The Students’ Experience for the GLOBE International Science Science Symposium Preparing

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GLOBE Project

Grade 10 : 1st Semester

Project proposal & Project pre-study

We are already progress.....Project planning
Project experiment

The Effect of Climate Change on Dengue Incidence in Muang Nakhon Si Thammarat, Thailand

Mosquito lavea data
weather data
What is The GLOBE International Virtual Science Fair?

How and What to Submit:
- Report.
- Presentation Clip.

Scoring:

Timeline:
The Effect of Climate Change on Dengue Incidence in Muang Nakhon Si Thammarat, Thailand

Data analysis and conclusion

Scientific methods were checked by the teacher and GLOBE trainer

Paper Template : Research report

Seasons and Climatic Factors Affecting Dengue Cases in Muang Nakhon Si Thammarat, Thailand

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ABSTRACT

This study investigated climatic factors affecting dengue cases and house index in Nakhon Si Thammarat, Thailand. We randomly selected 32 households, and collected mosquito larvae from indoor and outdoor water containers. We identified Aedes aegypti and Ae. albopictus larvae up to species level under microscope. We compared dengue cases between wet and dry seasons during 2011-2015. The results showed that dengue cases in the wet season were higher than in the dry season. Relative humidity was positively correlated with dengue cases in this area. From the mosquito larvae data collected in March 2016, Muang Nakhon Si Thammarat had house index of 59.38% for Ae. aegypti larvae and 62.50% for Ae. albopictus larvae. This indicated that Muang Nakhon Si Thammarat is the dengue high risk area according to the WHO standard for dengue risk area.

Keywords: dengue cases, atmospheric measurement, GLOBE, Thailand, Nakhon Si Thammarat
The effect of climate change on dengue incidence in Muang Nakhon Si Tammarat.

Seasons and Climatic Factors Affecting Dengue Cases in Muang, Nakhon Si Thammarat, Thailand

[Video link] https://www.youtube.com/watch?v=QrnAzPnd3RQ
The GLOBE International Science Fair Poster

Seasons and Climatic Factors Affecting Dengue Cases in Muang Nakhon Si Thammarat, Thailand

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Abstract

This study investigated climatic factors affecting dengue cases and house index in Nakhon Si Thammarat, Thailand. We randomly selected 32 households, and collected mosquito larvae from indoor and outdoor water containers. We identified Aedes aegypti and Aedes albopictus larvae up to species level under microscope. We compared dengue cases between wet and dry seasons during 2011-2015. The results showed that dengue cases in the wet season were higher than in the dry season. Relative humidity was positively correlated with dengue cases in this area. From the mosquito larva data collected in March 2016, Muang Nakhon Si Thammarat had house index of 59.38% for A. aegypti larvae and 62.50% for A. albopictus larvae. This indicated that Muang Nakhon Si Thammarat is the dengue high risk area according to the WHO standard for dengue risk area.

Climatic data: PCCNST Weather Station
Dengue cases data: NST Provincial Health Office

Our Process

Study the affect of climatic factor to the number of dengue cases in Muang Nakhon Si Thammarat, Thailand.

Figure 3. Monthly dengue cases in wet and dry seasons in Muang Nakhon Si Thammarat, Thailand for January 2011-January 2016.

Data collection

- 42 houses/subdistrict
- 16 subdistricts
- Total 32 households
- Collected all mosquito larvae from both indoor and outdoor containers
- Placed mosquito larvae in plastic bags
- Preserved them in 70% alcohol
- Identified mosquito larvae app. under microscope

Data analysis

House Index (HI) = \( \frac{\text{No. of houses positive for Aedes larvae}}{\text{No. of houses inspected}} \) \times 100

Figure 5. The number of Aedes larvae collected at each household

Conclusion

- Relative humidity strongly correlated with dengue cases (P<0.05).
- This indicates that mosquito eggs tend to be more viable in more humid area.

As WHO classified dengue risk area with HI greater than 5%. We got 59.68% HI. So we are thinking about launching some campaign to raise some awareness on mosquito larvae in the community.
Acknowledgement

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Thank you