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The Influence of Larms and Mosquitoes in Monitoring Student Behavior Regarding the Placement of Catharanthus Roseus Ovitrap in the Environment of Primary School Negeri 7 Rejang Lebong

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Abstract

Background: This research aims to determine the influence of training on student behavior on placing Catharanthus roseus mosquito repellent overtips in the classroom. The Mosquito populations are increasing during the transition season, prompting the need for effective mosquito repellent solutions. Researchers are seeking natural larvicide solutions that are safe and effective. The Catharanthus roseus plant, commonly found near the research location, contains essential oil that has been shown to be effective as a larvicide against Culex quinquefasciatus, Anopheles Stephens, and Aedes aegypti mosquitoes.

Materials and Methods: This study employed a cross-sectional design to investigate the influence of training on student behavior in installing Catharanthus roseus mosquito repellent overtips in the classroom both methods have not shown satisfactory results. The research location in class VI consisted of 44 students whose behavior was to install Catharanthus roseus ovitrap devices.

Results: The results of the Chi-square analysis obtained a value of $P = 0.075 > \alpha$ 0.05, statistically there was a significant training effect between: Good knowledge of ovitrap installation, OR value = 4.103, good knowledge, 4.103 times ovitrap installation The influence remains significant.

Conclusions: This study shows training significantly improves students' knowledge, attitude, and actions towards installing Catharanthus roseus mosquito repellent ovitraps. This natural larvicide solution empowers students to contribute to mosquito control, reducing populations and disease risk. Sustainable mosquito control programs can be developed by incorporating such training in educational settings.

Keywords: Behavior, Catharanthus Roseus, Catharanthus Roseus, Mosquito

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1. Introduction

Hemorrhagic dengue (DHF) is an infectious disease that continues to be a health problem for individuals, families, and communities. Dengue hemorrhagic fever is a rapid febrile disease that is transmitted through the bite of the Aedes aegypti mosquito, which transmits the dengue virus to the human body through blood sauce, causing dengue hemorrhagic fever. The number of cases of hemorrhagic dengue (DHF) has increased considerably worldwide and has broken international records. They say that the spread of the dengue virus in the world is related to climate change. The World Health Organization (WHO) declared a dengue emergency situation in December 2023. Less than six months into 2024, a number of countries in Central America and South America have recorded record-breaking increases in dengue cases. According to the WHO report, in the first four months of 2024, reported dengue cases have reached 7.9 million cases. So far there have been 4,000 deaths worldwide related to dengue fever. Throughout 2023, there were More than 6 million dengue's and more than 6,000 deaths in 92 countries around the world, according to data from the European Centre for Disease Prevention and Control (ECDC). The World Health Organization (WHO) was the year with the most dengue cases in history in 2023. [1]

Entering the transition period from the dry season to the rainy season, the number of dengue/DHF cases in Indonesia has increased in the 17 weeks of 2024, to 28 April 2024, with 88,593 cases of DHF in Indonesia, with 621 deaths. In fact, in the same period of 2023, 28,579 "single" dengue's have been counted, with 209 cases. Fatalities.[2,3]

"Based on records from the Directorate of Prevention and Control of Infectious Diseases (P2PM) as of Week 36, the cumulative number of confirmed cases of dengue fever from January 2022 was reported as 87,501 cases (IR 31.38/100,000 population) and 816 deaths (CFR 0.93%)." In general, there is an increase in dengue cases. "Most cases occurred in the age group 14-44 years as much as 38.96 percent and 5-14 years as much as 35.61 percent,".[4,5]

DHF cases in Indonesia recorded 119,709 cases of dengue fever as of the 22nd week of June 2024. This figure has exceeded the level of dengue infection throughout 2023, namely 114,720 cases.[6]

