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Evaluation of Laxative effect tuber Garlic extract water diamond (*Eleutherine palmifolia* Merr.) against white male rats.

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ABSTRACT

Has conducted research on Determination of Water Extract Laxative Effect Onion Bulbs Diamond (*Eleutherine palmifolia* Merr.) Against Rats males using the method of calculation of the water content contained in the rat faeces. The results show the magnitude of the dose of 30 mg, 60 mg, and 120 mg of the MgSO₄ is equal to 67.22%; 82.24%; and 86.17%. Analysis of the data used in this study is the ANOVA one with $\alpha = 0.01$. Results from the analysis of the data is not there a significant difference between the groups MgSO₄, 30 mg dose group, 60 mg dose group, and the 120 mg dose group in which F count (6.0332) \leq F table (7.59).

Keywords: Laxative effect, Bulbs Diamond, White Male Rats

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INTRODUCTION

Constipation is a symptom many causes of the people. There are two type the causes: colonic hypomobility and obstructed defecation. The evaluated for constipation about 50% patients at tertiary referral hospitals have obstructed defecation. Causes of colonic slow transit constipation include diet, hormones, side effect of medication and heavy metal toxicity [1].

The use of natural ingredients from plants (herbs) for treating various diseases is not a new thing for the people in Indonesia. Although it was displaced by the modernization of the health sector, but the fact that herbal medicines are not less effective for treating the disease. In fact, herbal medicines tend to be cheaper. Therefore, it is not surprising that the trend of herbal medicines rife among the public. One use of natural materials of plant origin (herbal) is a diamond onion (*Eleutherine palmifolia* Merr.) As a traditional medicine[2].

Parts that can be used on onions diamond is the tuber. Tubers onions diamonds utilized by people to treat constipation, difficulty urinating, colitis, dysentery, sores, ulcers, vomiting to jaundice. Not only that, people also use a diamond onions to treat several serious diseases such as breast cancer, diabetes mellitus, hypertension, and hypercholesterolemia.

To treat constipation, people usually use as much as 50 grams of onion bulbs diamonds, then grated and squeezed. Results juice and then coupled with $\frac{1}{2}$ cup hot water (100 ml). Based on this, researchers interested in determining the laxative effect of the water extract of garlic bulbs diamonds. [3,4]

MATERIAL AND METHODS

The technique sampling

Onion Bulbs diamond samples (*Eleutherine palmifolia* Merr.) Fresh obtained from Saruasovillage, District of Tanjung Emas, Batusangkar. The sampling technique used in this study is *Simple Random Sampling*.

Preparation of extract

Diamond onion bulbs (*Eleutherine palmifolia* Merr.) Fresh peeled, washed and then the wind dried. Then grated and squeezed. Results juice coupled with hot water. User community as much as 50 grams of onion bulbs diamonds that have been peeled and shredded, then wring it out, and the resulting juice added with 100 ml ($\frac{1}{2}$ cup) of hot water.

Of the 100 gram sample is obtained with 22 ml of juice, add 200 ml of hot water. residue rinsed with aq. dest to negative with FeCl_3 . The solution obtained and then dried.

Dry the results obtained as much as 5.85 grams. So that the yield gained 5.58%. Then the calculation of doses of the extract to the public 3 grams / day after rats became converted to 0.054 grams / day.

A dose of 120 mg / rat / 5ml made by means weighed as much as 600 mg of extract, diluted with aq. dest. up to 25 ml. Doses of 60 mg / rats / 5 ml extract weighed as much as 300 mg, dilute with aq. dest. up to 25 ml. Dose of 30 mg / rats / 5ml. By weighing as much as 150 mg of extract, diluted with aq. dest. up to 25 ml. To manufacture MgSO_4 dose for adults 15-30 g / 1 day wear. Once converted to rats became 0,54g / 5 ml MgSO_4 made by weighing 2.7 grams, add aq. dest little, beating until dissolved, add aq. dest ad 25 ml

Experimental animal

The treatment of test animals is done by white male rats weighing 150-200 gram were used in pharmacological studies. Then grouped into 5 groups each consisting of 3 animal with randomized, weighed and marked. Animals were fasted for 2 hours before being given the test substance. Then do the granting aqua dest, drug control (MgSO_4), the test solution dose of 30 mg, 60 mg, 120 mg

After administration, each animal is placed in a cage that does not come with husks and place the container feces container in accordance with the given dose group.

