

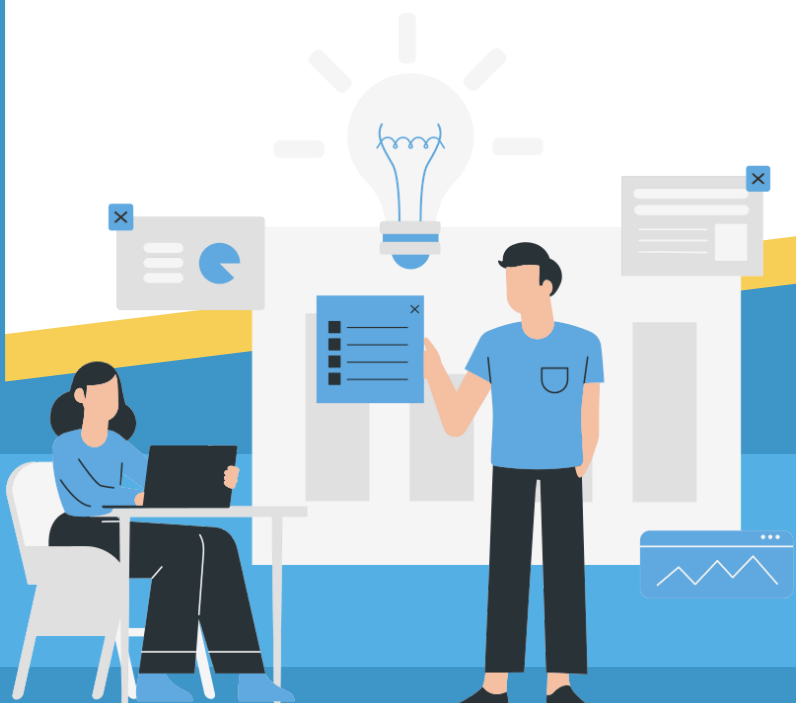


Innovative mosquito ovitrap for reducing mosquito outbreak

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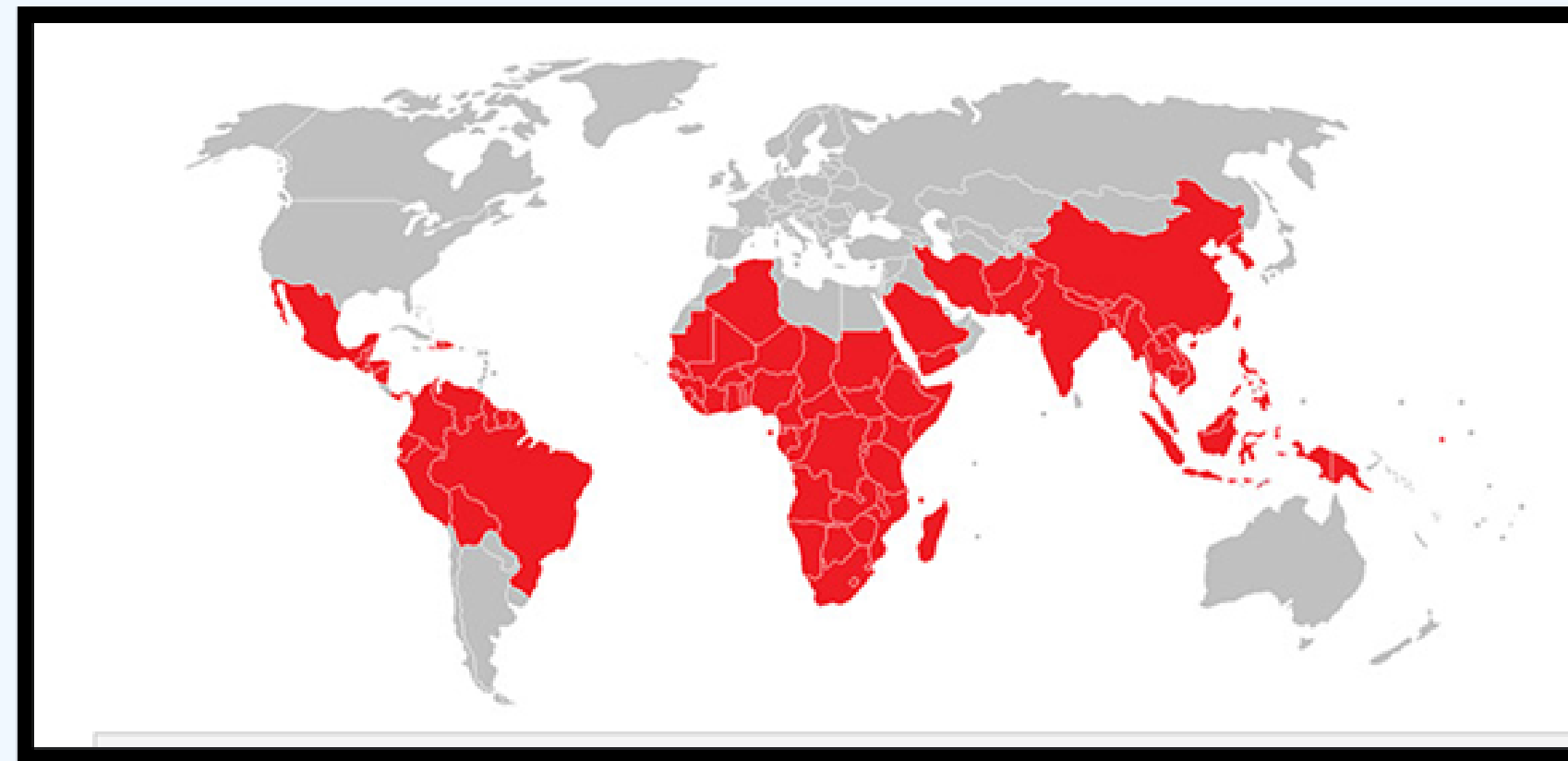