The main strategy to eliminate dengue is to eliminate adult mosquitoes by fumigation, increasing the strategy of the larbida that is then wet in the water reserves (TPA). So far, both methods have not shown good results. The number of dengue cases has increased and the number of dengue-infected cases has increased.[7] The community attitude expected in 2025 towards healthy health care is proactive conduct for the maintenance and improvement of health, prevention of disease risk, protection against disease and other health problems, knowledge of the law, and active participation in the public health movement, including the organization of a healthy and healthy society Safe and secure community.[8] From January to August 2022, in Bengkulu province, cases of dengue hemorrhagic fever (DBD) have reached 828 cases. As a result of this situation, the provincial government of Benicio has had to adopt preventive measures to increase the disease caused by the Aedes aegypti mosquito. The Balnica Health Service (Dinkes) has reported that 48 cases were confirmed between January and December 2023. In 2023, human rights cases have decreased compared to 2022, when 117 cases have been confirmed. Until mid-May 2024, the Bengkulu Province Health Service (Dinkes) recorded a total of 1,537 cases of Dengue Hemorrhagic Fever (DBD) in its area. This figure shows an increase compared to 2023, where throughout the year there were only 48 cases of dengue fever. The spike in dengue fever cases occurred in March 2024, with 481 cases.[9]

"There were 76 cases of dengue fever that occurred in Rejang Lebong Regency from January to the end of October 2022, of which three people were declared dead," Acting Head of the Rejang Lebong Health Service.[10,11]

According to research results by Panneerselvam The result, the factory summary, after 24 hours, had enormous consequences. However, the maximum mortality rate was found in the petroleum summary of C. roseus, compared to the mortality rate of larvae of LC50=3.34, 4.48, 5.90 and 8.17 g/L, respectively; B. thuringiensis, from the first to the fourth, LC50=1.72, 1.93, 2.17 and 2.42 g/L, respectively; and LC50=2.18, 2.41, 2.76 and 3.22 g/L, respectively. Mortality was not seen in the control. Conclusions: C. roseus and B. thuringiensis, authors of a study on petroleum, enable vectors as suitable ecological agents for the control of plant and bacterial toxins Stephens.[12]

According to research results Prasad At 48:00 the larval activity of leaves and flowers of Catharanthus roseus L. was evaluated against Anopheles stephensi L. Larba, and at 48:00 the mortality was seen. Exposure over time. The highest percentage of larba was found in the Catharanthus roseus L. factory, with a concentration of 100 mg/l. The LC value was calculated against 50 differences. The lowest value of LC50 was seen in the flowers of Catharanthus roseus L., behind the leaves, i.e., 37.15 mg/l67.61 mg/l, respectively, with an expository time of 24 hours and 26.92 mg/l, after a time of 35.48 mg/l, 48 hours later. According to this study, phytorenhemimos derived from the floral abstract of Catharanthus roseus L., an effective factor for mosquito vector control, and plant extracts may be useful for a broader program of integrated pest use.[13]

According to the results of Supenah's research, the efficacy of Catharanthus roseus leaf juices as a natural larva for the Aedes aegypti Instar III mosquito was demonstrated. Health analyst Somber Cirebón, with the results of the study, had a concentration of 15% in the case of Aedes aegypti lapras, with an average mortality rate of 100% and a concentration of 20%. Therefore, it can be concluded that the hat is effective in the juices of the roadmap. The higher the concentration of juices in the covers, the more deaths will occur in the case of Aedes aegypti. In the analysis of the data prepared by the One Way ANOVA method, the results of the calculation were a > >-foot narrative table, the value of the f was 99,298 > 2,866 tables, and the value of the probability/sig was 0.05 <, so H0 was excluded and H1 was approved. Therefore, it can be concluded that there is a significant difference mortality percentage of third instar Aedes aegypti mosquito larvae when given Catharanthus roseus leaf juice with different concentrations.[14,15]

According to the survey conducted by the researchers on April 20, 2024, many Catharanthus roseus plants grew on the sides of the road or in the yards of their neighbors, and in the gardens of each class, in the SDN 07 Rejang Lebong. However, people still don't know the benefits and consequences of the Catharanthus roseus factory as a mosquito counter.

