

SUFFICIENT WEAPONS

for control of

Immediately and Each Time You Want

MOSQUITOES AND OTHER VECTORS

DENGUE ENCEPHALITIS FILARIASIS FEVERS

as

WONT WEAPONS

December 2007



Natural Gentle Capture



Chemical Control Section

National Institute of Health, Department of Medical Sciences Tel: 02-951-0000 ext. 99236, 99235

SUFFICIENT WEAPONS

FOR CONTROL OF

MOSQUITOES AND OTHER VECTORS

DENGUE ENCEPHALITIS FILARIASIS FEVERS

AS WONT WEAPONS

DECEMBER 2007

Editorial Team

- | | |
|-------------------|---------------|
| 1. Mr. Kasin | Suphathom |
| 2. Miss Sunaiyana | Sathantriphop |
| 3. Mr. Pongsakorn | Mukkhun |
| 4. Miss Pungasem | Paeporn |
| 5. Mr. Phubate | Ya-amphan |
| 6. Mr. Sintop | Ninrachar |
| 7. Mr. Surapol | Ditnate |
| 8. Miss Sunisa | Pinchoothong |
| 9. Mr. Boonsoung | Suppramaul |

Printed by P.A.Living Co., Ltd.

4 Sirinthorn 7 Road, Bangbamrhu, Bangplad, BKK 10700

Tel. 02 881 9890 Fax. 02 424 3165

E-mail: paliving@gmail.com



Chemical Control Section

National Institute of Health, Department of Medical Sciences Tel: 02-951-0000 ext. 99236, 99235

Introduction

In current economy conditions, many families may buy less or stop buying mosquito spray products and back to use preventive-protective method instead. As far as disease-carried insects are not reduced, the accumulated numbers will sooner or later increase. This will cause epidemic and widely spread to be public health system problem.

Chemical Control Section, National Institute of Health, Department of Medical Sciences, has collected insect-eradication knowledge following to sufficient economy by developing simple method to attack weak point of insects, gentle, safe and thrifty method. This is presented in manual with many illustrated pictures and easy to understand for benefit of public in using by himself. Accumulated disease-carried insects at home will be reduced as it is a conveniently house weapons.

National Institute of Health does hope this manual will be beneficial to people in order to use as information in preventing and controlling mosquitoes and disease-carried insects away.

Pathom Sawanpunyalert

(Dr. Pathom Sawanpunyalert)

Director, National Institute of Health

June, 9 2008





Guaranteed
Immediately and Each Time You Want
By Yourself



Chemical Control Section

National Institute of Health, Department of Medical Sciences Tel: 02-951-0000 ext. 99236, 99235

DETERGENT – HOUSEHOLD WEAPONS

The simply mosquito control method in your home

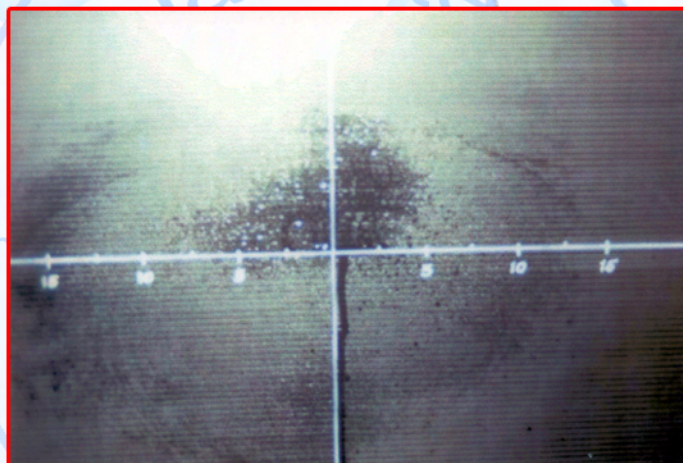
Aedes mosquitoes : dengue vector is a mosquito that has behavior to annoy people before sunset. After that it will live at breeding sites or dark-damped areas at corners, walls, clothes or hanging things. Easily observed shape is a black body with white scale along the body and legs. It flies very fast to escape enemies or dangers as well. At present, there are 2 types of mosquitoes which are carriers of dengue virus in our country such as *Aedes aegypti* and *Aedes albopictus*. These mosquitoes lay eggs in breeding sites (water containers) that are clearer and cleaner than breeding sites of *Culex* mosquitoes (seek for blood at night time). They will lay single egg at container's wall over water surface. Breeding sites of *Aedes* mosquitoes vary with environments that they live. *Aedes aegypti* lay egg in container both inside and outside of the home such as jar, bucket, tub, tree pot plate, vase, tires, plastic materials or other rain water-containing materials according to the living areas, but breeding sites of *Aedes albopictus* such as wooden hole, basin, leave cup or coconut shell in rubber tree plantation or water containing materials around home in the areas.

