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Potensi Bintaro (*Carbera Odollam* Gaertn) , Kecubung (*Brugmansia Candida* Pers) Dan Babandotan (*Ageratum Conyzoides* L) Sebagai Biopestisida Terhadap Hama *Leptocorisa Acuta* Pada Tanaman Padi

Potential Of Bintaro (*Carbera Odollam Gaertn*) , Kecubung (*Brugmansia Candida Pers*) And Babandotan (*Ageratum Conyzoides* L) As A Biopesticide Against Pest Leptocorisa Acuta On Rice Plants

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ABSTRACT

Rice plants (Oryza sativa) is a crop of the main food commodities in Indonesia. Rice production continues to be improved to meet the needs of the community, however, efforts to increase rice production still faces problems, namely hama walang sangit Leptorisa acuta.. One alternative to control insect pests Leptorisa acuta relatively safe, inexpensive, and easily obtained is the utilization of botanical insecticides. One of them is by using plants Bintaro (Carbera odollam Gaertn), kecubung (Brugmansia candida Pers) and Babandotan (Ageratum conyzoides L) vegetable insecticides. This study aimed to determine the effectiveness of Bintaro (Carbera odollam Gaertn), kecubung (Brugmansia candida Pers) and Babandotan (Ageratum conyzoides L) in controlling the Pest Leptocorisa acuta. This study uses the RAL Non Factorial with 6 Level of treatment and 5 replications. From the results obtained that the treatment with the use of plants kecubung can suppress the population of pest Leptocorisa acuta by 100% by the time of application for 1 day after application. Of this study are expected in the future can use kecubung as insecticides with different pests so that in the future kecubung can be used as a vegetable insecticide that is environmentally friendly, economical and right on target.

Keywords: *Leptocorisa acuta, insecticide, kecubung*

ABSTRAK

Tanaman padi (*Oryza sativa*) merupakan tanaman komoditas pangan utama di Indonesia. Produksi padi terus ditingkatkan dalam memenuhi kebutuhan masyarakat, namun usaha peningkatan produksi padi masih menghadapi masalah yaitu hama walang sangit *Leptorisa acuta*.. Salah satu alternatif pengendalian serangga hama *Leptorisa acuta* yang relatif aman, murah, dan mudah diperoleh adalah pemanfaatan insektisida nabati. Salah satunya dengan menggunakan tanaman Bintaro (*Carbera odollam* Gaertn), Kecubung (*Brugmansia candida* Pers) dan Babandotan (*Ageratum conyzoides* L) insektisida nabati. Penelitian ini bertujuan untuk Untuk mengetahui keefektifan dari Bintaro (*Carbera odollam* Gaertn), Kecubung (*Brugmansia candida* Pers) dan Babandotan (*Ageratum conyzoides* L) dalam mengendalikan Hama *Leptocorisa acuta*. Penelitian ini menggunakan RAL Non Faktorial dengan 6 Taraf perlakuan dan 5 ulangan. Dari hasil penelitian diperoleh bahwa perlakuan dengan menggunakan tanaman kecubung dapat menekan populasi hama *Leptocorisa acuta* sebesar 100% dengan waktu aplikasi selama 1 hari setelah aplikasi. Dari penelitian ini diharapkan kedepannya dapat menggunakan kecubung sebagai insektisida nabati dengan hama yang berbeda sehingga kedepannya kecubung dapat digunakan sebagai insektisida nabati yang ramah lingkungan, ekonomis dan tepat sasaran.

Kata kunci: *Leptocorisa acuta, insektisida nabati, kecubung*

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INTRODUCTION

Rice (Oryza sativa L) is one of the important crop in Indonesia due to the results of rice crop used as staple food of Indonesian society. Of course, in the production of rice in Indonesia sometimes increased and decreased along the year. As one of the factors that can reduce rice production is the presence of pests and diseases. Loss which can result in decreased yield and quality caused by pests and diseases (Manopo *et al* , 2013). One of the major pest of rice plants which can reduce yields by up to 100% is walang sangit. Stinky rice pest attacking the rice plant by piercing the ears of rice that is cook milk and suck the liquid in the rice with stiletnya resulting rice grains become hollow or defective.

The use of pesticides by farmers have a negative impact on several aspects, such as agricultural land, fisheries, flora and fauna, even increase the mortality of humans exposed to these pesticides (Wilson and Tisdell, 2001). Excessive use leads to resistance against pests itself. One of the alternatives in the control of the use of pests is the use of the biopesticide, which aims to reduce the density of the population . Given this then a good choice at this time is to use a bioinsecticide.

The chemical constituents present in the plant scary place it is possible to be used as a pesticide that is environmentally friendly chemical ingredients contained in the scary place is saponins, flavonoids, polyphenols, eugenol,and the roots of the scary place containing oil athir (Grainge and Ahmed in Astriani, 2010).

The study aims to determine the effectiveness of insecticides in vegetable Bintaro (Carbera odollam Gaertn), Amethyst (Brugmansia candida Pers) and Babandotan (Ageratum conyzoides L) in the control of pests of rice plants Leptocorisa acuta.

MATERIAL AND METHOD

Research conducted at the Laboratory of Agriculture Faculty of Muhammadiyah University of North Sumatra, from January 2020 s/d in August 2020.