Observe when started defecation and record the mass of faeces produced every 30 minutes from each animal for 6 hours after defecation heavy first. Weight rat faeces was then dried to constant weight for all groups of rats.

Calculate the water content using the formula:

$$\% \text{ content} = \frac{B1 - B2}{B1} \times 100\%$$

Description: B1 = total weight of faeces before being dried

B2 = weight after drying faeces

Data analysis

Quantitative data were analyzed with SPSS Statistics 17.0 using analysis of variance (ANOVA) one lane with a significant level of 1% results and discussion

The experimental results Test Laxative Effect Onion Bulbs Diamond

RESULTS AND DISCUSSION

This study uses a diamond onion tuber crops (*Eleutherinepalmifolia*Merr.) That can be efficacious as a laxative. The purpose of this study was to determine the laxative effect of bulb onion diamonds are extracted using a solvent of water, and compare the strength laxative effect of water extract bulb onions diamond with MgSO₄ parameters measured were water content contained in faeces male rats, with the observations made during the 6 hours with intervals of 30 minutes interval [5].

Tubers onions diamonds contain a variety of chemical compounds including alkaloids, steroids, glycosides, saponins, triterpenoids, flavonoids, phenolic, quinone and traquinon derivad compound. These compounds that act provides effect consumed, where one of the properties can solve the problem of constipation [6,7]

In this study, researchers used three doses are based on the use of the public, over the use of the public to see an increase in the effect of the test solution to test animals and under the user community to see if the test solution is still effect or not. Control drug used was MgSO₄ that has a laxative effect [8,9].

Test animals were used in this study were male rats as much as 15 tails. Animals to aklimasi advance for \pm 7 days, it is intended that the test animals can adapt to its environment. Animal tests are grouped into 5 groups where the first group as a normal group, Group II as a control group of drugs (MgSO₄), group III, IV, V as a group a dose of 30 mg, 60 mg, and 120 mg. Before testing the animals were fasted beforehand for 2 hours, it aims to avoid the influence of the rest of the food on drug action. During animal remains were fasted animals were given a drink, it is so that the animals do not become dehydrated. Mice then given test substance orally with each dose [10].

In table I and II can be observed with increasing doses of 30, 60 and 120 mg doses will lead to an increase in water content of the faeses respectively of 54.16%, 66.26%, and 69.43 after animals were given a water extract of *Eleutherinepalmifolia* .

Table III shows the strength of the laxative effect of *Eleutherinepalmifolia* water extract on MgSO₄, whereas the higher the dose the higher the strength of the laxative effect of *Eleutherinepalmifolia* water extract when compared with MgSO₄.

Figure 1, the concentration of water content of faeses of all groups showed that the control group MgSO₄ showed the highest water content (80.57%) followed by doses of 120mg, 60mg and 30mg respectively (69.43%, 66.26%, 54.16%) and the smallest water content of normal group faeces (21.84%).

Table I: The percentage of water content of stool white male rats

Group	No Animal	Total Stool Weight (gram)	Dry Weight (gram)	Water Weight (gram)	Water Content (%)
Normal	1	1,7	1,4	0,3	17,65
	2	1	0,7	0,3	30
	3	0,28	0,23	0,05	17,86
Average					21,84
MgSO4	1	5,19	1,1	4,09	78,81
	2	2,12	0,39	1,73	81,60
	3	4,76	0,89	3,87	81,30
Average					80,57
Dose 30 mg	1	1,24	0,4	0,84	67,74
	2	0,19	0,1	0,09	47,37
	3	2,47	1,3	1,17	47,37
Average					54,16
Dose 60 mg	1	1,21	0,5	0,71	58,68
	2	1,64	0,5	1,14	69,51
	3	1,7	0,5	1,2	70,59
Average					66,26
Dose 120 mg	1	2,,41	0,63	1,78	73,86
	2	1,47	0,57	0,9	61,22
	3	1,68	0,45	1,23	73,21
Average					69,43

Table II: The percentage of water content of stool white male rats

Group	Water content (%)
Normal	21,84
MgSO4	80,57
Dose 30 mg	54,16
Dose 60 mg	66,26
Dose 120 mg	69,43