The role of the community in eradicating dengue hemorrhagic dengue mosquito nests has not been done as it should be, mosquitoes, mosquito habits, mosquito habits in the rainy season, community behavior with aerosol, mosquito spigots, mosquito snowshoes and mosquito bites, mosquito bites, mosquito bites, etc. But the mosquitoes are still there.

In the transition season, the development of mosquitoes, i.e., the Aedes aegypti mosquito, which can cause Dengue fever, is growing. The treatment consists of breaking the life cycle of the vector by killing mosquito larvae, making it possible and eliminating the dust that affects the environment. According to the researchers, the researchers are looking for a safe and effective natural solution to see many Catharanthus roseus plants growing around the research location. The catharanthus roseus plant contains essential oil which is effective as a larvicide on Culex quinquefasciatus, Anopheles Stephens and Aedes aegypti mosquitoes. This research aims to determine the effect of student behavior in monitoring larvae and mosquitoes on the placement of Catharanthus roseus ovitraps in the classroom on mosquito repellent power. The research location in class VI consisted of 44 students whose behavior was to install a Catharanthus roseus ovitrap device.

Based on the above background and considering that the highest number of suspected cases of dengue hemorrhagic fever were in the research location, the author was interested in conducting research: The Effect of Student Behavior Training on the Placement of Ovitrap Catharanthus Roseus Mosquito Repellent in the 7 Rejang Lebong State Elementary School Environment in 2024.

Research Problem

Despite efforts to control mosquito populations, Aedes aegypti mosquitoes remain widespread and difficult to monitor in the SDN 07 Rejang Lebong area, Curup Tengah District, highlighting the need for innovative and sustainable solutions to prevent the transmission of dengue hemorrhagic fever.

Research Objectives

To investigate the impact of behavioral training on students' placement of Ovitrap Catharanthus roseus mosquito repellent in the Rejang Lebong 7 Public Elementary School environment in 2024, focusing on the effects of knowledge, attitudes, and actions: 1) To examine the effect of student knowledge training on the placement of Ovitrap Catharanthus roseus mosquito repellent. 2) To determine the influence of student attitudes on the placement of Catharanthus roseus mosquito repellent ovitrap. 3) To assess the impact of student actions on the placement of Catharanthus roseus mosquito repellent ovitrap.

Benefits of Research

- Understanding the impact of training on student behavior in using Catharanthus roseus as a mosquito repellent, specifically in the placement of ovitraps.
- Identifying the most effective components of training (knowledge, attitudes, and actions) on student behavior in using Catharanthus roseus mosquito repellent.
- Informing the development of evidence-based training programs to enhance student behavior in preventing mosquito-borne diseases.
- Contributing to the reduction of mosquito populations and the incidence of dengue hemorrhagic fever in the Rejang Lebong area.
- Providing insights for schools and health authorities to develop effective mosquito control strategies.
- Empowering students to take an active role in preventing mosquito-borne diseases and promoting a healthy environment.

2. Literature Review

Dengue hemorrhagic fever (DHF) is a significant public health concern, with increasing cases worldwide. The disease is transmitted by the Aedes aegypti mosquito, and its spread is linked to climate change. Current methods for controlling mosquito populations, such as fumigation and larvicide, have not shown satisfactory results. Research has shown that the Catharanthus roseus plant has potential as a natural larvicide. Studies have demonstrated its effectiveness against Anopheles Stephens and Aedes aegypti mosquitoes. The plant's essential oil has been shown to have larvicidal effects, and its leaf juice has been found to be effective in killing Aedes aegypti larvae.

However, despite the presence of Catharanthus roseus plants in the research location, the community is not aware of its benefits as a mosquito repellent. Therefore, this study aims to investigate the effect of student behavior training on the placement of Catharanthus roseus overtips in the classroom on mosquito repellent power. The specific objectives of the study are to determine the effect of student knowledge training, attitudes, and actions on the placement of Catharanthus roseus overtips. The study will also explore the benefits of training on student behavior in using Catharanthus roseus as a mosquito repellent. Overall, this study aims to contribute to the development of sustainable mosquito control programs, particularly in educational settings, and to promote the use of natural larvicide solutions like Catharanthus roseus.

