

EFFECT OF LARVAE DEATH OF AEDES AEGYPTI ON THE DECOCTION OF THE LEAVES OF LEMON GRASS LEAVES

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ABSTRACT

Dengue hemorrhagic disease is a vector-based disease. Transmission by *Aedes aegypti* mosquito larvae. Handling by deciding the vector life cycle, by killing *Aedes aegypti* larvae, to eradicate *Aedes aegypti* larvae, with natural ingredients such as lemon grass (*Andropogon nardus* L) which can be used as mosquito repellent. This study aims to determine Effect of larvae death of *aedes aegypti* on the decoction of the leaves of lemon grass leaves at a water reservoir. The research location in Central Curup Village is the number of surveyed houses as many as 36 water reservoirs. Observational research, cross sectional study design. Survey larvae by means of single larva method. Survey data were analyzed using chi-square test. The results almost almost all 29 (80.6%), from 36 *Aedes aegypti* larvae died in 50 ml stew of lemongrass leaves water in under 2 minutes. Chi-square analysis obtained value $P = 0.04 < \alpha 0.05$, means there is a statistically significant relationship between decoction of serai wangi leaves on larva larva *Aedes aegypti*. Dimana value OR = 4.103 which means the influence of decoction of lemon grass leaves on the death of larvae *Aedes aegypti* more , 4.10 times, through the activity of getting used to boil the leaves of citronella and pour into the water reservoir as needed.

Keyword: Leaves of lemon grass, *Aedes aegypti* larva.

PRELIMINARY.

Aedes aegypti larvae if not observed will continue to develop into adult mosquitoes, if mosquitoes contain *Aedes aegypti*, can cause dengue hemorrhagic fever (DBD) in humans who sucked his blood by the mosquitoes.

DHF is a health problem. DHF transmission is determined by the presence of *Aedes aegypti* mosquito larvae. Effective way to overcome DHF by deciding the life cycle of DHF vector, by killing the presence of *Aedes aegypti* mosquito larvae, which has been using fogging, abate powder and others that have side effects on the environment.

Transmission of dengue disease by *Aedes aegypti* mosquito larvae. Overcoming it with, decides the vector life cycle, by killing *Aedes aegypti* larva, which has been using fogging, abate powder, which has side effects on the environment. Researchers are looking for a safe and effective natural larvalid solution, as researchers see the vast amount of lemon grass planted by the people in the yard.

The use of excessive and repeated insecticides can cause undesirable impact on human health and environmental pollution, then one way to eradicate *Aedes aegypti* mosquito larvae, that is with natural materials as natural potential that exist in the community environment such as lemon grass (*Andropogon nardus* L) that can be utilized as mosquito repellent because it contains geraniol, methyl heptenone, terpen alcohol, organic acids and especially citronella as a spray mosquito coil

According to Aji Rustam Rochmat, (2017) There is the effect of lemongrass plants on the existence of larva larvae *Aedes aegypti* at the Water Reservoir. This study aims to determine the effect of larvae death of *aedes aegypti* with papaya leaf stew at the water reservoir. The research location in Central Curup Village is the number of surveyed houses as many as 36 water reservoirs. Observational research, cross sectional study design. Survey larvae by means of single larva method.

Survey conducted by researchers around the yard of the resident of Batu Galing Village, Curup Tengah Subdistrict, there are many serai wangi plants, when researchers observing the water reservoir there is not closed, it is feared to be the development of larva *Aedes Aegypti*, the presence of larva *Aedes aegypti* is very determining for control the development of dengue mosquito and larva *Aedes aegypti* and can be used as an indicator to determine the number of larvae free in a region needs to be socialized the use of decoction of lemon grass leaves to minimize the presence of larva *Aedes aegypti*. Based on the above data the authors examine about: " effect of larvae death of *aedes aegypti* on the decoction of the leaves of lemon grass leaves "

RESEARCH PURPOSES

This study aims to determine: effect of larvae death of *aedes aegypti* On the decoction of the leaves of lemon grass leaves at water reservoir.

