Mosquito origin in Dara Academy

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Abstract

This research is to study the characteristics of mosquito breeding places. Water container per number of mosquito larvae in Dara College And study previous research that studied the characteristics of the area on the number of mosquito larvae in Dara College Of Mueang District Chiang Mai Province To compare the different characteristics of areas with different environments, it may be an important factor that causes mosquito larvae. Conducting research in accordance with the principle of mosquitoes of the GLOBE project is to carry out mosquito larvae in containers both inside and outside the house. Use a colander for mosquito larvae surveying and then place mosquito larvae in a plastic bag. And to classify mosquito larvae with microscopy in the laboratory By putting mosquito larvae collected in 1 plastic bag into a plastic glass Divided according to the type of mosquito larvae. After that, count the number of mosquito larvae. and recorded in the data recording form.

The study found that Inside the Dara College, there are 39 mosquito larvae, of which there are different types which are 19 mosquito larvae, 12 annoying mosquito larvae, 6 house mosquito larvae, 2 tiger mosquito larvae, and the opaque mosquito larvae. There is no container lid.

Keywords: Mosquito larvae, Dara College School, container style, color, container

Introduction

Mosquitoes are carriers of the disease, which has been a major public health problem in Thailand for over 40 years. The disease is found throughout the year and is most common during the rainy season or during heavy rain and waterlogging. Patients can be found both in the urban areas. And rural areas throughout the country, found in children more than adults (Bureau of Epidemiology: 2003, pages 40-49)**.**

Mosquitoes carry many diseases, including dengue fever, malaria, yellow fever, encephalitis, elephantiasis, fever, joint pain (Or Chikungunya disease), etc. From past studies found that there is a spread of the number of mosquitoes that carry the disease has expanded rapidly. Which may be caused by the environment Aedes mosquitoes are carriers of dengue fever. And fever, arthralgia, Anopheles spp. is a malaria carrier. While the tiger mosquito (Mansonia spp.) Is the carrier of the elephantiasis, yellow fever and encephalitis, while the annoying mosquito (Culex spp.) Is the carrier of encephalitis and elephantiasis. Aedes common in Thailand are Aedes aegypti (L.) and Ae. Albopictus (Skuse).

From the above situation, it can be seen that dengue fever is still a major public health problem. In addition, there are currently no drugs or vaccines that can treat dengue fever. As the number of patients is increasing, we need to have a study about the number of mosquito larvae in each area. In order to know the trends of mosquito larvae and annoying mosquito larvae And the distribution of the number of Aedes aegypti larvae and the Aedes mosquito larvae in different areas.

This study is to study the characteristics of larvae breeding places on the number of larvae that appear in the container. By collecting mosquito larva data from containers in various areas Of Dara College And conducting previous research studies to study the characteristics of larvae breeding places on the number of larvae that appear in the container Which all the areas that we have explored are 14 The area within the school is (1) Kindergarten building (2) Football field (3) Swimming pool (4) Gym (5) Running ground (6) Winnie building (7) Sofia building (8) Memorial building (9) Dara Radius Building (10) Museum (11) Auditorium (12) Building-Administration (13) Helen Building (14) Parking lot, space differences and container type differences That has different environments May be an important factor that causes mosquito larvae. Which is the main reason that causes the spread of dengue fever Therefore, studying different locations may have different dengue risk. To find tools to predict the outbreak of dengue fever in the area Therefore, the information obtained from the study will be useful for the development of dengue surveillance system, reducing the chance of severe epidemic and increasing the effectiveness of the prevention and control of dengue disease further.

Research Question

1. Source of mosquitoes from water sources in Dara Academy What does it look like?

2. Water, mosquito source from the water source at Dara College How many larval mosquito larvae

3. Source of mosquitoes from water sources in Dara Academy What type of mosquito larvae are there?

Objective

1. Source of mosquitoes from water sources in Dara Academy Looks like a large water source. Small size and is a man-made reservoir.