Eliminating of *Aedes* mosquitoes is not limited to the use of insecticides only, For the people who are not prefer to use them, the Department of Medical Sciences has developed normally knowledge of surfactant products and the “**SIPHON**” to control mosquitoes larvae and pupae. They are the simple method for people in conveniently use and safe manners.

Surfactants are household cleaning agent such as **dishwashing liquid, hair shampoo, detergent powder and liquid soap**. Their cloudy spray can be wet coating to body and respiratory of the insects which will cause them die by dehydration action.



Sprayer Adjustment



1. Use hand sprayer
2. Adjust nozzle and test the spray nozzle apart from the wall at 1 ft to have sprayed mist with 15 centimeters wide.
3. Dilute any detergent with water following to the recommended ratio.
4. Stir/mix well and fill in the hand sprayer.
5. Ready to use for killing insects.

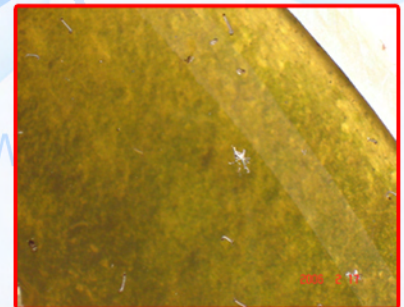
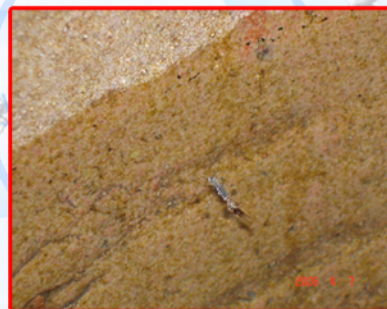
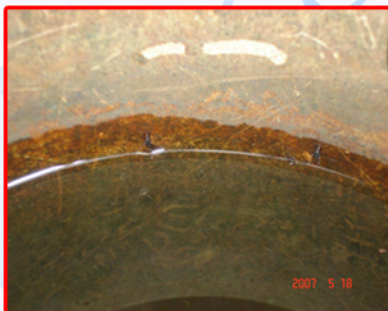
CAUTION : Do not shake – Causing too much foam will not generate insects killing effect



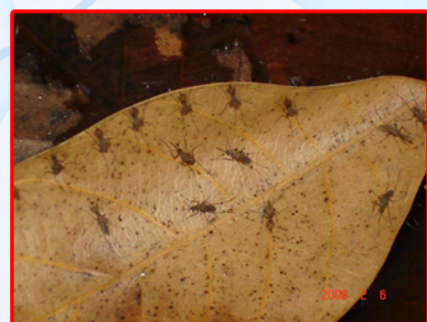
Preparation and the use of surfactants (detergents) in eliminating mosquitoes by using hand sprayer

1. Spraying for eliminating Aedes mosquitoes

1.1 Spraying Aedes mosquitoes that rest along water resource or around such as in toilet or inside wall of container/material, and other water-holding containers.



Aedes mosquitoes rest inside of water containers



Culex mosquitoes rest at water resources

Preparation Dilute 1 teaspoon dishwashing detergent with 1 liter of water

Usage

Direct spray continuously to mosquitoes, resting along with the wall of toilet or in breeding containers/materials.

Remark : Mosquitoes disable to fly and sink down immediately.



1.2 Spraying Aedes mosquitoes, resting at corners or on hanging clothes in bed rooms or dinning rooms



Preparation Dilute 1 part dishwashing detergent with 4 parts water (or dilute up to 20 times when bigger sprayer is used.)

Usage Direct spray continuously to swarmed mosquitoes in those areas.



Before spraying



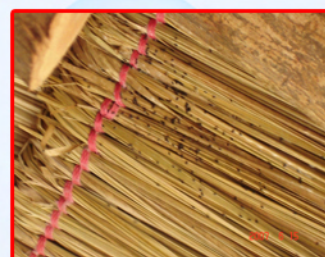
After spraying



Before spraying



After spraying



Eye gnat - Before spraying

After spraying



2. Eliminating mosquito larvae and pupae

- 2.1 Eliminating pupae and larvae of Aedes mosquitoes in small water containers/materials such as flower pots, old tires, tray and left materials around home.



Preparation Use direct spread of detergent powder to breeding sites with ratio of 1 tablespoon detergent powder to 2 liters of water contained.

