



Bug Killer Lamp

Submitted by

Mr. Natthanan	Srilachai	M.5/4
Mr. Thirawut	panphai	M.5/4
Miss. Kewalin	Prabwongsa	M.5/4
Miss. Nawarat	Sangkapong	M.5/4
Miss. Phatcharee	Chanthon	M.5/5
Miss. Piyapat	Phosee	M.5/5

Presented to

Mrs.Jinpanee Jattoochai

This report is a part of independent study 2 (IS2) Subject I30202

Semester 2/2563

Satresiriket School Sisaket

The Secondary Educational Service Area office 28

Chapter

1 Introduction and Related Literature

2 Research Methodology and Results

3 Conclusion , Discussion and Suggestion

Bibliography

Appendeiceses

Bug Killer Lamp

NatthananSrilachai ,Thirawutpanphai , KewalinPrabwongsa ,NawaratSangkaong ,

PhatchareeChanthon and PiyapatPhosee

Mrs.Jinpanee Jattoochai Satreesiriket school

ABSTRACT

The purposes of this study were to found out, 1) the lamp can kill insects by using the electric grid, 2) reducing the danger of using chemicals to kill the insects, 3) using objects from local areas .The population was VijiitNakorn Road, Pho Sub-district, Muang District, Sisaket Province, totaling 10 houses.The sample group was the, house number 354 VijiitNakorn Road, Pho Sub-district, Muang District, Sisaket Province by simple random sampling which was conducted during the period 22 August 2020 -11 November 2020. The instrument used in this research was a measure of the satisfaction of bug killer lamp as a research tool.The basic statistic used in data analysis is the mean.The result of this research found that the lamp could actually get rid of insects.It had good brightness.The sample population was satisfied with the use of the lamp.Overall was very good.The 3 items that received the most satisfaction were in order, which were convenient ($\bar{X} = 4.29$),the material was suitable ($\bar{X} = 4.29$).and The brightness of the lamp ($\bar{X} = 4.25$) respectively.

In conclusion, the research found the sample group showed high satisfaction with the bug killer lamp.

Key Word :Bug, Killer, Lamp

Introduction

Presently, a lot of people use neon light at night such as reading books, doing housework, cooking or other activities. In the areas which that next to the forests, people are affected by the bugs and other insects which are sensitive to light or the bugs that feed at night time such as leafhoppers, mosquito, beetles or black flies. These bugs can be harmful and cause irritation or burns on the skin. It is difficult to avoid this problem while using neon lights at night.

Our group realized this problem from these bugs. Thus, we determined to build bugs killer lamp without using chemicals to reduce danger for the users. This lamp would attract the bugs to the net which would release electricity to kill the bugs.

From the study on concept and theory about bugs killer lamp

Purposes of the study

1. The lamp can eliminate bugs and insects by using that electric current.
2. In case of dangers from using insecticide chemicals.
3. Using material from locality.

Expected benefits

1. Bring objects from local area to make utility.
2. Reduce the insects that are sensitive to light.
3. Reduce the use of chemicals in get rid of insect

Importance of the study

After having started researching, our group has discovered that insecticide lamps can be used to kill bugs and insects with light from lamps. It can also reduce chemicals used to control insects by switching to insect control lamps instead.

Scope of the study

Population :10 Households, st. vijitnakhonarea,Pho district. Sisaket Province.

Populations and samples :354 st. vijitnakhon area, Pho district. Sisaket Province.

Tool : The satisfaction of bug killer lamp.

Period :22 August 2021 - 11 November 2021

Hypothesis

The bug killer lamp can eliminate bugs and insects effectively.

Bugs attracted to light

When the night has come and the land is dark or maybe in some seasons and the front light was turned on. There will see a lot of insect that come around front light. Some of this insect behave to active at night for example moth grasshopper, aphid, cricket etc. and this going to be bothering .

The insect like to play with your front light or another light because there have instinct with the light that called Phototaxis. (Dr. NarumonRuenwai.2018: Online)

Bugs attracting bulb

The bugs attracting bulb is a type of UV bulb that is similar to typical fluorescence. However, the differences are the components and type of phosphor used because there is the optical filter coverage.

So, that the clear tube can transfer some part of the visible blue ray causing ultraviolet radiation. (GECKO SUPPLY & SERVICE COMPANY LIMITED. 2020: Online)

Electrical circuit

Electrical circuit is the use of power supply conductors to supply voltage and current to the load using a conductor wire. The wire or conductor is the path for the electric power to connect each other. This is called electrical circuit. The movement of the electron inside will start from power supply to electrical appliances like the basic electrical connection (Basic electrical connection. 2018: Online)

Bugs trap with colored bulbs

Purple light trap is able to trap 3,022 bugs which is the highest number. Next, it is green light trapping 1,026 bugs and red light trapping 256 bugs. The experimental result is consistent with Daniel (2002) conducting the study on the reaction of the bugs to the light within the differences geographical area. The result found that the purple wave attracts bugs better than other wavelengths. It is also in consistence with the study of Menzel(1975) that

the best reaction mechanical of the bugs is mostly between the wavelengths 350 nm., 460 nm. and 550 nm. (Weerapan A. 2009: Online)

Production process

Step 1 Connect to the electric circuit with the lamp.

Step 2 Bring local ingredients to build a lamp frame.

Step 3 Connect the lamp

Step 4 Experiment

Methodology

The study on bug killer lamp was conducted by surveying the problems in the community which were the irritation from the bugs at night, hygiene, beauty and the brightness of the light etc.

