Pest Control Newsletter

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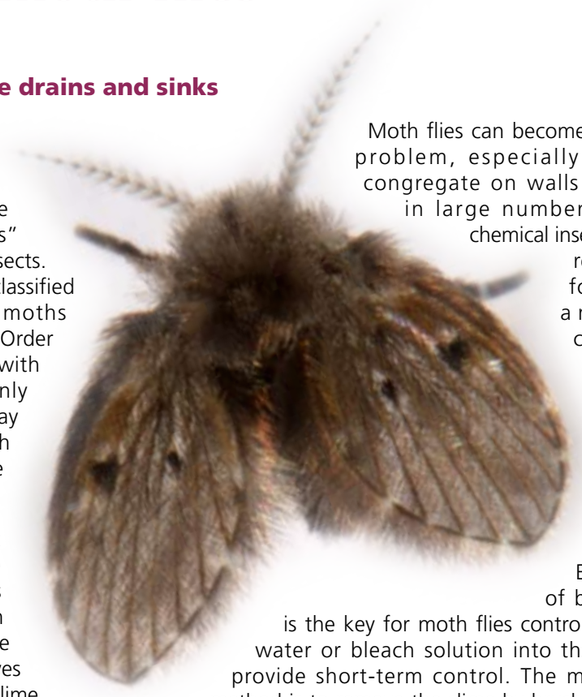
Moth flies

Moth flies: nuisance pests around the drains and sinks



Moth flies are nuisance pests that are small in size (1 to 5 mm long). Being members of the Family Psychodidae, their bodies and wings are covered with thick hairs, which give them a moth-like appearance. However, "Moths" and "Moth flies" are two distinct groups of insects. Having only one pair of wings, moth flies are classified as the Order Diptera. On the other hand, moths possess two pairs of wings and belong to the Order Lepidoptera. Moth flies are often associated with a damp environment and are most commonly seen in bathrooms and toilets. Some people may think they enter the indoor environment through windows. In fact, the flies may actually originate from the drain holes of bathrooms or kitchens.

Drainage systems provide the ideal environment for the larvae of moth flies to inhabit. The females fly into the drain holes and lay eggs (ranging from 10 to 200 eggs each time) on the slime built up inside the inner lining of the drainage pipes. Eggs and larvae embed themselves in the slime so they won't be washed away. The slime also acts as a food source for the larvae. Apart from slime, fallen hairs, food pieces or other organic materials trapped inside the sinks or floor drains can also provide food and protection for the flies. The larvae complete their development in about 1 to 2 weeks. The lifespan of adults ranges from 1 to 2 weeks. Adult moth flies are weak fliers and usually won't fly far away from their larval habitats. The adults rest on the walls or ceilings during daytime. They are not blood-feeders and they feed on moist organic matters or polluted water.

Moth flies can breed at outdoor environment as well. Areas where water accumulates, particularly if the area is shaded with algae or mold growing on the surface, are ideal egg laying sites for the species. Plant saucers, drip pans for air conditioners, clogged surface channels, or even over-irrigated potted plants are potential larval habitats. After emergence, the adult moth flies may spread to nearby areas by wind.

Moth flies can become an annoying problem, especially when they congregate on walls or windows in large numbers. Applying chemical insecticides is not recommended for both adult and larval controls as the potential hazards of insecticides usually outweigh the hazards created by moth flies. Elimination of breeding sites is the key for moth flies control. Pouring hot water or bleach solution into the drains may provide short-term control. The most effective method is to remove the slime by brushing the drains thoroughly. Always wear rubber gloves and eye protection when brushing as there may be bacteria inside the drains. It is equally important to clear clogged pipes. Do not apply chemical drain cleaners to the drains after treatment with bleach solution as the mixing of those chemicals can lead to explosion. Seek help from experienced plumbers if necessary. Unused drain holes should be sealed off to prevent the breeding of moth flies. Screens could be fitted at sinks and floor drains to prevent drains from clogging. Maintaining a clean and hygienic environment also helps to reduce the food sources for adult moth flies. For the outdoor environment, removal of stagnant water and avoidance of over-irrigation of plants can reduce the chance of moth flies breeding.