Princess Chulabhorn Science High School Trang



INTRODUCTION

Areas with Risk of Dengue



Types of mosquito breeding sites



RESEARCH QUESTIONS

1

Can innovations created and developed intercept, trap, or lure mosquitoes to lay eggs?

2

What effect do the species of mosquito breeding resources have on spawning?

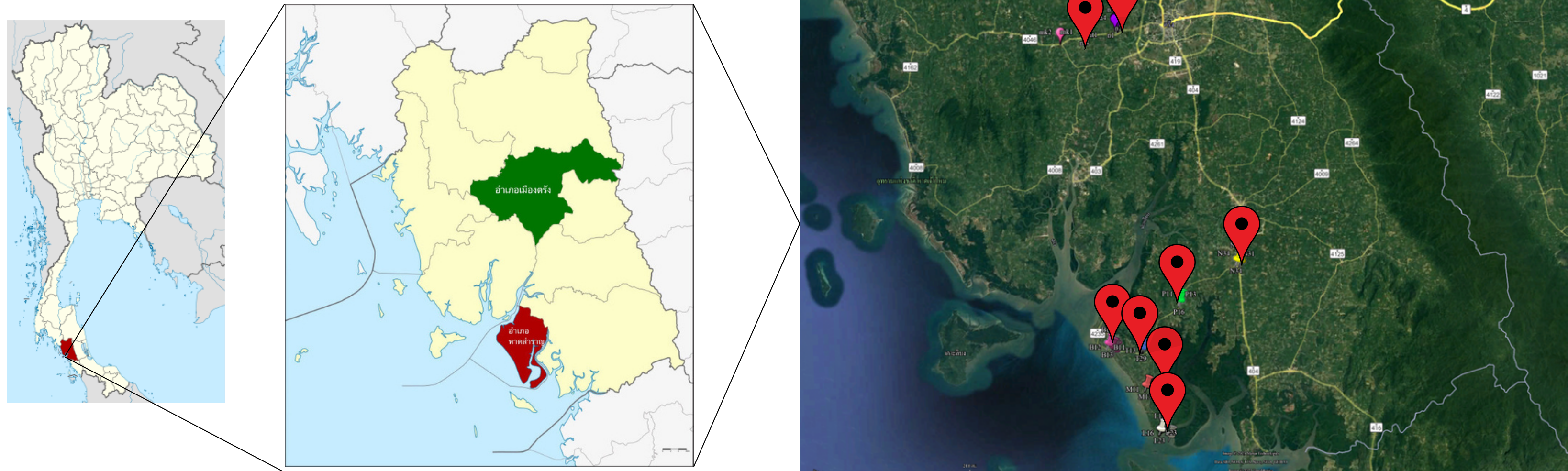
3

In the area of Trang Province, is there a risk of dengue fever or not?



METHODOLOGY

STUDY SITE



Specify the study points : covering 2 districts, Muang District and Hat Samran District, amounting 8 points, each point covering 3 households, 24 households in total.



Procedure for collecting mosquito data



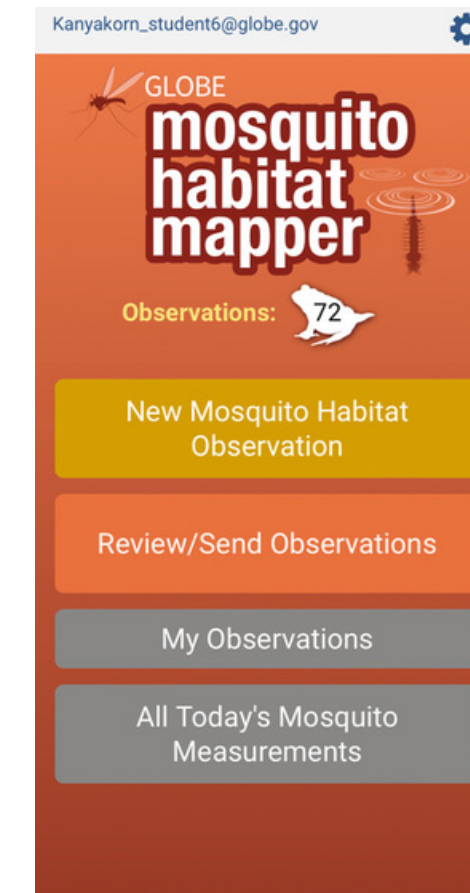
01

Explore the mosquito abundance areas using the Mosquito protocol



02

Classify the types of mosquitoes and the types of containers that are breeding grounds for mosquitoes.



