of these night-biters are active indoors.

Rickettsial diseases

Rickettsial diseases which have been reported in Hong Kong include scrub typhus, tick-borne spotted fever and murine typhus. They are transmitted to human by bites of infective mites, ticks and fleas respectively. These arthropods are ectoparasites of rodents, as well as of other animals like dogs and cats. To acquire new hosts for obtaining blood meals, these arthropods may climb on to the tips of vegetation to wait for passing-by hosts, including humans.

Other rodent borne diseases

Besides ectoparasites, rodents are able to transmit pathogens such as *leptospira* (causing leptospirosis) to human directly. These pathogens could be abundant in excretions of rodent and may contaminate the environment. People in contact with contaminated substances such as water and soil may acquire the pathogens through mucous membranes, open wounds or respiratory tract.



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and avoid brushing along
the vegetation at the sides of
footpaths.*

Preventive measures

In order to prevent contracting vector borne diseases during outdoor activities, the following advice should be followed:

- Wear long-sleeved clothing in light colour and protective footwear.
- Use insect repellent (products containing 10-30% DEET are recommended), especially on exposed skin.
- Avoid using fragrant cosmetics or skin care products.
- Avoid hiking at peak hours of vector activities, such as at dawn and dusk.
- Stay on footpaths and avoid walking through vegetation. Do not brush along the vegetation at the sides of footpaths.
- Avoid resting on vegetation, or at humid and dark places.
- Do not hang clothing on vegetation.
- Avoid contact with wild animals and their excreta.
- Do not feed wild or stray animals.
- Avoid contact with water or soil potentially contaminated by animal excretions.
- Avoid sleeping in exposed environment. Only stay in places or tents equipped with insect screens at night.
- Do not enter premises which are poorly ventilated and potentially infested with rodents.
- Inspect clothing after hiking and clear any attached arthropods.
- Inspect and clean the bodies of accompanying pets after hiking.

To avoid creating suitable environment for disease vector species, one should not

- dump anything into streams that can block or slow water flow.
- leave any rubbish, especially those with remains of food in the countryside.
- leave any rubbish or articles that can collect stagnant water in the countryside.



*Refuse dumped at the countryside may serve as food source
for rodents or breeding place for mosquitoes.*

K.L. Chan, Assistant Pest Control Officer

Tramp Ants Control

Although most ants play a vital role in our nature and should usually not to be disturbed, some invasive tramp ant species, however, may create nuisance and need to be controlled without hesitation. In household environment, they include the big headed ant (*Pheidole megacephala*), ghost ant (*Tapinoma melanocephalum*) and pharaoh ant (*Monomorium pharaonis*). In outdoor environment, yellow crazy ant (*Anoplolepis gracilipes*), hairy ant (*Paratrechina longicornis*) and fire ants (*Solenopsis sp.*) may occur in large numbers and they may affect the local biodiversity. The notorious fire ant species, Red Imported Fire Ant, *Solenopsis invicta*, can even inflict painful bites and stings on any intruders.

Household Ant Control

Ants are social insects and live in a colony with one or more egg-laying queens. Effective control should be targeted on the queens instead of individual workers. For control in household, bait is very often applied to let foraging workers to bring it back to the nest and to share it with the queen(s). If one bait product doesn't seem to be working, try another. Different kinds of ant do have different food preferences. Pharaoh ants and carpenter ants would change their food choices to fulfill their dietary requirements. Toxicant must be a slow-acting type for effective control. It should usually take a few days to eliminate the whole ant colony. Care should be taken to avoid food contamination and to keep baits out of reach of children. In some cases, especially for the carpenter ants infesting rotting wood structures, professional treatment must be sought.

Red Imported Fire Ant (RIFA) Control

For outdoor control of RIFA, it should be left to professionals with proper insecticides, tools and protective gears. When you hire a pest control company to do the job, please note the following:

- 1 Any proper identification works being conducted? (e.g. by PCAS or FEHD)
- 2 Any flags being used to locate all active RIFA mounds?
- 3 Any registration to the insecticide used?
- 4 What active ingredients are in the pesticides?
- 5 Any Material Safety Data Sheet (MSDS) and pesticide label for pesticides be provided by the pest control company?
- 6 Any pre-baiting test to check the effectiveness of baits?
- 7 Any information on pesticide expiry date?
- 8 Any monitoring works to check the amount of insecticides applied?
- 9 Any monitoring works after treatment?

Desmond, Y.T. Chan, Assistant Pest Controller



Tapinoma melanocephalum



Monomorium pharaonis