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APPLICATION OF LETHAL OVITAP AS A MEDIA FOR CONTROLLING DHF LARGE VECTORS IN THE WORKING AREA OF SUKARAMI HEALTH CENTER, PALEMBANG CITY IN 2022

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Abstract

The Mosquito Nest Eradication Program (PSN) is currently not optimally implemented in controlling Dengue Fever vectors, so an alternative strategy is needed to overcome it, especially in the working area of the Sukarami Health Center which has an incidence rate of Dengue Fever in 2022 of 21 cases with 2 deaths. One of the efforts carried out is a community-based larval survey that is sustainable with efforts to apply lethal ovitrap which can inhibit and break the developmental phase of the larvae. Activities carried out in the form of practice on how to make lethal ovitrap to cadres of larva monitors and the community directly. The larva monitors as an extension of the sanitarian/sanitation officer were given instructions on how to make lethal ovitrap, after which lethal ovitrap was made for the community whose family members were positive for Dengue Hemorrhagic Fever and the community around the house with a target of 105 houses with 10 jumantik and 2 lecturers as community administrators. and 10 students. From this activity, cadres of larva monitoring (jumantik) and the community were able to make lethal ovitrap and there was an increase in the larva-free rate (ABJ) after the application of lethal ovitrap which would reduce the breeding potential of Aedes aegypti mosquitoes in the larval phase. The results that have been achieved are 105 households surveyed by larvae and the practice of making lethal ovitrap by the community and cadres of larva monitors as an alternative effort in controlling larvae which can increase the larvae-free rate in the Sukarami Palembang Health Center area from 92.5% to 95%.

Keywords: Lethal Ovitrap, Larvae Survey, Larvae Free Rate.

INTRODUCTION

Dengue Hemorrhagic Fever (DHF) or Dengue Hemorrhagic Fever (DHF) is a disease caused by the dengue virus. The spread of the dengue virus is transmitted through mosquito bites. The main vector that plays the most role in the transmission of this disease is Aedes aegypti. This disease can cause epidemics and cause death in a short time. Until now, there is no medicine or vaccine for dengue. All places have a risk of contracting this disease because the transmitting mosquito (Aedes aegypti) is widespread throughout the country, except for areas with an altitude of more than 1000 meters above sea level. The most effective way of controlling DHF is environmental management, including planning, organizing, implementing, and monitoring community activities for modification or manipulation of the

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environment to prevent or reduce vector breeding and human-vector-pathogen contact. The DHF Mosquito Nest Eradication Program (PSN) as a strategic activity has not been optimally implemented so far, as evidenced by the high number of cases and IR in DHF endemic areas. This indicates that there is a breeding ground for Aedes aegypti mosquitoes that have passed the PSN program, which has been carried out by the community so far. Eradication of Aedes aegypti mosquito larvae can be done by:

1). Elimination of Mosquito Nests (PSN) with 3 M Physical eradication of mosquito larvae is carried out by eradicating mosquito nests through activities of draining, closing, and burying (3 M) places where water reservoirs and items filled with stagnant clear water are carried out. Eradication of mosquito nests is carried out at least once a week regularly.

a. Draining activities include draining and brushing the walls of water reservoirs (bathtubs, water tanks, ablution areas, WC/toilets, barrels, jars, drums, etc.) once a week or by changing the water in flower vases, bird drinkers, and traps. ants, and others once a week.
b. Closing activities are carried out by tightly closing water storage containers (jars, drums, barrels, etc.) so that mosquitoes cannot enter and breed. In addition, this can also be done by covering the bamboo or iron holes in the fence with soil or cement mixture.
c. Burying activities are carried out by burying, removing, and destroying used items that can collect rainwater such as used cans, used tires, used bottles, and so on.

2). Selective participation is the chemical eradication of mosquito larvae using larvicides. This selective participation is part of the Eradication of Mosquito Nests (PSN) or Periodic Larvae Monitoring (PJB) which can be carried out individually, by families, communities, and PJB officers to be a place that is difficult or impossible to drain. The way to carry out participation is by sprinkling 10 grams of larvicidal powder (abate/temephos/altocid) in a water reservoir filled with 100 liters of water every 2-3 months.

3). Raising larvae-eating fish Biological eradication of mosquito larvae is carried out by raising larvae-eating fish such as tinhead fish, guppies, tempalo fish, betta fish, and others.

Surveillance for Aedes aegypti is very important to know the distribution, population density, main larval habitat, risk factors based on time and place based on the spread of dengue, and the level of susceptibility to insecticides used to prioritize areas and seasons for vector control implementation. Such data will facilitate the selection and use of most vector control equipment and can be used to monitor their effectiveness. There are several methods available for detecting and monitoring populations of larvae and adult mosquitoes (MOH, 2005). Observation of the DHF vector is very important to determine the distribution, density of mosquitoes, the main habitat of the larvae, and the suspected risk of transmission. These data can be used to select appropriate vector eradication measures and monitor their effectiveness. The population density of Aedes aegypti mosquitoes can be determined by conducting mosquito surveys, egg-catching surveys, and larva surveys. The larva survey is carried out in the following way:

a. All places or vessels that can become breeding grounds for Aedesaegypti mosquitoes are examined to determine whether there are larvae.

b. Checking large containers such as bathtubs, crockpots, drums, and other water storage tanks. If at first glance or sight, you don't find any larvae, wait about 0.5-1 minute to make sure there are no larvae.
c. Check small containers such as flower vases/plant pots, and water/bottles where the water is cloudy, the water needs to be moved to another place. To check the larvae in a place that is a bit dark or the water is cloudy, use a flashlight.