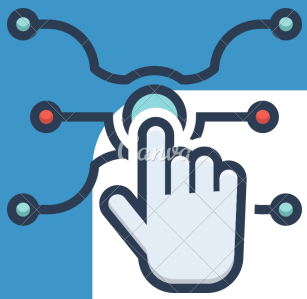
03

Send data into the Mosquito habitat mapper



04

Analyze data

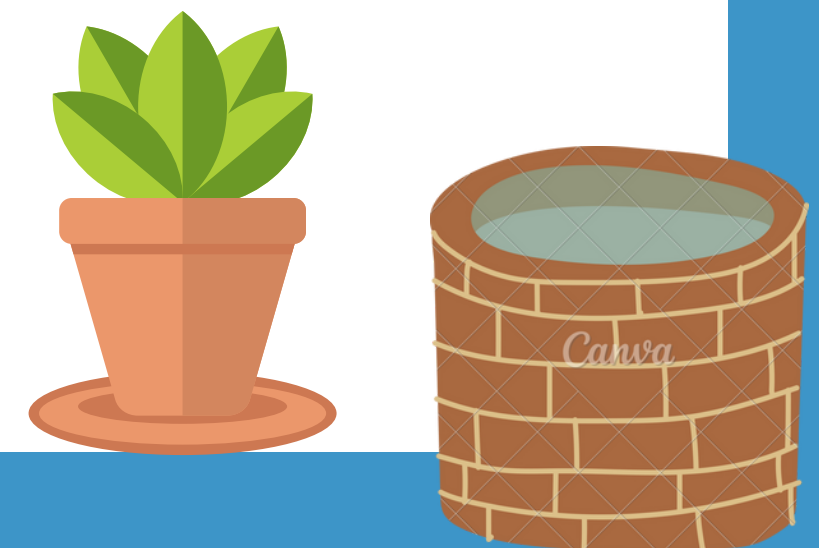


ANALYSIS OF MOSQUITO INDEX

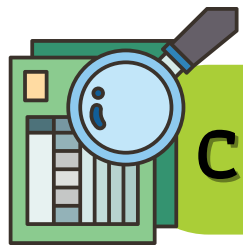
$$\text{House Index [HI]} = \frac{\text{Number of houses where mosquito larvae are found} \times 100}{\text{Total number of houses surveyed}}$$

$$\text{Container Index [CI]} = \frac{\text{The number of containers where mosquito larvae were found} \times 100}{\text{Total number of survey containers}}$$

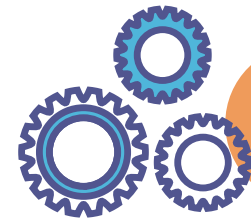
$$\text{Breteau Index [BI]} = \frac{\text{The number of containers where mosquito larvae were found} \times 100}{\text{Total number of houses surveyed}}$$



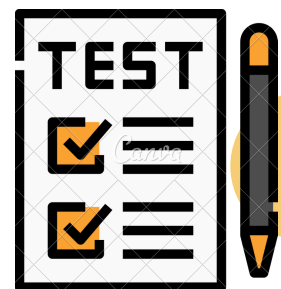
How to create and develop innovation



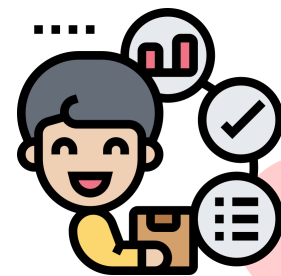
Collect information and ideas to solve problems.



Design/innovation development

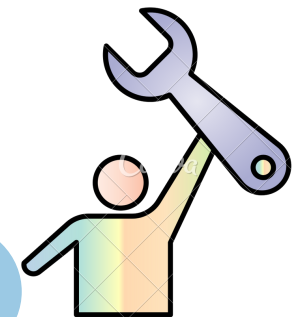


Test innovation



Present innovation

Modification and improvement



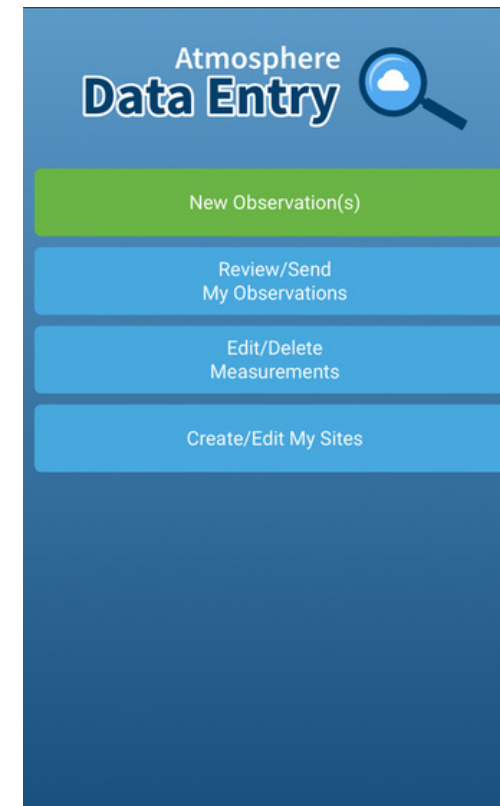
3 times

STUDY OF WEATHER DATA



01

Collect weather data
[rainfall, relative humidity,
temperature, wind speed]



02

Send data into the
Atmosphere Protocol



03

Analyze data



RESULTS

Part 1 : Risk assessment of dengue fever in Trang Province



● $HI = 83.33$

● $CI = 62.58$

● $BI = 510$

$HI > 50$, $CI > 10$, $BI > 50$
shows a very high risk [WHO,2008]