Research material used in this study is pest Leptocorisa acuta, Bintaro (*Carbera odollam Gaertn*), Amethyst (*Brugmansia candida Pers*) and Babandotan (*Ageratum conyzoides* L), honey, distilled water, ethanol and other support of this research

The tool used in this research is a jar, gauze, plastic strap, microscope,tweezers, Handsprayer, and other support of this research.

This research use complete random Design (CRD) with 7 treatments and 5 replications. Where
T0 = control, T1 = Babadotan with a concentration of 5 %, T2 = Babadotan with a concentration of 10%, T3 = Bantaro with a concentration of 5%, T4 = Bantaro with a concentration of 10%, T5 = Kacubung with a concentration of 5 %, T6 = Kacubung with a concentration of 10%

Preparation Of Botanical Pesticides

Amethyst leaves, bintaro and babandotan extracted by using the method of Ohgushi et al. (1980) in Herwita (2015). As much as 1500 g of leaves of amethyst, bintaro and babandotan which is fresh small cut, blended in 400 ml of distilled water to form a slurry, then put into a glass beaker containing 600 ml of distilled water heat (a temperature of 1000C). The mixture is left for 48 hours so that the entire chemical compounds which are soluble in water is taken. Water soaked blackish brown squeezed and filtered with filter paper. Sieve obtained is considered as an extract base (master solution) is ready to be tested the level of effectiveness.

The Parameters Of The Observation

In this study the parameters observed include

1. Persemtase Mortality Of L.acuta

The percentage of Mortality of hama walang sangit calculated by the following formula:

$$P = \frac{X}{Y} \times 100\%$$

Description:
P = the percentage of mortality of L.acuta
X = the number of L.acuta dead

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Y = the number of L.acuta tested

1. The speed of the death of L.acuta

Death speed walang sangit calculated by the formula:

$$V = \frac{T1N1+T2N2+T3N3+.....TnNn}{n}$$

Description:
V = the Speed of death
T = observation Time to-
N = the Number of insects that die
n = Number of insects tested

RESULTS AND DISCUSSION

From the research conducted showed the following results :

1. The percentage Mortality of the death of Imago L.acuta

For data on the percentage of death of Imago L.acuta can be seen in table 1 below :

Table 1. The Percentage Of Mortality Of Imago L.acuta

Treatment	Observations				
	1ha	2hsa	3hsa	4hsa	5hsa
T0	0.00f	0.00f	0.00f	0.00f	0.00f
T1	13.45h	16.28g	34.78f	76.89e	95.67b
T2	14.55h	46.68g	65.66f	78.33d	95.89b
T3	13.88h	47.51g	67.76f	79.80d	92.38c
T4	15.65i	48.60g	66.64f	78.25d	93.20b
T5	13.45i	46.28g	64.78f	76.89e	95.67a
T6	34.55i	46.68g	78.00d	100.00a	100.00a

Description: the Numbers followed by the notation of the different letters in the same column significantly different, at the level of 5 % the test distance Duncan.

2. The time of death of the pest L.acuta

To the time of death of the pest L.acuta of the treatment performed can be seen in Table 2 below. This is because the amethyst which is applied to the pests directly off pests L.acuta. This is because kecubung (Datura metel L.) is a plant that is poisonous but is often used as an anesthetic, antitussive, bronchodilator, hallucinogenic, to natural pesticides.

Table 2. The Time Of Death Of The Pest L.acuta

Treatment	The Time Of Death
T0	0
T1	2
T2	1
T3	1
T4	1
T5	1
T6	1

Amethyst has potential as a natural pesticide or often referred to as a pesticide, because the content of alkaloids and steroids that can inhibit and stop the growth of insects. The alkaloids contained in the plant amethyst are toxic, as inhibitors of feeding and insecticidal to insects. Alkaloid compounds can act as a stomach poisoning or a stomach poison. Therefore, when the alkaloid compounds enter into the body of the Pest Leptocorisa then the digestion will be disturbed. In addition, the alkaloids inhibit the receptors of taste on the mouth area of the insect Pest Leptocorisa. This resulted in Pest Leptocorisa failed to get the stimulus taste so it is not able to recognize the food so that the Pest Leptocorisa die of hunger. Steroids in the plant amethyst can bind to sterols in the food channel which will result in a decrease in the rate of sterol in hemolimfa. Where the role of sterols for Pest Leptocorisa

is as a precursor for the hormone ekdison. With a decrease in the inventory of the plant sterols, the process of change of skin Pest Leptocorisa. also will be disrupted. As a result of an interruption in the growth and development of the Pest Leptocorisa.

From Table 2 above it can be seen due to the treatment of the pesticide can be seen that the effect of the concentration can also affect suppress pest populations L.acuta where babadotan with a concentration of 5% mortality of the pest within 2 days after application. The higher the concentration that is given the faster the insects die. According to Idris (2016) which states that the granting of the concentration the higher, the faster the insects die, because the more substances active in/affected by the insects.

CONCLUSION AND ADVICE

Conclusion

Treatment T6 (amethyst) is able to suppress the pest population of L.acuta is 100% on the 4th day after application. and kacubung with a concentration of 10% more quickly suppress the pest population of L.acuta

Advice

The use of pesticides in vegetable crops amethyst can be applied to pest the other on horticultural crops with a concentration of 10%

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