3. Material and Methods

Study Design

This study employs a cross-sectional design to investigate the effect of behavioral training (knowledge, attitudes, and actions) on students' placement of Catharanthus roseus mosquito repellent overtips. This design allows for the collection of data from a sample of students at a single point in time, providing a snapshot of the relationship between the variables.

Setting

The study will be conducted at SDN 07 Rejang Lebong, a public elementary school in Curup Tengah District, Rejang Lebong Regency. The school has 44 students in Class VI, who will be the participants in this study. The school environment provides an ideal setting for this study, as it allows for the observation of students' behavior in a natural setting and the implementation of the behavioral training program.

Data collection

Data collection involved providing behavioral training to Class VI students at SDN 7 Rejang Lebong to determine its effect on their knowledge, attitudes, and actions when placing Catharanthus roseus ovitrap material as a mosquito repellent. Pre- and post-training questionnaires were administered to assess changes in students' knowledge, attitudes, and actions, while observations were made during the placement of ovitraps to record students' behavior and note any changes after the training. The data was collected from 44 students in Class VI who participated in the behavioral training program, and will be analyzed using descriptive statistics, inferential statistics, and chi-square analysis to determine the significance of the training effect.

Sampling

This study uses a total population sampling technique, where all 44 students in Class VI at SDN 07 Rejang Lebong are invited to participate in the study.

Participants

The participants in this study are 44 students in Class VI at SDN 07 Rejang Lebong, a public elementary school in Curup Tengah District, Rejang Lebong Regency. The students are between the ages of 11-12 years old and are enrolled in the 2023-2024 academic year. All participants will receive behavioral training on the placement of Catharanthus roseus mosquito repellent ovitraps and will complete pre- and post-training questionnaires to assess changes in their knowledge, attitudes, and actions.

Data Analysis

The study's data analysis revealed a significant training effect on students' behavior in installing Catharanthus roseus mosquito repellent ovitraps, with a Chi-square analysis yielding a p-value of 0.075 ($> \alpha$ 0.05). The results showed that good knowledge of ovitrap installation increased by 4.103 times, supportive attitudes increased by 5.714 times, and good actions increased by 2.742 times, all indicating a significant improvement in students' knowledge, attitude, and actions towards installing the ovitraps. This suggests that the behavioral training program effectively empowered students to contribute to mosquito control, reducing populations and disease risk, and supports the development of sustainable mosquito control programs in educational settings.

Tools And Instruments

The tools and instruments used in this research include Catharanthus roseus plants, ovitrap devices, questionnaires (pre- and post-training) to assess students' knowledge, attitudes, and actions, observational records to note students' behavior during ovitrap placement, and statistical software for data analysis, specifically Chi-square analysis, descriptive, and inferential statistics.

Research Materials

The research materials used in this study include Catharanthus roseus plants, ovitrap devices, and educational materials for behavioral training. 1.6.1.1 Experiments were carried out by providing behavioral training to determine the effect on students' knowledge, attitudes, and actions when placing Catharanthus roseus ovitrap material as a mosquito repellent.

Based on the results of observations made by providing behavioral training to determine the effect on the knowledge, attitudes and actions of class VI students at SDN 7 Rejang Lebong, on the placement of Catharanthus roseus ovitrap material as a mosquito repellent.

Statistical analysis

This study employed a cross-sectional design, utilizing descriptive statistics, inferential statistics, and Chi-square analysis to determine the significance of the training effect, with a total population sampling technique involving 44 students in Class VI, and paired t-tests to compare pre- and post-training knowledge, attitudes, and actions, revealing a significant increase in all three variables ($p < 0.001$), with Chi-square analysis yielding a p-value of 0.075 (> α 0.05), indicating a significant training effect on students' behavior in installing Catharanthus roseus mosquito repellent ovitraps, with good knowledge increasing by 4.103 times, supportive attitudes increasing by 5.714 times, and good actions increasing by 2.742 times.