BREEDING HABITATS OF AEDES MOSQUITO FOUND



garbage



tire



the tire track



big earthen jar



plastic container



plant saucer



monk's alms-bowl

Part 1 : Risk assessment of dengue fever in Trang Province

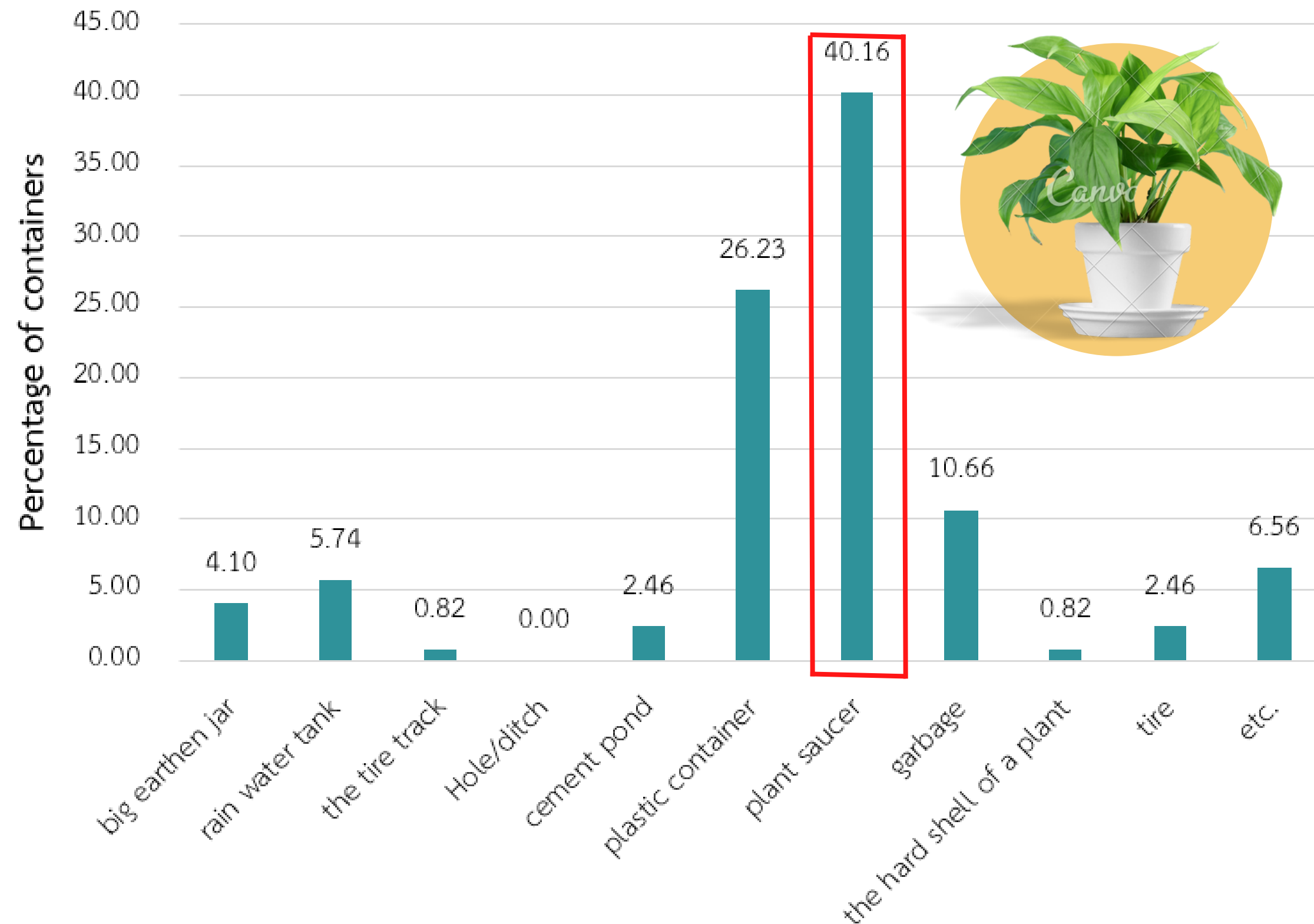


Chart 1 : Type of container and percentage of mosquito larvae found.

Weather data during innovation creation and development

Weather that may affect mosquito transmission factors is during December 2022 to January 2023