Usage Direct spread detergent powder into breeding containers/materials.

Remark : Detergent powder will spread to cover water surface. When Aedes pupae or larvae come up to the surface to breathe, they will adsorb detergent into their respiratory system. The system will be disturbed and they will die finally.

Swarmed pupae and larvae of Culex mosquitoes in waste water basin



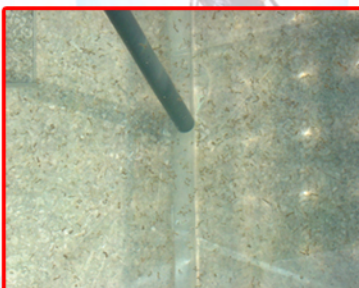
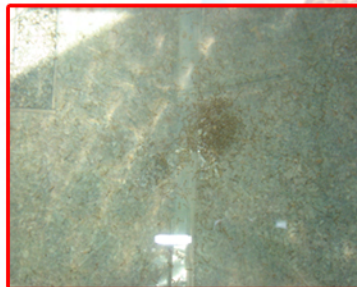
Before using detergent powder



After using detergent powder



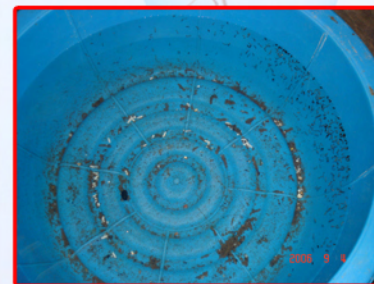
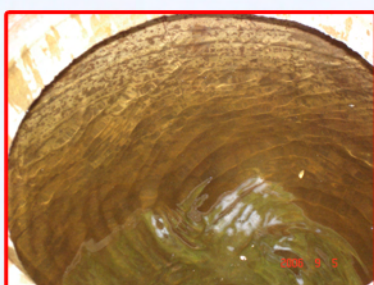
2.2 Whirlpool and Siphon Method



Preparation Use clear plastic hose with length 2 times of container's height and fill up clear hose with water, taking care no air bubbles are within the water line.

Usage Use hand whirling in the water storage container 2 or 3 times. Mosquito larvae, pupae and dirt spread in the container will be gathered to the center by centrifugal force of water. Then, use clear hose to suck mosquito larvae, pupae and dirt out of the container

Remark : the container will be cleared without mosquito larvae and pupae in 5 minutes".



3. Swoop Plate

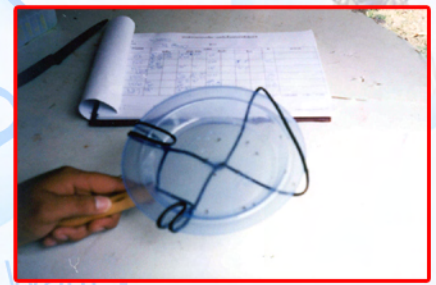


Preparation

Pour a little dishwashing liquid to spread throughout the plastic plate

Usage

Use to swoop mosquitoes which fly around. This is similar technique to mosquito killer racket but Aedes mosquitoes will be trapped and died on the plate.



As you know, eliminating mosquitoes around your home is not difficult because there are many methods to be chosen appropriately and conveniently. The department of Medical Sciences hopes that if communities and home owners are aware of danger of dengue fever and choose the suitable method to use, Aedes mosquito population will be reduced and risk of being dengue fever by Aedes mosquitoes will lower. Besides, you can use these knowledge to eliminate other insects around your home as well.

Chemical Control Section
National Institute of Health
Department of Medical Sciences



Table shows dilution ratio or preparation of dishwashing liquid (DWL) for insect eradication at home by using hand sprayer.

Insect	Preparation	Usage
Mosquitoes (General Areas)	Mix 1 part DWL with 4 parts water	Continuously direct spray the area that mosquitoes rest in the dark corners, on hanging clothes or pile of clothes
Mosquitoes (Wet/Damp Area)	Mix 1 teaspoon DWL with 1 liter water	- Continuously direct spray to wet or damp area that has mosquitoes resting such as water jar or corners of toilet or basin and etc. Remark : sink down and die - Continuously direct spray to mosquitoes making trap by dark bag trap to let mosquitoes to hide and then spray to kill Remark : swarmed death! Warning – Spraying detergent solution before mosquitoes come will not kill them.
Mosquitoes Pomace Flies	Squeeze a little DWL and spread on plastic plates	Swoop the plate to catch mosquitoes or insects flying around instead of using mosquito killer racket (If the detergent on the plate dried, spray water in and rush to mix well before use.)
Larvae	Detergent powder Mix 1 tablespoon with 2 liter water	Direct spread detergent powder into stagnant water such as old tires, septic tank (in rubber tires, use 2 tablespoons.)



