

**SCOPE OF WORKS  
FOR  
MOSQUITO CONTROL**

**ENVIRONMENTAL HEALTH DEPARTMENT  
NATIONAL ENVIRONMENT AGENCY**

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## **1. MOSQUITO CONTROL**

Mosquitoes are nuisances to human and they also transmit diseases such as dengue fever/dengue haemorrhagic fever, malaria and Japanese encephalitis to man. These diseases can kill. To prevent these diseases, the mosquito population must be kept at a low level at all times. The most effective way to control the mosquito population is to get rid of their breeding sources.

Mosquitoes breed in stagnant water. Ground puddles, discarded containers, water storage containers, choked drains, roof gutters, infrequently used gully traps and toilet bowls are some examples of mosquito breeding habitats. As far as possible, these stagnant water should be removed permanently by good and regular housekeeping practices such as filling up ground depressions, disposing discarded containers properly and clearing choked drains and roof gutters. For those mosquito breeding habitats that cannot be removed permanently, you should engage a competent pest control operator to look out for them within your premises and treat them with insecticides to prevent breedings.

### **Engaging Pest Control Operators (PCO)**

It is important to make sure that the pest control operator (PCO) you engage is fully competent to do the job well. Ask for the following information in your tender invitation :

- (1) No. of trained operators in the company and their years of experience in pest control.
- (2) No. of staff in the company.
- (3) No. of sprayers and power-operated machines (eg fogging machines).

In your contract specification, you should have a scope of works which is adequate for effective mosquito control. Examples of such scope of works are shown in the chapters behind. Do not specify less frequent or inadequate measures. Also, you should not let the PCO specify the scope of works for you, as he may, in order to be competitive, quote measures that may be inadequate and not so effective.

After you have engaged a PCO, assign a supervisor to check on the PCO's work to ensure that he carries out the works in accordance with the specified scope of works. If the PCO does not provide satisfactory services, you should terminate the contract and engage another to do the work.

If your premises is a construction site, please note that as a guide, a team of two persons can check and spray an area of 30 meters radius in a day, including all the upper floors. If your construction site is big, you may have to engage more than one pest control company to cover the whole site. Also, as the building work progresses, pest control work must include checking the upper floors as and when these are constructed. You should include the checking of upper floors in your contract, and obtain a quote for pest control work per floor.

## 2. SCOPE OF WORKS FOR MOSQUITO CONTROL IN CONDOMINIUM ESTATES

### Inspection

#### Weekly

Check for mosquito breeding in the following places:-

- Discarded receptacles in open areas and under bushes
- Open and closed drains
- Gully traps
- Ground puddles
- Tree holes and bifurcations between branches, and leaf axil of banana trees, Travellers Palms and other palms
- Outdoors hanging and standing litter bins
- Scupper drains in common corridors and void decks
- Bin centre (pay attention to perimeter drains, gully traps, discarded receptacles and stored bulk bins inside and around bin centre)
- Scupper drains, perimeter drains and sumps of basement or multi-storey car parks.
- Flower troughs, plant boxes and pots
- Ponds and fountains
- Air-conditioner trays
- Any other water-bearing receptacles

### Fortnightly

Check roof drainage and gutters of condominium buildings, bin centre, walkways and other buildings or structures having roof drainage.

Apply temephos sand granules to gully traps, manhole cover handle depressions, lightning conductor pits, stop-cock pits, valve chambers and sumps.

### **Destruction of mosquito breeding**

Destroy all mosquito breedings found during the inspection and remove or treat with insecticide all potential breeding habitats. Report to the condominium management all the breedings detected and the potential breeding habitats observed so that appropriate or permanent measures can be taken to eliminate the potential breeding grounds.

### **Fogging**

Fogging is done when there is a mosquito nuisance problem or a disease outbreak.

### **3. SCOPE OF WORKS FOR MOSQUITO CONTROL IN CONSTRUCTION SITES**

#### **Inspection**

##### Weekly

Check for mosquito breeding in the following places :

- Discarded receptacles and building wastes in the worksite, bangsal area and site offices.
- Building materials, canvas sheets, equipment and machinery.
- Puddles on the ground
- Puddles on the concrete floors of all upper levels.
- Water storage drums, tanks and containers.
- Bulk waste containers
- Trenches
- Lift wells
- Drains or channels temporarily constructed to drain off water
- Any other water-bearing receptacles

#### **Application of insecticide/anti-mosquito oil**

Apply insecticides or anti-mosquito oils to all stagnant water and water-bearing receptacles at ground level and in upper floors weekly.