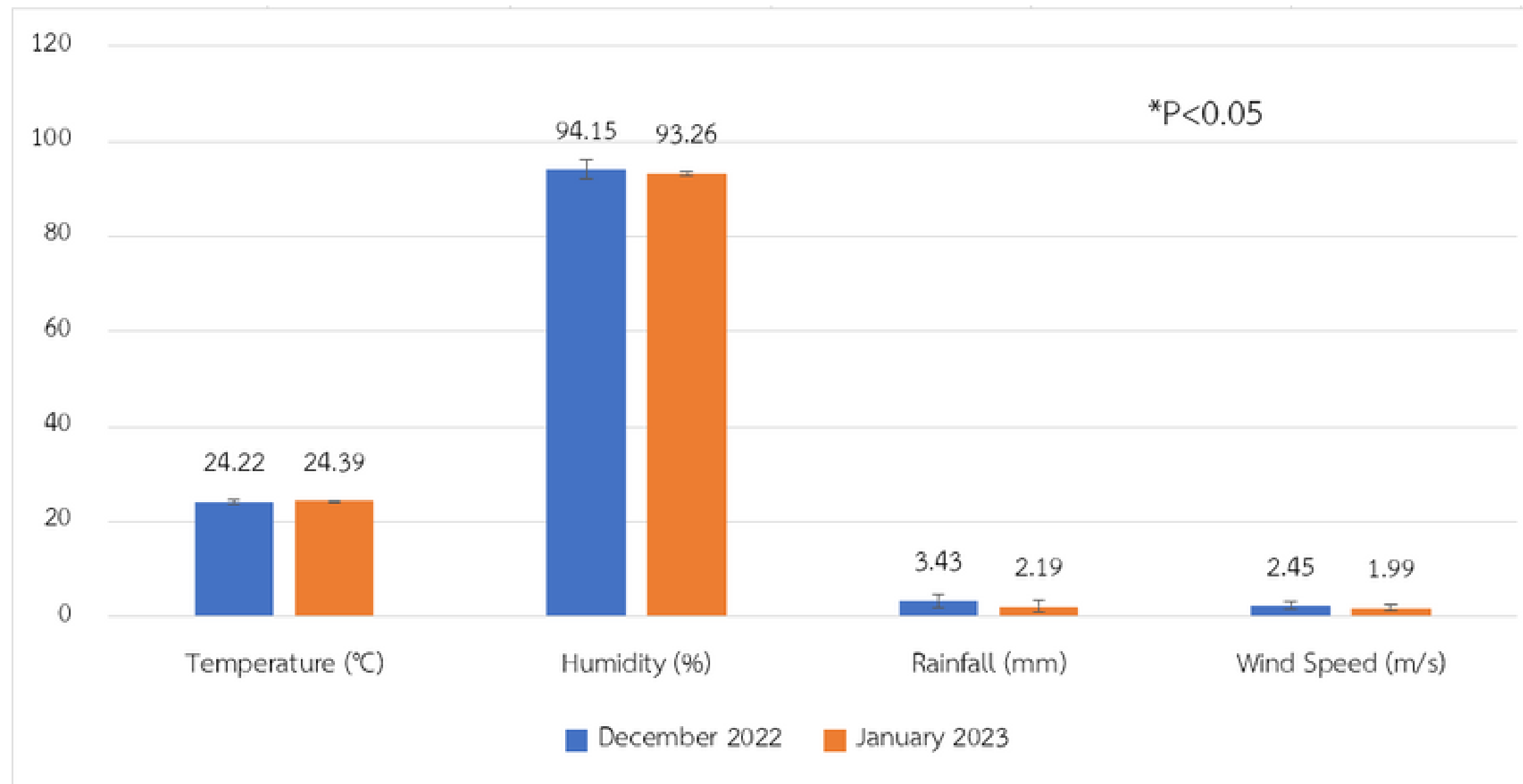
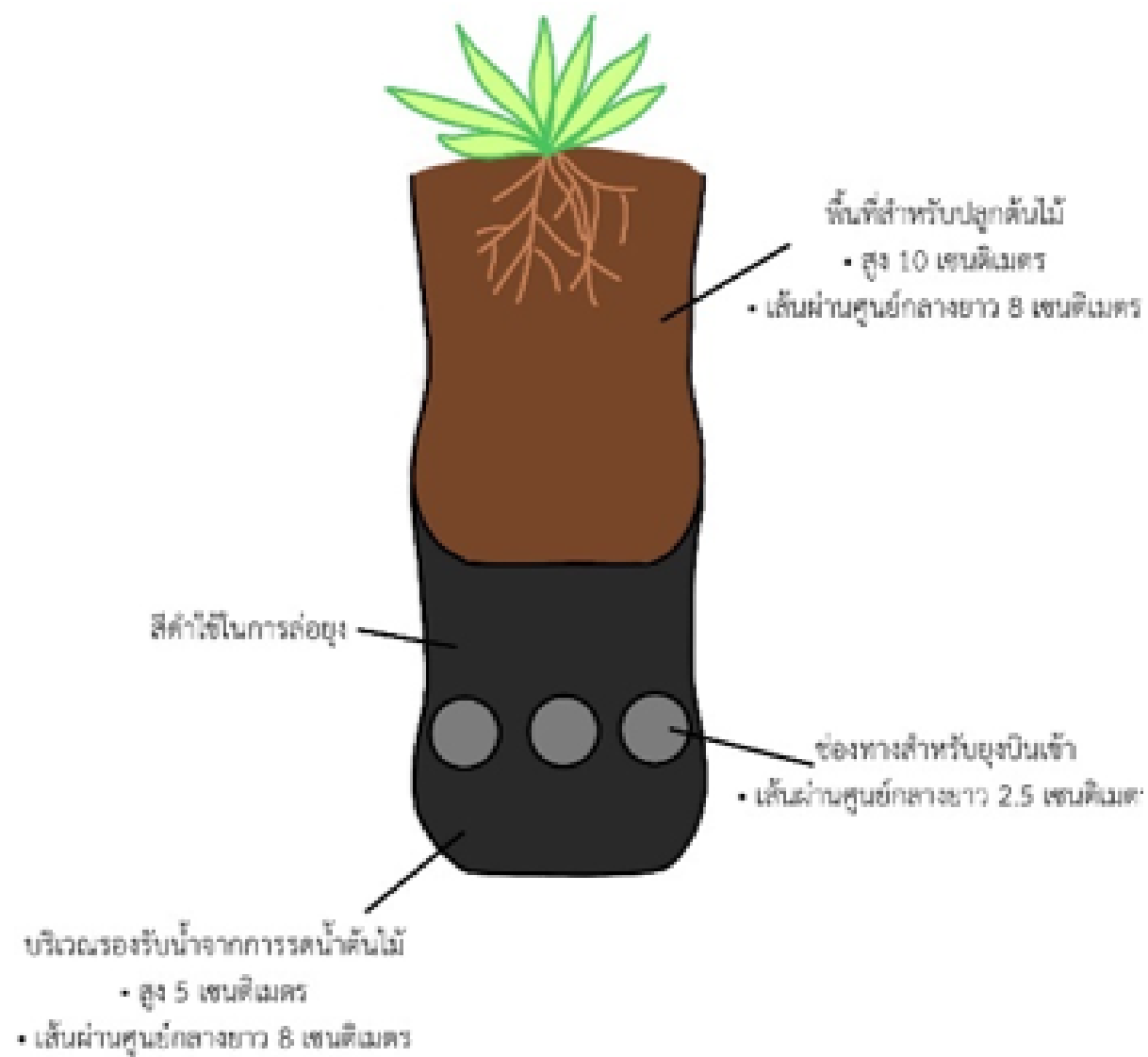