2. Water, mosquito source from the water source at Dara College There are more than 10 Aedes larvae, both small and large in size.

3. Source of mosquitoes from water sources in Dara Academy With all types of Aedes larvae**.**

Materials and methods

Study sites

This research studied the area of Dara Academy, 196 Kaeonawarat Rd, Mueang Chiang Mai District, Chiang Mai 50000 is located on the latitude of 12.5288722 degrees east, 91.7629567 degrees north, as shown in Figure 1.

Figure1 Map of Thailand site at Dara Academy

Data Collection

Conducting research in accordance with the principle of mosquitoes of the GLOBE project. Mosquito larvae are conducted in containers both in and outside the school. The equipment consists of a sieve, a plastic bag, a Clip on smartphone, a glass of plastic, a record form.

1. Set study points

The study point is Dara Witthayalai School, Latitude 18.7969, Longitude 99.0123.Data analysis

2. Find the average number

Larvae per household from Number of larvae per household in each area = Number of larvae found in each area. Total number of households surveyed in each area.

3. Bring data from each study point to translate the data into a bar graph.

4. Calculate the comma index

5. Study relevant research

Research results titled Environmental factors and the nature of the container on the number of mosquito larvae, with Nicha Thuanchuen, Peerawit Luecha, Natdanai Kamthonkittikun as the researcher and Teacher Chan Napha Luecha as the research advisor in the academic conference. School Environmental Environmental Research Presentation Year 2016.

6. Compare the differences in the number of mosquito larvae in breeding areas of each area.

7. Summary and discussion of study results.

Research results

1. Area characteristics per mosquito larvae.

2. Study of water storage containers per mosquito larvae.

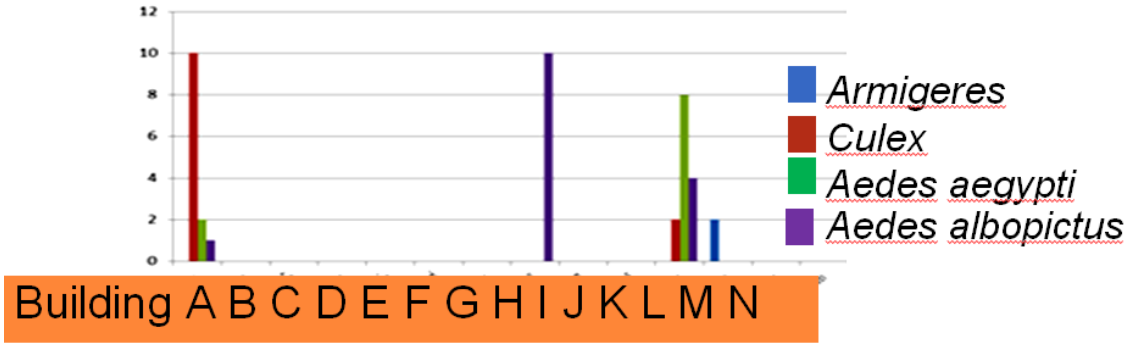
3. Calculate mosquito larvae index.

4. Compare the differences in the number of mosquito larvae in the mosquito breeding sites in each area.

1. Area characteristics per mosquito larvae

The results of the data collection found that The number of mosquito larvae in each area, when compared, has the following results:

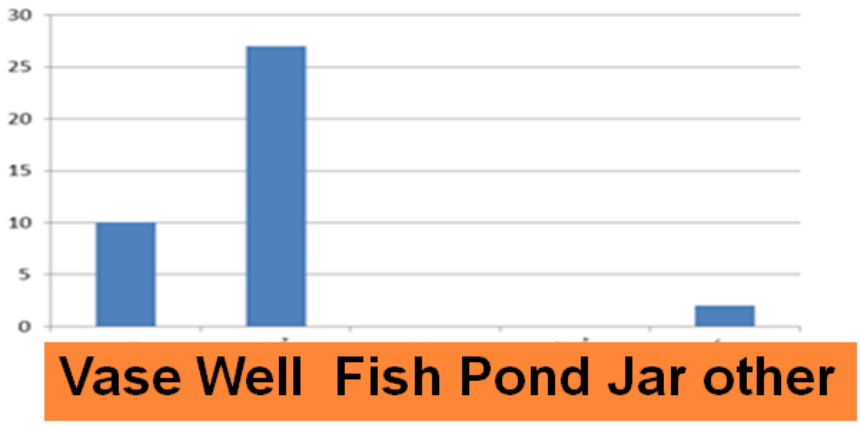
Picture 1 Number of mosquito larvae of each species in each area in Dara College



There were only 4 buildings found mosquito larvae. *Culex* larvae were found at Kindergarten building (A), *Armigeres* larvae found most at administrative building, *Aedes aegyti* found most at the auditorium building and *Ae. albopictus* found most at Memorial building.

2. Study of water storage containers per mosquito larvae

Figure 2 Comparison of the number of mosquito larvae found per house

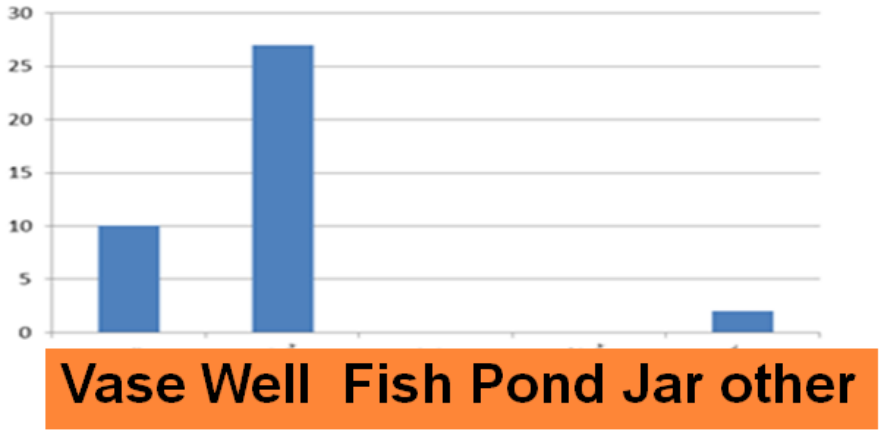


Mosquito larvae found most in well, followed by vase.

Water level (%) at different buildings

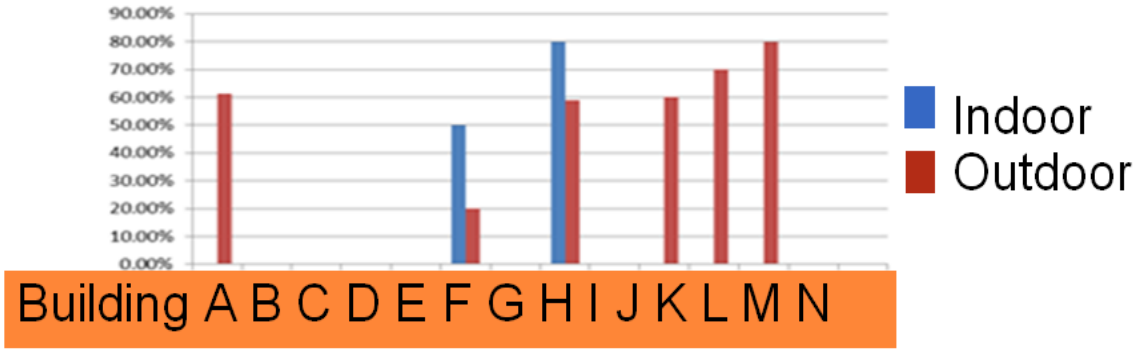
There were only 4 buildings found mosquito larvae. Culex larvae were found at Kindergarten building (A), Armigeres larvae found most at administrative building, Aedes aegyti found most at the auditorium building and Ae. albopictus found most at Memorial building.