One effort that needs to be developed is the use of Lethal ovitrap, a Dengue Hemorrhagic Fever (DHF) vector egg trap made from plastic vessels that have been added larvicide (temephos dose of 1 ppm) to kill the eggs and mosquito larvae trapped inside. The lethal form of the ovitrap is simple and easy to make with low production costs, enabling people to make and install this tool independently in their homes. Several analyzes of the existing situation in the community are as follows;

a. Sukarami District, especially Kelurahan Kebun Bunga, is a DHF endemic area.
b. Communities tend to have behavior that is not optimal regarding the concern and the existence of DHF vector breeding sites.
c. Not maximal coaching for larva monitoring cadres (jumantik cadres)
d. The larvae-free rate is relatively below the target of 92.5%

This community service activity is carried out to increase public awareness about the control of the Aedes aegypti mosquito vector by applying lethal ovitrap as a way to trap mosquitoes so that they nest in lethal ovitrap which has killing power against eggs and larvae so that mosquitoes cannot continue their life cycle. Making lethal ovitrap is simple and uses abate materials and leftover mineral water bottles packaged in such a way that it is easy for cadres and the community to do. This lethal ovitrap is an application of Tri Ramadhani et al's research at the Research and Development Center for P2B2 Banjarnegara which was able to increase the larvae-free rate by 14%. The purpose and benefits of this activity are to provide practical knowledge on how to make lethal ovitrap to cadres of larva monitors and the community as an effort to control the Aedes aegypti mosquito vector in the working area of the Sukarami Health Center which is endemic to Dengue Hemorrhagic Fever. The benefit of this activity is the increase in the larvae-free rate from 92.5% to 95% according to the target of the Ministry of Health and WHO, in addition to this it can also improve the ability of cadres of larva monitors in controlling Dengue Hemorrhagic Fever.

IMPLEMENTATION METHOD

The activities were carried out in 2 (two) sub-districts in the working area of the Sukarami Health Center in Palembang City, namely Kebun Bunga Village and Sukarami Village which were carried out from 27 August to 20 October 2022 in 105 community houses including 21 houses with positive Dengue Hemorrhagic Fever based on data from the puskesmas. Activities are carried out in a planned manner from the preparation of tools and materials and permit to the puskesmas, sub-district, and village heads. Training on making Lethal Ovitrap for larva monitors was carried out at the puskesmas and training on lethal ovitrap for the community was carried out directly in homes when conducting larva surveys and application of lethal ovitrap. The indicator of success is the ability of jumantik cadres and

the community in making lethal ovitrap and implementing it in their respective homes accompanied by jumantik cadres and activity executors (lecturers and students). This activity can be evaluated by observing the presence of lethal ovitraps that have been made/applied at home during the training and larva monitoring and 3 weeks after that monitoring is carried out again by filling out the larva monitoring/survey form by calculating the larva-free rate (number of houses found larvae/number of houses inspected). X 100%)

RESULTS AND DISCUSSION

The results of the activity were in the form of practicing how to make lethal ovitrap for jumantik cadres at the Sukarami Health Center, then practicing for people who have family members with DHF incidents as well as monitoring/surveying larvae in homes in the working area of the Sukarami Health Center. Of the 105 houses that were visited and given practice on how to make lethal ovitrap, the larvae-free rate was observed from 105 houses after the application of lethal ovitrap was carried out. The results show an increase in the larva-free rate (ABJ) after the application of Lethal Ovitrap, from 92.5% to 95% (according to national targets and WHO targets) and this will increase efforts to control the Aedes aegypti mosquito vector in the larval phase in the community.

Documentation of Lethal Ovitrap Making Training for Jumantik Cadres at the Sukarami Health Center in Palembang City.

Documentation of Activities in Community Settlements

Table 1 Data on the results of activities

Before the application of Lethal Ovitrap	After the Application of Lethal Ovitrap	Information
ABJ = 92,5 %	ABJ = 95 %	There has been improvement and suitability of achievement targets after the implementation of Lethal Ovitrap
Jumantik cadres and family members in 105 houses did not know Lethal Ovitrap	Jumantik cadres and family members in 105 homes were able to make Lethal Ovitrap	There is an increase in information and the ability of jumantik cadres and the community.

CONCLUSION

Community service activities with the application of lethal ovitrap as an alternative effort to reduce the breeding of Aedes aegypti mosquitoes in the larval (larval) phase can increase the larva-free rate (ABJ) and reduce the potential for dengue fever as well as provide information and skills to cadres of larva monitors and the public about the application of Lethal Ovitrap.

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