Chart 3 : Weather data during December 2022 to January 2023

Part 2 : Creation and development of innovation

Mosquito trap plant pot ver.1

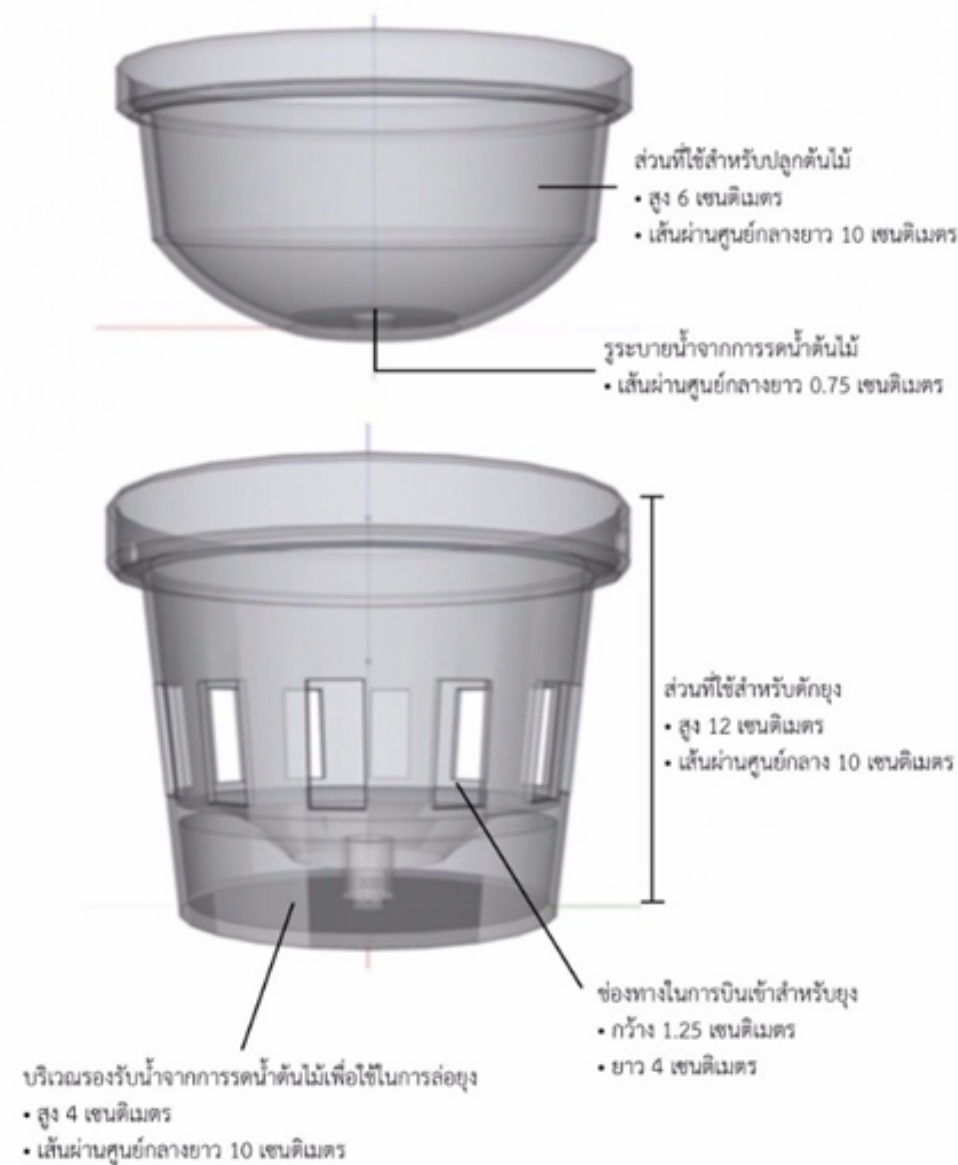


findings

- 1 There are a few mosquitoes in the trap
- 2 Can't trap adult mosquitoes
- 3 The material used is weak

