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**THE COMBINATION OF EGGSHELLS DOSE AND SUGAR POWDER (CATEBUGU) IN ERADICATING COCKROACHES**

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**ABSTRACT**

Cockroaches are repulsive animals, cockroaches are also one of the vectors of disease that must be controlled. Some diseases which transmitted through cockroaches include dysentery, cholera, diarrhea, typhus, and etc. One way that can be done is to use a combination of Catebugu doses (eggshell and sugar powder) in killing / eradicating cockroaches. The study aims to determine the combination of Catebugu doses in eradicating cockroaches. This study was an experimental study using the Post-test only design, which is by combining Catebugu doses of cockroaches. Population *Periplanata Sp*) and samples were 150 cockroaches. The data that has been obtained will be processed manually presented in the form of a frequency distribution table and analyzed descriptively and statistical tests with Anova and List of Significant differences (LSD). The study result of the combination of egg shells and powdered sugar in eradicating cockroaches, the fastest average time was 15 hours 33 seconds and the longest average time was 16 hours 7 minutes. Other combinations of natural ingredients are needed that can kill cockroaches in a relatively short time with a low level of danger.

**KEYWORDS:** Combination, Eggshell and Sugar Powder

**I. INTRODUCTION**

In general, people have a phobia against cockroaches or in Latin known, by the name *Periplaneta americana*. Most of humans themselves really hate cockroaches, animals that generally live in humid areas such as bathrooms is indeed a scourge that is very feared, not only by women but also by men. Cockroaches are insects that live in homes, restaurants, hotels, kitchens and etc. This cockroach is very close to its life with warm, moist and lots of food, its life is grouped and active at night such as in the kitchen, in food storage, garbage, and dirty water channels. During the day, hiding in dark places and often hiding in cracks. This cockroach is said to be a nuisance because cockroaches usually live in dirty places and are in a state of being disrupted by releasing odorless liquids (Zaman, 2010).

Cockroach is one of the animals that are very happy to live in a humid, dark and dirty place. Its presence in the house such as in the bathroom or in the room, very disturbing, if the cockroach rises to the feet, especially during sleep at night, cockroaches often cross the bed and even on the body. In

addition, this animal that can also fly turns out to be one of the many deadly disease vectors that are worth watching out for.

Some diseases which transmitted through cockroaches include dysentery, cholera, diarrhea, typhus, and etc. Cockroaches that are often found are the types of American cockroaches who likes to be in dirty places, such as in trash cans or sanitation channels. Disease germs that come from dirty places stick to their legs and when a cockroach moves to another place, these germs will carry over and stick to the new place. Cockroaches can also be a trigger for allergies and asthma. The allergy triggers come from dirty body debris, the results of secretions and excretions or that come from cockroach carcasses.

American cockroach (*Periplaneta americana*) is one of the dangerous types, because it has the behavior of eating food and dirt and spewing back some of the food it has digested and likes places like sewage, septic tanks, sewers and trash. In addition to disgusting animals, cockroaches are also one vector of disease that must be controlled.

Cockroach control is usually done by 3 methods, namely; physical and mechanical control, biological control and chemical control. Chemical control is often used, in the form of synthetic insecticides. The use of synthetic insecticides, can have a negative impact on humans, the environment and other organisms. For humans as users can cause acute poisoning, the environment can pollute water, air and soil. While for other organisms can kill natural enemies from pests and pest resistance to pesticides. As revealed by Sucipto (2011) the use of synthetic insecticides has deficiencies made from chemicals which generally can leave residues for humans and have a negative impact on the environment, in humans can cause poisoning if ingested and in the long term will cause resistance. Therefore, it is necessary to do another alternative to control cockroaches from cheap and easily obtained materials that can attract cockroaches to come to these materials, namely sugar powder which has no side effects on the environment and is not harmful to humans. One way that can be done is to use a combination of Catebugu Doses (eggshell and sugar powder) in killing / eradicating cockroaches.

Based on the description above, is there an effect of How many combinations of Catebugu doses are effective in eradicating cockroaches? The research objective is to determine the effectiveness of the Catebugu dose combination in eradicating / killing cockroaches

## **Research method**

This research is experimental with Post-test only design, which is by combining Catebugu dosage combinations to cockroaches, then the effect can be seen schematically:



**RESULT AND DISCUSSION**

From the research results obtained in treatment 1 (X1), Catebugu Combination: 250 grams of eggshell and 50 grams of powdered sugar, the average time needed to eradicate cockroaches as in table 1 below:

**Table 1: Length of time to eradicate cockroaches A dose of 250 grams of eggshell and 50 grams of powdered sugar**

No	Treatment 1 (X1)	Duration in eradicating cockroaches (hours)
	Repetition 1	15,35mnt
	Repetition 2	15,25mnt
	Repetition 3	15,40
	Average	15,33 mnt

From the table above, it can be explained that the average time needed to eradicate / kill cockroaches 250 grams eggshell dosage and 50 grams sugar powder is 15 hours 33 minutes

The results were obtained in treatment 2 (X2), namely Catebugu Combination: 250 grams of eggshell and 100 grams of powdered sugar, the average time needed to eradicate cockroaches as in table 2 below:

**Table 2: Time to eradicate cockroaches A dose of 250 grams of eggshell and 100 grams of powdered sugar**

No	Treatment 2 (X2)	Duration in eradicating cockroaches (hours)
	Repetition 1	15,51mnt
	Repetition 2	15,43mnt
	Repetition 3	15,46mnt
	Average	15,47mnt

From the table above, it can be explained that the average time needed to eradicate / kill cockroaches 250 grams eggshell dosage and 100 grams sugar powder is 15 hours 47 minutes

The results were obtained in treatment 3 (X3), namely Catebugu Combination: 250 grams of eggshell and 150 grams of powdered sugar, the average time needed to eradicate cockroaches as in table 1 below:

**Table 3: Time to Get Rid of Cockroaches Dosage of 250 grams of eggshell and 150 grams of powdered sugar**

No	Treatment 3 (X3)	Duration in eradicating cockroaches (hours)
	Repetition 1	15,38mnt
	Repetition 2	15,52mnt
	Repetition 3	15,47mnt
	Average	15,46 mnt

From the table above, it can be explained that the average time needed to eradicate / kill cockroaches, 250 grams eggshell and 150 grams sugar powder, is 15 hours 46 minutes

The results were obtained in treatment 4 (X4), namely Catebugu Combination: 250 grams of eggshell and 200 grams of powdered sugar, the average time needed to eradicate cockroaches as in table 4 below:

**Table 4: Length of time to eradicate cockroaches A dose of 250 grams of eggshell and 200 grams of powdered sugar**

No	Treatment 4 (X4)	Duration in eradicating cockroaches (hours)
	Repetition 1	16,2mnt
	Repetition 2	15,51mnt
	Repetition 3	16,9 menit
	Average	16,7 mnt

From the table above, it can be explained that the average time required to eradicate / kill cockroaches, 250 grams eggshell and 200 grams sugar powder, is 16 hours 7 minutes

The results obtained in treatment 5 (X5), namely Catebugu Combination: 250 grams of eggshell and 250 grams of powdered sugar, the average time needed to eradicate cockroaches as in table 5 below:

**Table 5: Length of time to eradicate cockroaches A dose of 250 grams of eggshell and 250 grams of powdered sugar**

No	Treatment (X5)	5	Duration in eradicating cockroaches (hours)
	Repetition 1		15,58mnt
	Repetition 2		15,46mnt
	Repetition 3		16,11 mnt
	Average		15,58 mnt

From the above table, it can be explained that the average time needed to eradicate / kill cockroaches 250 grams eggshell dosages and 250 grams sugar powder is 15 hours 58 minutes

**ANOVA**

Treatment					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,442	4	,361	2,931	,076
Within Groups	1,230	10	,123		
Total	2,673	14			

Based on 5 treatments with three repetitions of each treatment, the average length of eradication of cockroaches varies and fluctuates with the fastest average time needed to eradicate cockroaches was 15 hours 33 minutes in the first treatment and the longest average was 16 hours 7 minutes in the 4th treatment and from the results of the statistical tests between the treatments of the five treatment groups using the ANOVA test results are obtained as the table below

From the table above it can be explained the results of statistical tests with the Anova test of five treatments, were not statistically significant. then performed an effective LSD test is a dose of 250 gram eggshell and 50 gram sugar powder with  $\alpha$  0.013

Judging from the results of treatment one to five above, the combination of eggshells and powdered sugar in eradicating cockroaches has not been effective compared to cockroach repellent sold in the market such as magic lime. Cockroaches that come into contact with magic lime 4 hours after contact with their nervous system will lose their function and within 10 hours they will die.

**CONCLUSION**

The combination of eggshells and powdered sugar in eradicating cockroaches, the fastest average time is 15 hours 33 seconds and the longest average time is 16 hours 7 minutes. Suggestion, another combination of natural ingredients are needed that can kill cockroaches in a relatively short time with a low level of danger and the results of statistical tests with the Anova test of five treatments, were not statistically significant. then performed an effective LSD test is a dose of 250 gram eggshell and 50 gram sugar powder with  $\alpha$  0.013

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