METHOD

This type of research is a quasi experiment that is to know the conservation of boiled water decoction of leaves of citronella fragrance effective as repellent death *Aedes aegypti* larva. The research design used was Completely Randomized Design (RAL).

The experiment was done by concentration of boiled water 7 sheets of leaves of lemongrass leaves mixed with water as much as 50 ml, and the research location was done in the room of observation. The study was conducted in November 2017. The object of research is larva *Aedes aegypti*

MATERIALS AND HOW TO WORK

Materials and tools in this research use: Stove, gas, lighter, pot, water, measuring cup, fragrant leaf, larva filter, pipette, flashlight, white plate and stopwatch.

WAYS OF WORKING

Based on the results of experiments conducted experimental experiments by using stew 7 lemon grass leaves that have been cooled to the size of 50 ml, which is inserted 36 larvae mosquitoes into the decoction of decoction of lemon grass leaf, then observed for 5 minutes.

RESULTS AND DISCUSSION

Table . Effect Of Larvae Death Of Aedes Aegypti On The Decoction Of The Leaves Of Lemon Grass Leaves

Num ber	Flick	decoction of lemon grass leaves		Amount		P	OR	CI (95%)	
		F	%	F	%			Low er	Upper
1	Non-Aedes aegypti	7	19.4	9	12.5	0.04	4.10	0.7	21.3
2	Aedes aegypti	29	80.6	63	87.5		9		
Total		36	36	10	100				
				0					

Based on Table of the Leaves of Lemon grass Leaf, it is known that almost all 29 (80.6%) of 36 Aedes aegypti larvae (Ae) died in 50 ml stew of lemongrass leaves in less than 2 minutes. Based on Chi-square analysis obtained value $P = 0.04 < \alpha 0.05$. Then H_0 is rejected and H_a accepted which means there is a statistically significant relationship between the decoction of serai wangi leaves on the death of larva Aedes aegypti, value OR = 4.10 which means the influence of decoction of lemon grass leaves on the death of larvae Aedes aegypti (Ae) more, 4.10 times .4.4 Discussion of research.

Wardani Sukma (2009) concluded that the essential oil of leaves and stem of lemongrass, have activity to kill Aedes aegypti mosquito.

In line with the results of research Aji Rustam Rochmat, (2017) There is the influence of lemon grass to the existence of larva larvae Aeges aegypti at Water Reservoir

In line with the results of Aji Rustam Rochmat's research (2017), there is a significant effect

between the lemon grass and the presence of *Aedes aegypti* larvae in the watershed, where OR = 4,375. Suggestions for the community to cultivate lemon grass plants near water reservoirs, as an effort to prevent the presence of *Aedes aegypti* mosquito larvae. Curup Nursing Program. Poltekkes Kemenkes Bengkulu-Indonesia.

Agree with the research results Ancani Niluh Komang Sumi, (2016) the effect of Etanol Serai Wangi Extract (*Cymbopogon Nardus L*) as *Aedes aegypti* larvacida, more effective

Agree with research result Manurung Rofirma, et al (2012) that influence of resistance of citronella (*Cymbopogon nardus*) to *Aedes aegypti* mosquito bites is effective concentration which used as repellent minimal concentration 3%. The higher the concentration of lemon juice (*Cymbopogon nardus*), the better used as a repellent, it is recommended to the public to use the juice of lemon grass as a repellent with 3% concentration.

Mark.S.Fradin and Jhon.F, (2012) The IR3535-based repellent protected against mosquito bites for an average of 22.9 minutes. The citronella-based repellents we tested protected for 20 minutes or less. There was no significant difference in protection time between the slow-release formulation containing 12 percent citronella and the formulation containing 5 percent citronella (P=0.07) or the two formulations containing 10 percent citronella (P=0.16 and P=0.80). The repellent containing only 0.05 percent citronella provided less protection than the Skin-So-Soft mineral-oil-based moisturizer (Avon) (P<0.001). Repellent-impregnated wristbands, containing either 9.5 percent DEET or 25 percent citronella (by weight), protected the wearer for only 12 to 18 seconds.