Part 2 : Creation and development of innovation

Mosquito trap plant pot ver.2

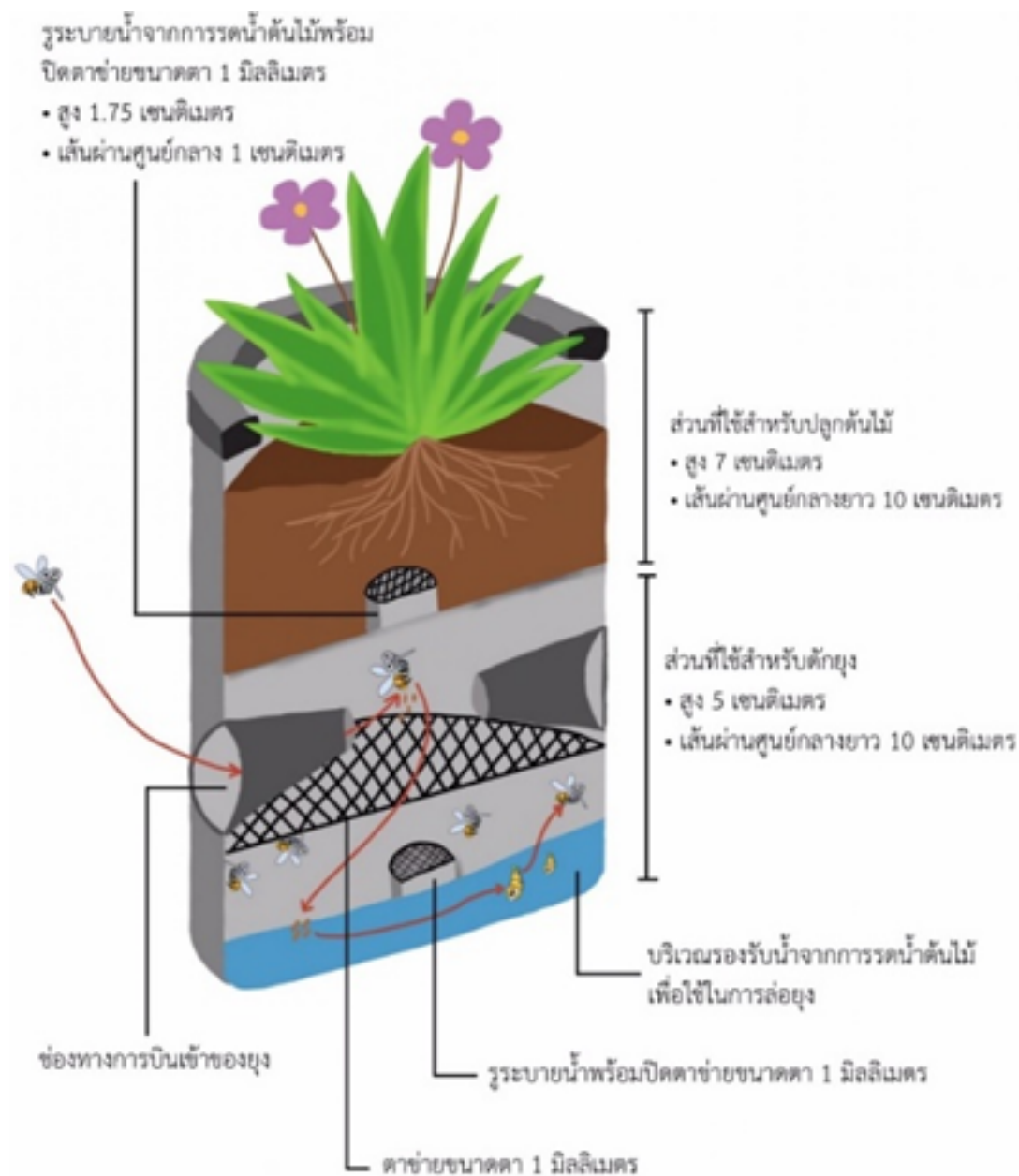


findings

- 1** An adult mosquito can fly out
- 2** Soil and sediment fall into the water, and it may also be a breeding ground for other mosquitoes.
- 3** Mosquito eggs that fall into the water, when grow as adults. able to fly away

Part 2 : Creation and development of innovation

Mosquito trap plant pot ver.3



Suggestion

1

Create a beautiful pot shape based on the user's requirement , but the internal structure remain the same.