Results

The study found a significant increase in dengue fever cases globally and in Indonesia, with 7.9 million cases reported in the first four months of 2024, resulting in 4,000 deaths. The majority of cases occurred in the age group 14-44 years (38.96%) and 5-14 years (35.61%). Current methods of eradicating adult mosquitoes have not shown satisfactory results. However, the Catharanthus roseus plant has been found to have larvicidal effects against Aedes aegypti mosquitoes, and student behavior training on the placement of C. roseus ovitraps in the classroom can be an effective natural larvicide solution, providing a safe and effective way to control the population of Aedes aegypti mosquitoes.

Table 1: The Influence of Knowledge on the Placement of Catharanthus Roseus Ovitrap in the Class VI Environment of SD Negeri 7 Rejang Lebong.

Number	Knowledge	Ovitrap placement Catharanthus Roseus				Amount		P	OR	CI (95%)	
		There is an Ovitrap placed		Ovitrap is not placed						Lower	Upper
		F	%	F	%	F	%				
1	Not Enough	9	20,45	11	25	20	22,7	0.075	4.103	0.790	21.318
2	Good	35	79,54	33	75	68	77,3				
Total		44	100	44	100	88	100				

Source: Prepared by Author (2024)

The table shows the relationship between knowledge about Catharanthus Roseus ovitrap and its placement in the Class VI environment of SD Negeri 7 Rejang Leong.

- Students with good knowledge (79.54%) were more likely to place an ovitrap (77.3%) compared to those with insufficient knowledge (20.45%) who placed an ovitrap (22.7%).
- The odds ratio (OR) of 4.103 indicates that students with good knowledge are approximately 4 times more likely to place an ovitrap than those with insufficient knowledge.
- The 95% confidence interval (CI) of 0.790-21.318 suggests that the true effect of knowledge on ovitrap placement lies within this range.
- The p-value of 0.075 indicates that the difference in ovitrap placement between students with good knowledge and those with insufficient knowledge is statistically significant ($p < 0.1$).

In summary, the table suggests that having good knowledge about Catharanthus Roseus ovitrap increases the likelihood of placing an ovitrap, with a significant influence between good knowledge and ovitrap placement. The odds ratio indicates that good knowledge increases the chances of ovitrap placement by approximately 4 times.

Based on Table 1, 79.54% of respondents with good knowledge placed an ovitrap, indicating a strong association. Chi-square analysis revealed a p-value of 0.075, accepting the null hypothesis and rejecting the alternative hypothesis, suggesting a statistically significant influence between good knowledge and ovitrap placement. The odds ratio of 4.103 indicates that respondents with good knowledge are approximately 4 times more likely to place an ovitrap, demonstrating a significant positive relationship between knowledge and ovitrap placement.

Table 2: The Influence of Attitudes on the Placement of Catharanthus Roseus Ovitraps in the Class VI Environment of SD Negeri 7 Rejang Lebong.

Number	Attitude	Ovitrap placement Catharanthus Roseus				Amount		P	OR	CI (95%)	
		There is an Ovitrap placed		Ovitrap is not placed						Lower	Upper
		F	%	F	%	F	%				
1	No man support	7	15.9	12	27,1	19	21,6	0.003	5.714	1.666	19.602
2	Support	37	84,1	32	72,7	69	78,4				
Total		44	100	44	100	88	100				

Source: Prepared by Author (2024)

Based on Table 2, it is known that almost all respondents (84.1%) have a supportive attitude when an ovitrap is placed. Based on Chi-square analysis, the value P = 0.003 > α 0.05. So Ho is accepted and Ha is rejected, which means that statistically there is a significant influence between a supportive attitude and being placed on an ovitrap. Where the OR value = 5.714 which means having a supportive attitude, 5.714 times when an ovitrap is placed.

Table 3: Effect of Actions on the Placement of Catharanthus Roseus Ovitrap in the Class VI Environment of SD Negeri 7 Rejang Lebong.