Container types and numbers of mosquito larvae.



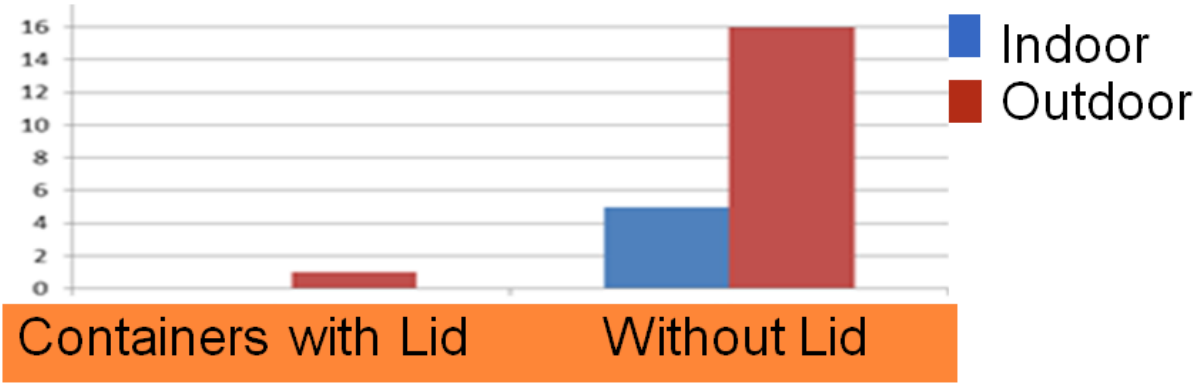
Mosquito larvae found most in well, followed by vase.

Numbers of container with lid and without lids in indoor and outdoor areas



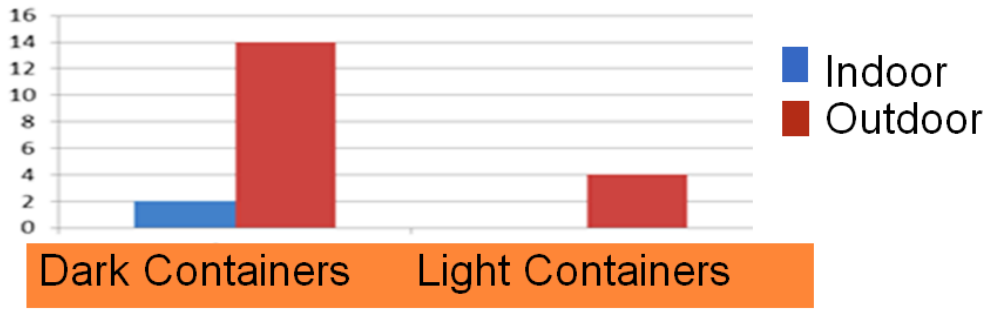
Most containers in all buildings have an average of 60-80% water level.

Numbers of container with lid and without lids in indoor and outdoor areas



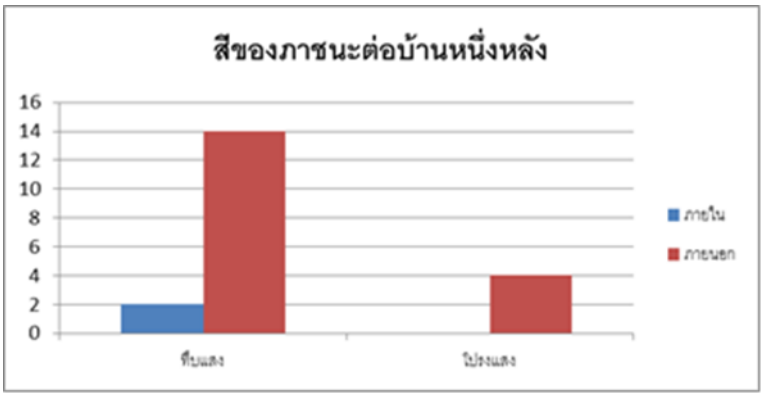
Most of containers were outdoor without lids.