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More information on pest prevention and control can be obtained from other pages of our website.

Effective use of insect electrocuting device (Part I)

Insect electrocuting device

Insect electrocuting devices (IEDs) are popular devices which have been extensively used for control of indoor and outdoor flying insects in domestic and commercial operations. Most of them rely on a light source, usually ultraviolet light (300nm – 400nm), and have an electrified wire grid for killing insects. Some may be accompanied with other types of attractants, e.g. carbon dioxide, octenol or other volatile chemicals, heat or moisture, to trick flying insects into passing through the electrified wire grid.

When an insect is flying towards the attractant, it will touch the wire grid and will be electrocuted by high-voltage. The high-voltage will cause the insect to explode and parts of the insect will fly out of the device and land on the surrounding area. Therefore, an IED should be placed away from exposed products. IEDs using adhesive boards or catch pans may be another choice.

However, the effectiveness of the device varies between insect pest and situation. In this article, factors affecting the effectiveness of IEDs using ultraviolet light as an attractant will be discussed.

Factors affecting effectiveness of light IEDs

Light IEDs are designed to control only certain types of flying insects since some insects are sensitive to specific spectrum of light. The effective wavelength of light for attracting houseflies is between 330nm and 350nm. Therefore, blue light IEDs (with peak emission around 419nm) attract much less houseflies than the ultraviolet ones. A research even found that the flickering frequency of light played a role in attracting or repelling houseflies.

The effectiveness of IEDs is also affected by its position of installation, which is dependent on the target pest's flight pattern. For example, houseflies usually found at lower levels. Ultraviolet IEDs installed at about 1.5 meter from the floor will have a better performance on capturing houseflies. However, for mosquitoes, research showed that ultraviolet IEDs (with peak emission around 420nm) placing 2 meter above the floor yielded more mosquito catch.

The effectiveness of IEDs is affected by its design, number and size as well. Since the light source can only illuminate a certain area, the intensity of the light source used will affect the attractiveness of the device. Placing more than one light IED will be necessary for an area with considerable size. The design of other components of the IED, for example, the ultraviolet-reflecting area or the orientation of its lamp, will also affect the efficiency of the IED. Reducing the distance between wires of the electrocuting grid or coupling the IED with a suction fan may improve the effectiveness of the IED.

The presence of other types of attractants will also enhance the effectiveness of IEDs. Since the range of visual attraction of light to flies or mosquitoes is relatively short, while the range of attraction of odors is relatively long, many more houseflies will be captured and killed if an ultraviolet IED is odor-baited, especially when concentration of the odor exceeds that of the ambient odor in the area.

Environmental factors also affect the effectiveness of IEDs. For example, the effectiveness of a light IED will be impeded by the presence of another competing light source e.g. daylight or moonlight, which will lower the intensity of light above background.

Other considerations

These IEDs are not set-and-forget devices and they need routine maintenance. For example, regular clearing of their electrified grid or ultraviolet lamp, emptying of capture pans or tanks, replacement of their ultraviolet lamp or adhesive board etc. are necessary to ensure effectiveness. To ensure maximum efficiency of an IED, always follow product instructions from the manufacturers.

Although this kind of IEDs will trap and kill a considerable number of insects, it also captures many other non-target insects which could be beneficial and/or predators of the insects or serve as food of other wildlife.

Without appropriate proofing measures, the number of insects visiting premises will not be reduced significantly by IEDs alone. For example, IEDs can only be used to kill flies that have accidentally broken through screens employed by barrier methods. The ultimate solution of pest infestation should be clearance of breeding places or attractions for the pest and improvement of the environmental sanitation and hygiene.

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