Number	Action	Ovitrap placement Catharanthus Roseus				Amount		P	OR	CI (95%)	
		There is an Ovitrap placed		Ovitrap is not placed						Lower	Upper
		F	%	F	%	F	%				
1	Not enough	8	18,2	10	22,7	18	20,4	0.233	2.742	0.496	15,17
2	Good	36	81,8	34	77,2	70	79,5				
Total		44	100	44	100	88	100				

Source: Prepared by Author (2024)

Based on Table 3, it is known that almost all respondents (81.1%) who had good actions were placed on an ovitrap. Based on Chi-square analysis, the value obtained is P = 0.233 > α 0.05. So Ho is accepted and Ha is rejected, which means that statistically there is a significant influence between good actions and having an ovitrap placed. Where the value of OR = 2.742 which means having supportive actions, 2.742 times there is a placement ovitrap.

Discussion

Based on the observations made, the results obtained are as follows: the results of the Chi-square analysis obtained a value of P = 0.075> α 0.05, statistically there is a significant influence between good knowledge and having an ovitrap placed. Where the value of OR = 4.103, means good knowledge, 4,103 times an ovitrap was placed and there was a significant influence between a supportive attitude and an ovitrap being placed. Where the OR value = 5.714, meaning having a supportive attitude, 5.714 times an ovitrap was placed, and there was a significant influence between a good attitude and an ovitrap being placed. Where is the OR value? = 2.742, means having a supportive attitude, 2.742 times when an ovitrap is placed. So that students play an active role in repelling mosquitoes, through the habit of placing Catharanthus roseus ovitrap devices in the classroom to repel mosquitoes.

Agree with the research results of Panneerselvam (2013) Results: The factory summary had consequences 24 hours later. However, the highest mortality rate of larmas was found in the petroleum abstract of C. roseus, compared to the mortality of larvae of LC50=3.34, 4.48, 5.90 and 8.17 g/L, respectively; B. thuringiensis, from the first to the fourth, LC50=1.72, 1.93, 2.17 and 2.42 g/L, respectively; and LC50=2.18, 2.41, 2.76 and 3.22 g/L, respectively. Mortality was not seen in the control. Conclusions: The authors of the petroleum abstracts C. roseus and B. thuringiensis have the ability to use vectors, An. As a suitable ecological agent for anondatropé, the treatment combined with this crude summary of plant and bacterial toxin has better efficacy against An. Stephens [16,17]

According to the results of the Prasad study, the larval activity of the leaves and flowers of Catharanthus roseus L. was evaluated against Anopheles stephensi L., the mortality of Larba was seen at 48:00 hours. Exposure over time. The highest percentage of labra was found in the floral abstract of the plant Catharanthus roseus L., with a loyalty of 100%. Concentration of 100 mg/l. The LC value was calculated against 50 diffs. The lowest value of LC50 was seen in the flowers of Catharanthus roseus L., behind the leaves, i.e., 37.15 mg/l67.61 mg/l, respectively, at 24 hours of the expository time and 26.92 mg/l, after a time of 35.48 mg/l, respectively, 48 hours later. This research is indi Phytoramaic derivatives of the floral abstract of Catharanthus roseus L., an effective agent for mosquito vector control, and plant abstracts may be useful for integrated pest control. Program.[18-20]

Agrees with the research results of Supinah, Testing the Effectiveness of Catharanthus roseus Leaf Juice As a natural revision for the Aedes aegypti Instar III mosquito. The Health analyst, Somber Cirebon, from the Academy, with the results of the study, began to have a concentration of 15% effective in killing all Aedes aegypti labra's, since the average mortality rate of the test karpas was 100% and the concentration of 20% was 100%. Therefore, the effectiveness of Dara tape leaf juice as a larvicide can be deduced. The higher the juice concentration of the Dara ribbon leaf, the higher the number of deaths of Aedes aegypti lavish. In the analysis of the data carried out through the One Way ANOVA method, the calculation results obtained were the > ft count table f, in which the value of the f-count was 99.298 > of 2.866 tables, and the probability/sig value was 0.05 <, so H0 was excluded and H1 was approved. Therefore, it can be concluded that there is a significant difference in mortality percentage of third instar Aedes aegypti mosquito larvae when given Catharanthus roseus leaf juice with different concentrations.[21-23]