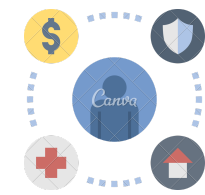


Table 3 : The number of mosquitoes trapped in Mosquito trap plant pot version 1, 2, 3

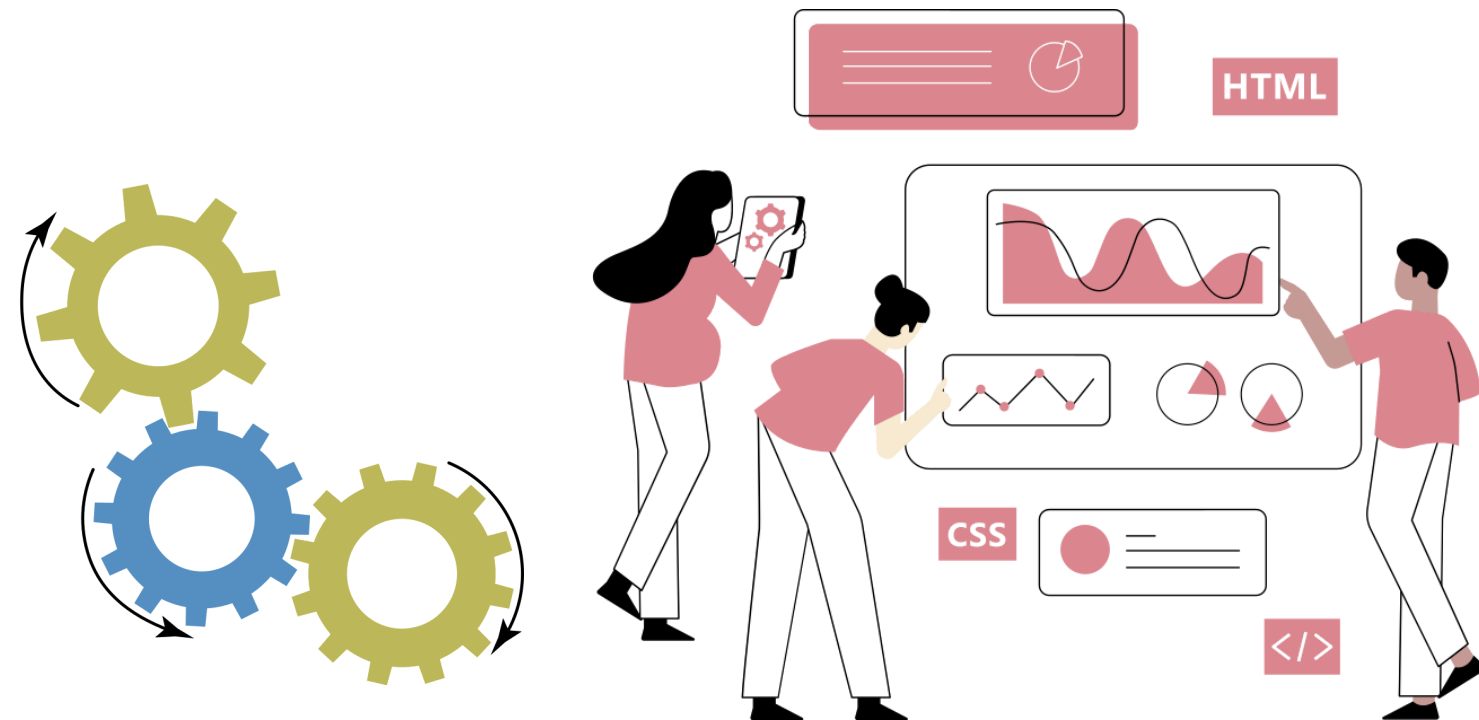
study site	The number of mosquito larvae found								
	Plant pot version 1			Plant pot version 2			Plant pot version 3		
	larvae	pupa	adult	larvae	pupa	adult	larvae	pupa	adult
student dormitory	5	0	0	10	2	0	16	5	2
teachers' residence	7	1	0	13	4	1	27	8	3
school building	4	0	0	7	0	0	12	2	1
Total	16	1	0	30	6	1	55	15	6
	17			37			76		

CONCLUSIONS

- The area in Trang province is at high risk of dengue fever, as the HI value is 83.33, the CI is 62.58, and the BI value is 510, which is higher than the standard set by the World Health Organization [WHO, 2008].
- An innovative prototype was created from a survey of the types of mosquito breeding sites in 24 households. It was found that plant pot with saucers were the most common breeding sites for mosquitoes.
- The innovation we created and developed can completely trap mosquitoes.



BENEFITS

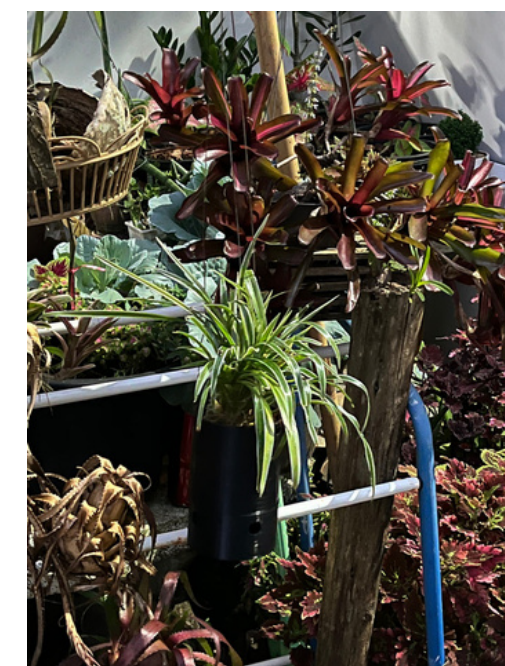


Use the knowledge gained to develop innovations to reduce the spread of dengue fever.



Use the information obtained to create a control measure. surveillance of the spread of mosquito-borne diseases.

Impact to community



ACKNOWLEDGEMENT



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Trang Hospital

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THANK

YOU

Monitoring innovation

