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# EFFORTS TO CONTROL DENGUE VECTORS BY ERADICATING MOSQUITO NESTS AND PLANTING ZODIA PLANTS AS MOSQUITO REPELLENTS IN THE WORKING AREA OF THE SAKO HEALTH CENTER IN PALEMBANG CITY IN 2023

**Priyadi [1], Kamsul [2]**
Politeknik Kesehatan Kemenkes Palembang
Email: [1] priyadi@poltekkespalembang.ac.id

**Abstract**

The current mosquito nest eradication program (PSN) is not optimal, so alternative strategies are needed to overcome the problem. One of them is increasing efforts to eradicate dengue fever vectors, namely Ae. aegypti mosquitoes are the main vectors and Ae. Albopictus is the companion vector. Both types of mosquitoes are found throughout Indonesia, living optimally at altitudes above 1,000 m above sea level, but according to some reports can be found in areas with altitudes up to '1,500 m asl.m'. Aedes mosquitoes are native to Brazil and Ethiopia, and their adult stage is on average smaller than other types of mosquitoes. The efforts made are to socialize and cultivate zodiac plants as mosquito repellent, thus having an impact on reducing cases of dengue hemorrhagic fever (DHF) in the Sako Health Center area which continues to increase every year. The location of community service activities is the working area of the Sako Health Center where the incidence of dengue fever is quite high. Intended to serve the community, the methods used are by existing theories and research findings, namely Puskesmas, and officers in their target locations make efforts to plant/utilize zodiac plants to reduce the risk of disease cases—dengue hemorrhagic fever (DHF).

**Keywords:** Dengue Hemorrhagic Fever, Zodia Plant

## INTRODUCTION

Dengue hemorrhagic fever is a major public health problem in tropical and subtropical regions of the world. The disease is the fastest-spreading mosquito-borne virus, with global incidence increasing 30-fold in the last 50 years. Generally, this disease attacks children under the age of 15 years, but now the sufferers also become adults. Dengue fever has become the most common vector infectious disease and is increasing rapidly worldwide. Worldwide, 2.5 billion people live in dengue-endemic countries and are at risk of dengue fever, 1.3 billion people live in dengue-endemic areas (WHO, 2020). According to data from the World Health Organization (WHO), several countries are at risk of dengue fever, especially Southeast Asia. As a dengue-endemic area, it accounts for more than half of the global disease burden. in particular, 5 countries (India, Indonesia, Myanmar, Sri Lanka, and 202 Thailand), which are regions that account for more than half of global cases, are among the 30 most endemic


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countries in the world (WHO, 2020). The number of cases in Indonesia is 76,802 cases, and the number of deaths is 785 cases. The incidence rate of dengue fever is 42.35 per 100,000 population, while the case mortality rate is 2.62% (Ministry of Health, 2020).In 2020, there were 9,675 cases of dengue fever reported in South Sumatra with an incidence or incidence rate (IR) of 45.67/100,000 population, while the death rate or in case fatality (CFR) was 0.81%, with some cases of dengue fever 47. death (South Sumatra Health Office, 2020 ). The number of dengue fever cases in Palembang City in 2018 was 642 cases, in 2019 it increased to 697 cases, and in 2020 it again decreased with the number of cases detected as many as 435 cases. Although in 2020, dengue cases decreased compared to the previous year, this is due to vigilance against the surge in cases in the previous year which needs to be increased. Dengue transmission in Palembang tends to be influenced by population density, population mobility, urbanization, economic growth, community behavior, climate change, environmental sanitation conditions, and the availability of clean water. Based on the Palembang City Health Profile in 2020, the incidence of dengue fever was 435 cases and then increased in 2021 the incidence of dengue fever to 450 cases, among them, there were 3 Puskesmas with the highest number of cases, namely Puskesmas Puskesmas Sako 18 cases, and Puskesmas Boom only 13 cases and Puskesmas Sabokingking 16 cases there are also several Puskes with the smallest cases, namely Puskesmas Sosial 9 cases, Puskesmas 4 Ulu 4 cases, Puskesmas Alang-alang lebar 9 cases, and Puskesmas Taman Bacaan with 9 cases (Palembang City Health Office 2021). In 2022, dengue cases reached 908 cases and there were 15 deaths. Analysis of the Situation of the Location of Community Service is as follows;

1) The working area of the Sako Health Center is the highest area of dengue incidence in 2021 and 2022.
2) The community has not implemented initial preventive behavior with environmental arrangements that can be a breeding ground for *Aedes aegypti mosquitoes* so that Mosquito Nest Eradication (PSN) activities are still minimal.
3) There is no alternative effort to control Dengue Hemorrhagic Fever (DHF) vectors by utilizing mosquito-repellent plant species.

The priority problems of observations are;

1) Puskesmas Sako has not maximally socialized and provided motivation and examples about protecting the environment in the context of Mosquito Nest Eradication (PSN) so that it does not become a mosquito breeding ground
2) Limited monitoring carried out by officers and health cadres on environmental conditions, especially in environmental conditions that can support the presence of *Aedes aegypty larvae and mosquitoes*.

Purpose

1) Provide knowledge and motivate health officers and cadres that the importance of carrying out Mosquito Nest Eradication (PSN) routinely is not only during cases of Dengue Hemorrhagic Fever (DHF).
2) Provide examples of alternative efforts to control Dengue Hemorrhagic Fever (DHF) cases by utilizing mosquito-repellent plants and larva-eating fish to health cadres who will be agents for the community in the implementation in the field.

Activity Benefits

1) It is expected that there will be increased monitoring by officers and health cadres on Mosquito Nest Eradication (PSN) activities as the most effective effort in overcoming Dengue Hemorrhagic Fever (DHF) vectors.
2) It is hoped that health cadres can motivate the community to increase efforts to control Dengue Hemorrhagic Fever (DHF) through prevention efforts by eradicating mosquito nests (DHF) and other alternative efforts by planting mosquito repellent plants in homes and raising larva-eating fish in water reservoirs.

## IMPLEMENTATION METHOD

The implementation of activities is carried out in the working area of the Sako Health Center in Palembang City which will be held from August 27 to November 15, 2023. Activities are carried out in a planned manner from the preparation of tools and materials, to licensing to puskesmas, sub-districts, and sub-districts. Briefing health cadres on efforts to control Dengue Hemorrhagic Fever (DHF) Vectors by planting zodiac plants as mosquito repellents in residential areas as an alternative effort by not abandoning basic efforts to eradicate mosquito nests (PSN)

## RESULTS AND DISCUSSION

The results of the activity are in the form of distributing and practicing zodia plant planting and distribution of larval fish to health cadres to be distributed and planted by the community, especially in locations where dengue cases often occur in the hope that this activity can reduce the incidence of dengue cases and reduce the risk of death from dengue disease that occurs every year.

Briefing and Explanation Document on zodia plants as mosquito repellents and larva-eating fish to cadres of Sako Health Center Palembang City.


Documentation of the stages of distribution of zodia plants as mosquito repellents to health cadres of Sako Health Center Palembang City

## CONCLUSION

Community service activities by planting zodia plants and raising larvae-eating fish are alternative efforts to reduce the breeding of *Aedes aegypti mosquitoes* in the larval phase (larvae). They will contribute to increasing the larvae-free rate (ABJ) and reducing the potential incidence of Dengue Hemorrhagic Fever (DHF) cases.

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