Repeat application after a rain as the insecticide or oil will be washed off by the rain.



**Destruction of mosquito breeding**

Destroy all mosquito breedings found during the inspection and remove or treat with insecticide all potential breeding habitats. Report to the construction site supervisor all the breedings detected and the potential breeding habitats observed so that appropriate or permanent measures can be taken to eliminate the potential breeding grounds.

**Fogging**

Fog the construction site including all the upper floors every week and whenever required due to mosquito nuisance problem or disease outbreak.

**Residual spraying**

Carry out residual spraying of the interior and exterior walls of site offices and bangsals (if the construction site is located in a malaria-sensitive area).

#### 4. SCOPE OF WORKS FOR MOSQUITO CONTROL IN SCHOOLS

##### **Inspection**

##### Weekly

Check for mosquito breeding in the following places :

- Discarded receptacles in open areas, under bushes and in school fields
- Open and closed drains
- Gully traps
- Ground puddles
- Tree holes and bifurcations between branches, and leaf axil of banana trees, Travellers Palms and other palms
- Refuse bins and bin covers
- Scupper drains in common corridors
- Bin centre (pay attention to perimeter drains, gully traps, discarded receptacles, stored bulk bins inside and around bin centre)
- Flower troughs, plant boxes and pots
- Ponds
- Air-conditioner trays
- Any other water-bearing receptacles

### Fortnightly

Check roof drainage and gutters of school buildings, bin centre, walkways and other buildings or structures having roof drainage.

Apply temephos sand granules to gully traps, manhole cover handle depressions, lightning conductor pits, stop-cock pits, valve chambers and sumps.

### School vacation

During school vacation, apply temephos sand granules to all toilet bowls, cisterns and gully traps in toilets every fortnightly.

### School Hostel or Boarding House

Carry out the above mosquito control measures also at the school hostel or boarding house. Apply temephos sand granules to all gully traps, water cisterns and toilet bowls in all the hostel rooms every fortnightly whenever these are unoccupied, eg in newly completed hostels, vacant hostel rooms, and during school vacation.

**Vacant schools**

In vacant schools or schools undergoing demolition, destroy mosquito breeding in discarded articles and items left behind. Apply insecticides to all possible breeding habitats during the interim period before measures are taken by the authority to remove the potential breeding conditions.

**Destruction of mosquito breeding**

Destroy all mosquito breedings found during the inspection and remove or treat with insecticide all potential breeding habitats. Report to the school management all the breedings detected and the potential breeding habitats observed so that appropriate or permanent measures can be taken to eliminate the potential breeding grounds.

**Fogging**

Fogging is done when there is a mosquito nuisance problem or a disease outbreak.

## **5. SCOPE OF WORKS FOR MOSQUITO CONTROL IN TOWN COUNCIL**

### **Inspection**

#### Weekly

Check for mosquito breeding in the following places :

- Discarded receptacles in open areas and under bushes
- Open and closed drains
- Gully traps
- Ground puddles
- Tree holes and bifurcations between branches, and leaf axil of banana trees, Travellers Palms and other palms
- Joss paper burners
- Outdoors hanging and standing litter bins
- Scupper drains in common corridors and void decks
- Bin centres (pay attention to perimeter drains, gully traps, discarded receptacles, stored bulk bins and joss paper burners inside and around bin centres)
- Scupper drains, perimeter drains and sumps of multi-storey car park.
- Any other water-bearing receptacles

#### Fortnightly

Check roof drainage and gutters of bin centres, linkways, overhead bridges, and other buildings or structures having roof drainage.

Apply temephos sand granules to gully traps, manhole cover handle depressions, lightning conductor pits, stop-cock pits, valve chambers and sumps.

### **Destruction of mosquito breeding**

Destroy all mosquito breedings found during the inspection, and remove or treat with insecticide all potential breeding habitats. Report to Town Councils all the breedings detected and the potential breeding habitats observed so that appropriate or permanent measures can be taken to eliminate the potential breeding grounds.

### **Fogging**

Fogging is done when there is a mosquito nuisance problem or a disease outbreak.

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