The researchers also studied the concept to solve the problems, named the project, consulted with advisor about the plan, improved, conducted the introduction and importance, background of the problems, objectives, hypothesis, scope of the research, importance and the expected benefits. We studies from books, related articles, foreign researches and information from the internet. The 8 questions of the satisfaction evaluations were conducted. The improved tool was used with the sample population to gather the information, analyze, edit and conclude the result.

Method to Collecting

This research was carried out by using a lamp satisfaction measurement. Created for a sample population of 10 houses and collected the data. By the person who studied the data collected by themselves.

The study analyzed the data as follows:

1. Give the satisfaction questionnaire to the sample population. Let's find the total score value.

2. Take the sum to calculate the average.

The sample mean is determined by the following formula:

$$\bar{X} = \frac{\sum x}{n}$$

\bar{X} = the mean of the sample.

$\frac{\sum x}{n}$ = the sum of all points.

n = the number of samples.

Conclusion

The sample populations were satisfied with the bug killer lamp. The overall satisfactory was in good level (4), the highest evaluations were 3, the convenience was 4, materials used were 4.2, the brightness 4.1, and the safety was 4.

Discussion

From the analysis of satisfactory on the lamp, it was found that the sample populations were satisfied with the lamp. The overall satisfactory was in high level. The reason might be because the light trap can catch the bugs with statistical difference. The purple light can trap the most bugs. Therefore, the users were satisfied with the lamp. This was in consistence with the research from Weerapan A. (2009) that studied about the trapping light. The use of the lamp was designed to incorporate with the objectives of the researchers and the set potential. The effectiveness of the lamp and the satisfactory of the users after the try out found that the lamp was able to effectively kill the bugs. According to the satisfactory evaluation with the score of 4, the sample population's satisfactory was in high level. Light is the ecological factor with the most important role toward the ecological process of the bugs even though not as much as heat or humidity. It affected behavior, movement and migration causing the bugs to move into or away from the light. Therefore, the lamp was able to attract the bugs and kill them. This was in consistence with the research from Weerathep W. (2005). The artificial light at night was the essential drive of the ecological environment change in the 21st centuries. We checked the impact on the abundance of nocturnal bugs and bat activity of two color LED lighting (warm white 2700 K, cool white 6500K) in the suburban environment. Most of the bat activities were driven from the readiness of the preys (bugs) while the abundance of the bugs reacted to the natural atmosphere. Therefore, both bugs and bats did not react to warm white LED or warm white. We needed to use purple light bulb or other colors that had higher heat than white light to

attract the bugs In order to eliminate them according to the objective of this research. This complied with the research from Bolliger. (2020). This research was the semi-experimental research. The result was used on the houses in the area of VijiitNakorn road. The sample group were the members in house number 354. The bugs killer lamp was put on the corner of the room where the bugs were attracted. The sample group received the advice from the producer of how to use it. the result found that in-house bugs killer lamp was able to reduce and get rid of bugs, Therefore, it was beneficial to use this bugs killer lamp.

Suggestion

Recommendations for use

1. From the experiment, it was found that the organizers were able to create their own works well. But may be updated to look more modern
2. From the experiment with insect control lamps. It should be developed so that insecticide lamps can be used more easily and conveniently.

Suggestions for further study

1. Should be developed lamps to be more brightness.
2. Should study and compare various bug killer lamps to help create a more efficient lamp

Public services

Let farmers try to put our sample products in the buffalo corral to reduce the number of insects

Bibliography

AlongkornViraphan.(2009).**Land snail survey in Bo Kluea District, Nan Province.**Accessible from:

<http://gg.gg/oa4y7> (Date of retrieval: 20 October 2021).

Andrew.(2559).**Experimentally comparing the attractiveness of domestic lights to insects.**Accessible from :<https://pubmed.ncbi.nlm.nih.gov/27878075/> (Date of retrieval: 20 October 2021).

ArunKumpha.(2018).**Basic electrical circuit.**Accessible from: <http://gg.gg/oa4xz>
(Date of retrieval: 24 October 2021).

Dr. NarumonRuenwai.(2018). **Why do insects like fire?.**Accessible from: <http://gg.gg/oa4wj>
(Date of retrieval : 23 October 2021).

Greedisgoods.(2018). **Likert Scale what is it.**Accessible from: <http://gg.gg/oa4yn>
(Date of retrieval: 22 October 2021).

HaimenXinrongelectricity Ltd(2016).**The working principle of adjustable desk lamp..**Accessible from:
<http://gg.gg/oa4z9l> (Date of retrieval: 20 October 2021).

Janine Bollige. (2563). **Journal of Insect Conservation.**Accessible from: <http://gg.gg/oa50a>
(Date of retrieval: 19 October 2021).

Dr. NarumonRuenwai.(2018). **Why do insects like fire?.**Accessible from: <http://gg.gg/oa4wj>
(Date of retrieval : 23 October 2021).

Questionnaire on satisfaction of educational and knowledge building projects

(IS1)

Subject Bugs killer lamp

1.General information

1.1 gender Man Women

1.2 age 16 - 25 year 26 - 35 year over 35 year

2. Satisfaction with the trial use

Assessment topic	Satisfaction				
	The most 5	Very 4	Moderate 3	Little 2	Minimal 1
1. Lamp brightness					
2. Safety in use					
3. Efficiency in use					
4. Ease of use					
5. Lamp strength					
6. The lamp design is reasonable.					
7. About electricity in use					
8. The number of insects has decreased as desired.					

Statement Please mark in In your most satisfied channel

More Suggestion

.....

.....

.....

Appendix