Insect	Preparation	Usage
Ants Termites	Mix 1 tablespoon detergent with 1 liter water or Mix 1 part DWL with 4 parts water	● Spray or pour over the ants/termites along the walking paths or holes (all died) or using ants trap/termite by food, wood for ants and termites to come together and spray Remark : swarmed death! ● Continuously direct spray the area that termites collect in a group and eating wood (up to 20 times dilution) Remark : swarmed death!
Flies	Mix 1 tablespoon detergetn with 1 liter water or Mix 1 part DWL with 4 parts water	● Put food that flies like in the container as a trap, let the flies collect together in a group, and continuously direct spray Remark : swarmed death!
Cockroaches	Mix 1 tablespoon detergent with 1 later water or Mix 1 part DWL with 4 parts water	● Continuously direct spray to cockroaches swarmed rest along corners in kitchen or under sewer lids Remark : swarmed death!
Spiders	Mix 1 part DWL with 4 parts water	● Continuously direct spread 3 – 4 times to the spiders group Remark : slowly die
Aphids	Mix 1 teaspoon DWL with 1 liter water	● Spray directly to insects on the plant. Be careful of young leaves or petal. If necessary, after the aphids died, spray water 1 time



D – TOP : DECREASING ALL INSECTS

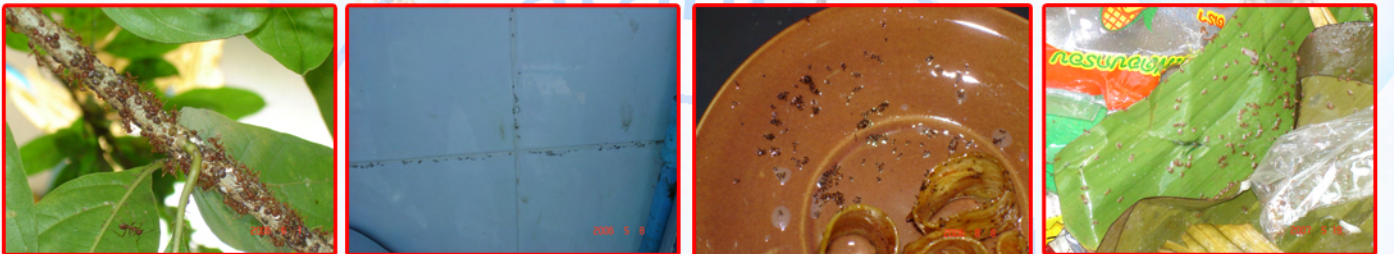
Mosquitoes



Flies



Ants



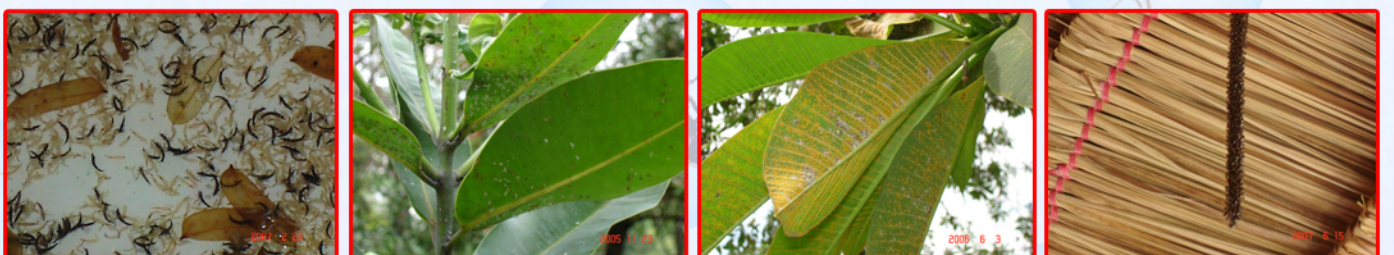
Immediately and Each Time You Want



Cockroaches



Aphids



Thrips

Aphids

Mealy bug

Eye gnat



Chemical Control Section

National Institute of Health, Department of Medical Sciences Tel: 02-951-0000 ext. 99236, 99235



Chemical Control Section

National Institute of Health, Department of Medical Sciences Tel: 02-951-0000 ext. 99236, 99235

Dish Washing Liquid for Killing Insects

Pandanus Flavor

D-TOP



MOS CLEAR DISH CLEAN



The Department of Medical Sciences Tel. 02 951 000-8 ext. 99236

“D-TOP” Easy Save and Safe for You