Agreed with the results of research Nofyan Erwin, et al (2013) showed from 12 types of plants tested obtained 3 types of plants that have the potential to be developed as a source of biolarvasida Babadotan plants, kenanga flowers and white galangal rhizomes. From babadotan plants obtained the active fraction of the fraction of n-hexane and ethylacetate. From kenanga flowers obtained by active fraction of the fraction of n-hektan and ethylacetate, while from white galangal rhizome obtained by active fraction of n-hexane fraction.

Baldachino Fredic, Tramut Coline and Salem Ali, (2013) These results suggest that lemongrass oil could be used as an effective repellent against stable flies

In line with the results of Nur Arifin Maqfirah's research, (2014) showed that the extract of citronella fragrance (*Cymbopogon nardus L*) Randle which effectively dispels mosquitoes (repellent) during observation time is with concentration 25%.

According to Pratiwi Amelia, (2014) Socialization of community acceptance to Larvasida Alami.sangat support in eradication program of mosquito larva.

Patel EK, A.Gupta and R.J.Oswal, (2012) was concluded that natural mosquito repellents were preferred over chemical mosquito repellents.

Aji Rustam and Chandra Buana, (2017) Based on Chi-square analysis values obtained $P = 0.004 < \alpha 0.05$. then H_0 Rejected and H_a accepted which means that statistically there is a significant correlation between the presence of citronella density of *Aedes aegypti* larvae in the neighborhood of reservoirs. Value OR = 4,375, which means that existing landfill environment citronella, do not rule out the risk 4,375 times found the presence of *Aedes aegypti* larvae.

Agreed from the literature search results from Astriani Yoke, et al (2016) obtained information that 68% of the 25 species of plants have high effectiveness of LC 50 <750 ppm. Jasmine, Zodia and Tobacco are the highest effectiveness compared to others with LC50 value of 0.999ppm, 1.94 ppm. The twenty-five plants are suitable for cultivation in Indonesian territory with a tropical climate so that people can easily cultivate them and use them as vegetable larvacids.

Aji Rustam, Muhammad Totong Kamaludin, Salni dan Sriati, (2016) The highest larva index of *Aedes egypti* at the landfill was House Index (HI) 87.10 %, Container Index (CI) [drum 16.13 %] Breteau Index 72.97 %, df 6.3 at the level of high density and for free larva number on the barrel, there were 14 positive larva of *A. aegypti* (62.16 %). The level of high density and Larva-free Number (62.16%) was below the national level of 95% and thus the area could be categorized as safe however, vigilance is advised because the larva-free number sometimes changes as influenced by climate and weather The researchers concluded that almost all 29 (80.6%) of 36 larvae *Aedes aegypti* (Ae) died in 50 ml decoction of lemongrass leaves in less than 2 minutes. Based on Chi-square analysis obtained value $P = 0.04 < \alpha 0.05$. Then H_0 is rejected and H_a accepted which means there is a statistically significant relationship between the decoction of serai wangi leaves on the death of larva *Aedes aegypti*. Dimana value OR = 4.10 which means the influence of decoction of lemon grass leaves on the death of larvae *Aedes aegypti* (Ae) more, 4.10 times .

COVER

Conclusion1. Lemon grass (*Andropogon nardus* L) which can be utilized as mosquito repellent because it contains geraniol, methyl heptenon, terpen alcohol, organic acid and especially citronella as spray mosquito coil.2. It is known that almost all 29 (80.6%) of 36 *Aedes aegypti* larvae (Ae) die in a stew of 50 ml of lemongrass leaves in less than 2 minutes. Chi-square analysis results obtained value $P = 0.04 < \alpha 0.05$. Then H_0 is rejected and H_a accepted which means there is a statistically significant relationship between decoction of lemon grass leaves on the death of larvae *Aedes aegypti* .Suggestion Citizens are expected to play an active role in eradicating larvae *Aedes aegypti*, through the activity of getting used to boil the leaves of citronella and pour into the water reservoir as needed.

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