Dark and light containers



Most containers were dark containers in outdoor areas.

Figure 5 Compare the number of colors of containers per house



From Fig. 5, comparing the number of containers per house, the containers in the building are more opaque and translucent. Same as the container outside the building.

Water pH containers in different builings

Water pH were 6.0-7.0 in most containers.

3. Calculate mosquito larvae index

Calculate the comma index

Calculate the comma index using the formula

Area Index (AI) = Number of areas where mosquito larvae are found x 100

Number of areas surveyed

Container Index (CI) = number of mosquito larvae found x 100

Number of containers surveyed

Breteau Index (BI) = number of mosquito larvae found x 100

Number of areas surveyed

BI> 50 and HI> 10 shows that the area is at high risk of spreading dengue.

BI <5 and HI <1 show that the area is at risk of spreading dengue disease.

Table 1 Calculate the mosquito larvae index of Dara Academy.

The location	Number of areas surveyed (area)	Number of areas where mosquito larvae were found (area)	Number of containers surveyed (Piece)	Number of containers found by mosquito larvae (pieces)	Area index (AI)	Container index (CI)	Bretua Index (BI)	Risk assessment
Dara Academy	14	4	22	4	28.57	18.18	28.57	-

From Table 1 showing the results of the mosquito larvae index calculations for each study area, found that within Dara College The container index (CI) was 18.18 and the area index (AI) and the Bretu index (BI) were the same. The results show that all areas studied have a low risk of spreading dengue.

Discussion

1. Characteristics of the area on the number of mosquito larvae found that the striped mosquito larvae are more annoying than the mosquito larvae and the tiger mosquito larvae which,areas where high mosquito larvae are found From the survey of the area condition that Crowded area construction There are many adjoining houses. Each house doesn't have much open space. Which is an environment where mosquitoes are found, consistent with the Institute for the Promotion of Science and Technology (2009) said that mosquitoes are found in forests and rural areas, annoying mosquitoes are common in urban areas, common in crowded urban areas.

2. Dara Academy has a variety of types of water storage containers. With the same number of vases, flowers and fish ponds which are the largest water storage containers Which is equal to 6 containers, followed by wells which are equal to 5 containers.

3. The results of the mosquito larvae index calculation of Dara Academy Shows that all areas of the study are at risk of spreading dengue disease The survey found that The school will spray mosquito repellent regularly and the campaign to eliminate mosquito larvae. There is knowledge about the disease that is transmitted by *Aedes* mosquitoes. And prevention, campaign, survey and eradication of mosquito larvae breeding sites The above reasons may result in the number of *Aedes* larvae decreasing to areas not at risk of spreading dengue disease.

4. Inside Dara College The auditorium has the largest number of mosquito larvae, followed by the kindergarten building, memorial building and administrative building.

5. From the container inside Dara College Found that the container with the most mosquito larvae discovered is a vase of flowers, followed by a pond and others.

International Virtual Science Symposium Optional Badges

I make an impact

The report clearly describes how a local issue led to the research questions or makes connections between local and global impacts. The students need to clearly describe or show how the research contributed to a positive impact on their community through making recommendations or taking action based on findings.

We know where main breeding sites at Dara Academy. We reported back to school principle, teachers and students. Mosquito breeding sites clean up at school were done monthly.

I am a STEM professional

The report clearly describes collaboration with a STEM professional that enhanced the research methods, contributed to improved precision, and supported more sophisticated analyses and interpretations of results.

Our results show that advices from experts are Assoc. Prof. Dr. Krisanadej Jaroensutasinee, Assoc. Prof. Dr.Mullica Jaroensutasinee and supported more sophisticated analyses and interpretations of results.

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