Studies breeding places of *Aedes aegypti* and *Aedes albopictus* in dengue endemic Padang area

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**Abstract.** Suspect vector of Dengue Haemorrhagic Fever (DHF) and Chickungunya transmitted by *Aedes aegypti* and *Aedes albopictus* in container as potential breeding places. This study used a descriptive design, data collection in Kuranji, Nanggalo and Padang Timur and Lubuk Begalung district for 5 months in Padang with populations in house as many as 400 larvae index for density analysis to interpretation. The results container at risk of becoming breeding places of *Aedes aegypti* in Padang Timur districts 14.25%, and *Aedes albopictus* in Kuranji 20.75%. 3 classification area analysis are *Aedes aegypti* and *Aedes albopictus* in the container in the form of supervision that more routine in Nanggalo compared Kuranji and Lubuk Begalung well as in Padang Timur as well as control by getting rid of that is rare in Kuranji and Padang Timur while in Nanggalo and Lubuk Begalung category often get rid of the landfill. Updating data analysis results in the form of survey results, mosquito density monitoring strategy regularly and periodically by the community with assistance by health workers as well as the risk of transmission as well as the anticipation of Extraordinary Events and prevention of dengue outbreaks.

1. **Background**

Studies potential breeding in surveillance and epidemiological analyzes provide visualization as well as an ecologically, revealing trends, dependencies and inter-relationships, including the risk of diseases transmitted by *Aedes aegypti* and *Aedes albopictus* \([1,2,3]\).

The mosquito's infectious disease by the *Aedes aegypti* and *Aedes albopictus* is still a public health problem that has both social and economic impact. \([2,4]\) Social losses that occur, among others, caused panic in the family to the death of family members and reduced life expectancy. The immediate perceived economic impact on the patient is the cost of treatment, while the indirect is the loss of working time, school time and other costs incurred in addition to treatment such as transportation and accommodation during patient care. \([2,4,5,6]\)

The prevalence of incidence and risk of DF and Chickungunya disease is transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes in Padang city based on Padang City Health Office (DKK) report that Padang is an endemic area of dengue fever and sporadic that is almost encountered in 11 districts. This condition provides the spread of dengue cases that are still greater than the national Case Fatality Rate (CFR) that must be below 1%.
Human factors contributed to the growth of mosquito populations, mostly large cities in Indonesia, has grown rapidly with all its implications, such as the growth of slums due to urbanization, limited water supply, and unprofessional environmental management, transmission caused by many potential places as nests used Ae mosquitoes. aegypti and Aedes albopictus to lay eggs such as tanks and water Tubs in WC, buckets, Drum, Bird food place, Overflow Refrigerator and Dispenser and other containers. [2,6,7]

Control programs existing are known as 3 M movement, albization and Fogging but this condition not perceived yet as a need to protect themselves and the family against the risk of transmission, it is necessary to share information and knowledge about breeding places, to find larvae, able to recognize larva and estimate the density of larvae at each community water reservoir [1,3,6].

Ecological analysis is expected to be able to study the potential of the environment to be breeding places mosquitoes and design form of control that is easily applied by the community. The whole process of surveillance and epidemiological analysis, provides a means for visualizing and analyzing epidemiological data, showing trends, dependencies and risk-related diseases including those transmitted by Aedes aegypti and Aedes albopictus mosquitoes and other mosquitoes as Suspect vectors. [1,4,7,8,9]

2. Materials and Methods
Observations and surveys breeding larvae in August to December 2017. This study population as potential house mosquito breeding Aedes aegypti and Aedes albopictus. Followed by the field of data processing into the data with computer software, through the determination of the risk of transmission and dignity proportionally qualitative namely: CI <11% Free Larvae and CI> 11% area is classified density by Index Larvae.

3. Result
Density of Aedes aegypti larvae and Aedes albopictus. The research results in Table 1 and Table 2 described the density of Aedes aegypti and Aedes albopictus based Container Index shows the number density of more than 10% so the value density Low was given a scoring of 1, the value of the given weight 2 and the highest value.

| Table 1. Density of Distribution Aedes aegypti Larvae Breeding by Container Index in Padang 2017 |
| --- | --- | --- |
| No. | District | Number | Container Index (%) |
| 1. | Kuranji | 265 (+35) | 13,20 |
| 2. | Nanggalo | 328 (+40) | 12,19 |
| 3. | Padang Timur | 456 (+65) | 14,25 |
| 4. | Lubuk Begalung | 368 (+45) | 12,22 |

From table 1, explained that the highest density of Aedes aegypti larvae is in the Padang Timur sub-district of 14.25%

| Table 2. Density of Distribution Aedes Albopictus Larvae Breeding by Container Index in Padang 2017 |
| --- | --- | --- |
| No. | District | Number | Container Index (%) |
| 1. | Kuranji | 265 (+55) | 20,75 |
| 2. | Nanggalo | 328 (+50) | 15,24 |
| 3. | Padang Timur | 456 (+45) | 15,04 |
| 4. | Lubuk Begalung | 368 (+45) | 12,22 |

From table 2, explained that the highest density of Aedes albopictus larvae is in the Kuranji sub-district of 20.75%
Characteristics of breeding places with mosquito larvae are from 1.417 containers / domestic water reservoirs positive larvae as many as 195 containers with average Density 13.76%. The highest density on the Aedes aegypti larvae in Padang Timur District (14.25%) and Aedes albopictus mosquito larvae in Kuranji district (20.75%).

Trend analysis of density of Aedes aegypti larvae and Aedes albopictus larvae research results can be explain the distribution of the density of area a high density is in Padang Timur district, whereas in Nanggalo, Kuranji and Lubuk Begalung district with the density being in the community landfill. Compared with Kuranji district. The results are consistent with research that says that the area affected by dengue fever in general is a district is high populated. The houses that are close together facilitate the transmission of disease-based breeding places domestic water reservoirs. [2,6,7,8]

4. Conclusion
The density of Aedes aegypti larvae in Padang Timur District 14.25% and Aedes albopictus in Kuranji 20.75%. The distribution of the density of Aedes aegypti larvae in breeding places in Padang Timur district and Aedes albopictus in Kuranji with the highest indices and weights classification.

Larvae density monitoring is conducted periodically, regularly and periodically with the recommendation of at least every month. Update Survey with Periodic monitoring which give container index by Health and Research Program Vectors to be integrated

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