Table III: Percentage strength test solution with MgSO4

Group	Percentage
Dose 30 mg	67,22%
Dose 60 mg	82,24%
Dose 120 mg	86,17 %

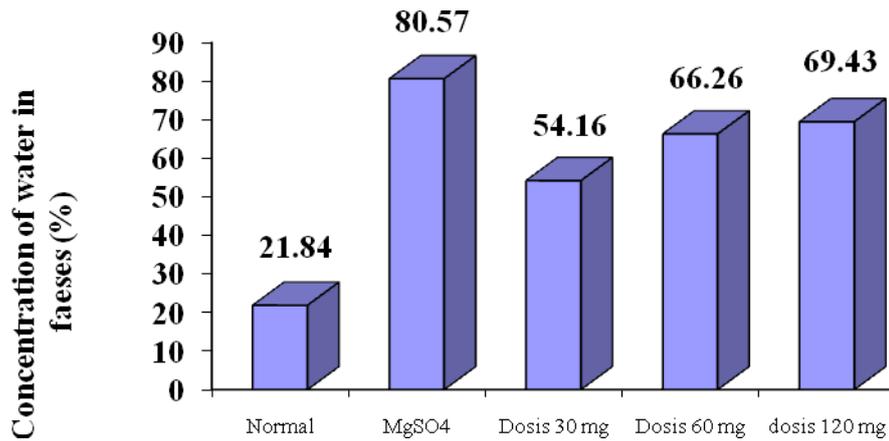


Figure 1: Graph of the percentage of water content of stool white male rats

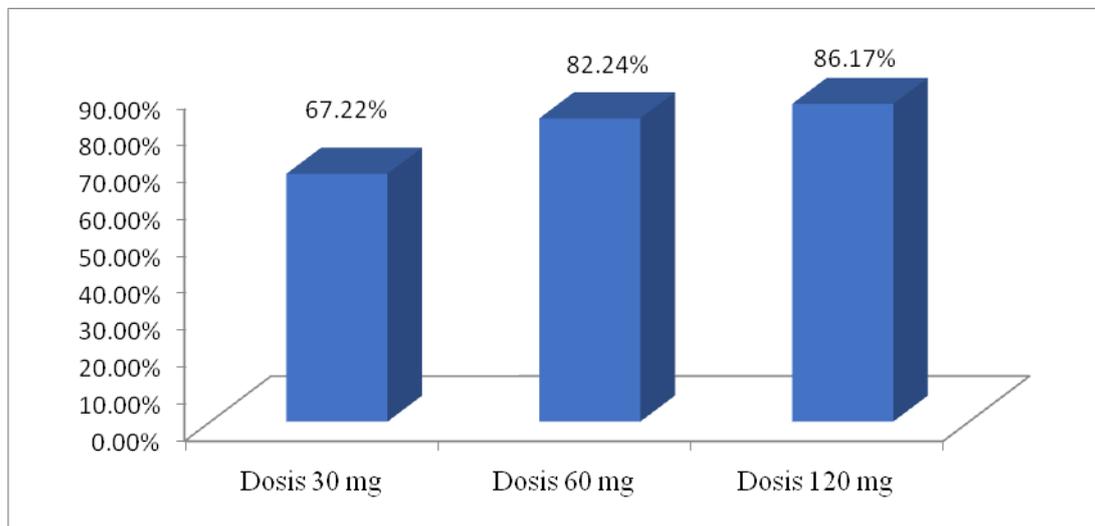


Figure 2: Graph percentage strength test solution with MgSO4

Figure 2 shows the percentage strength of the laxative effect of water extract of *Eleutherinepalmifolia* compared to laxative drug control (MgSO4), where the larger the dose the stronger the laxative effect strength.

The results showed that the water extract of *Eleutherinepalmifolia*Merr significantly increased the propultion of saponin and glikosida. The propultion of saponin and glikosida is probably due to the increasing of peristaltic movement in rat gastrointestinal tract resulting from the stimulating of cholinergic receptors by water extract of *Eleutherinepalmifolia*Merr.[11]

From the results of statistical calculations obtained normal distribution of data and has a homogeneous variance. In the test Anova there is no significant difference between each group.

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