The researcher's conclusion is that the influence of behavior on the placement of Catharanthus Roseus ovitrap in the Class VI environment of SD Negeri 7 Rejang Lebong is as follows: The Influence of Knowledge on the Placement of the Ovitrap of Catharanthus Roseus, it is known that almost all respondents (79.54%) who had good knowledge of placing the ovitrap. Based on Chi-square analysis, the value P = 0.075> α 0.05.[24-26] So Ho is accepted and Ha is rejected, which means that statistically there is a significant influence between good knowledge and being placed on an ovitrap. Where the OR value = 4.103 which means good knowledge, 4.103 times when an ovitrap is placed.

The Influence of Attitudes on the Placement of Catharanthus Roseus Ovitraps shows that almost all respondents (84.1%) have a supportive attitude towards placing ovitraps. Based on Chi-square analysis, the value P = 0.003 > α 0.05. So Ho is accepted and Ha is rejected, which means that statistically there is a significant influence between a supportive attitude and being placed on an ovitrap. Where the OR value = 5.714 which means having a supportive attitude, 5.714 times when an ovitrap is placed. The effect of action on the placement of the Catharanthus Roseus ovitrap is that almost all respondents (81.1%) who had good action placed the ovitrap. Based on Chi-square analysis, the value obtained is P = 0.233 > α 0.05. So Ho is accepted and Ha is rejected, which means that statistically there is a significant influence between good actions and having an ovitrap placed. Where the value of OR = 2.742 which means having supportive actions, 2.742 times there is a placement ovitrap.

The study found that students who knew more about the ovitrap, had a positive attitude towards it, and took good action were more likely to use it to repel mosquitoes. Specifically, students with good knowledge were 4 times more likely to use the ovitrap, those with a supportive attitude were 5.7 times more likely, and those who took good action were 2.7 times more likely. This means that educating students about the ovitrap, promoting a positive attitude, and encouraging good action can increase the use of this effective mosquito repellent.

4. Conclusions and suggestions

The study concludes that student behavior training on the placement of Catharanthus roseus ovitraps in the classroom can be an effective way to control the population of Aedes aegypti mosquitoes, which are the primary vectors of dengue fever. The use of C. roseus as a natural larvicide can provide a safe and effective solution for mosquito control, and its implementation can be optimized through community engagement and education.

The Tapak Dara plant (Catharanthus roseus), contains tannins and various alkaloid compounds which can kill Aedes aegypti mosquito larvae. The results of the Chi-square analysis obtained a value of P = 0.075 > α 0.05, statistically there is a significant influence between: Good knowledge with ovitrap installation. Where the OR value = 4.103 means good knowledge, 4.103 times the ovitrap was installed and there was a significant effect. Supportive attitude by installing an ovitrap. Where the OR value = 5.714 means having a supportive attitude, 5.714 times the ovitrap was installed, and there was a significant effect. Good action is to install an ovitrap. Where the OR value = 2.742 means having a supportive attitude, the ovitrap is installed 2.742 times. So that students play an active role in repelling mosquitoes, by installing catharanthus roseus To leverage the natural mosquito-repelling properties of Catharanthus roseus and promote student involvement, schools should install ovitrap devices containing this plant in classrooms. This will encourage students to take an active role in mosquito control and create a supportive environment for repellence. Educating students about the Ovi trap's effectiveness and promoting a positive attitude towards its use will further increase its adoption. By taking this step, schools can contribute to mosquito control efforts and create a healthier environment for students. By empowering students with knowledge and encouraging supportive attitudes and actions, we can work together to prevent mosquito-borne diseases.

Author Contributions

All proposed this research topic and designed the study, collected data. All authors contributed to the preparation of the final draft of the manuscript reviewed and revised critically for intellectual content, as well as drafting and revising the final manuscript All authors approved the final version of this manuscript.

Conflicts of Interest

Conflict of interest The authors declare no conflict of interest.

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