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Effects Of Peaberry Coffee On The Sexual Behavior and The Blood Testosterone Levels Of The Male Mouse (*Mus musculus*)

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Abstract—The purpose of this study was to obtain empirical evidence and reliable informations towards aphrodisiac properties of peaberry coffee. This eksperimental laboratorium research coducted using male mice within 4 treatment groups: group methyl-testosterone as a positive control, negative control, regular coffee powder and peaberry coffee. Oral were given for 7 consecutive days. Blood was taken from the orbital sinus eye and analyzed in a clinical laboratory. The sexual behavior indicator observed were vaginal kissing/days/30 mins. The results showed the average frequencycof vaginal kisssing occurance were 4.66 times in methyl testosterone groups; 2.33 times in negative control groups; 3.33 times in regular coffee groups, and 4.33 times in peabery coffee groups. These data were analyzed using One Way Anova. The result indicating that there were significant differences between the number of kissing vaginal treatment group. Peaberry coffee also affect the increase in average blood testosterone levels in mice, although no significant difference by Anova analysis. The conclusion that can be drawn from this research is the peaberry coffee has a pottential as nutritious boosting aphrodisiac drinks.

Keywords: *Peaberry coffee, Sexual Behavior, Blood Testosterone Levels*

I. INTRODUCTION

Based on data from Indonesian Coffee Festival [1], Indonesia is the third largest coffee producer in the world. Coffee is a beverage that is very popular all over the world. The dringking derived from the processing of ore extraction coffee plant consists of two general types, namely Arabica and Robusta. Until now, coffee has been a popular drink in the world and is consumed by many people. In addition to taste and fragrant aroma, the coffee is also believed to reduce the risk of cancer, diabetes, and other diseases. Familiarize yourself coffee consumption may lower the risk of developing type 2 diabetes [2]. Besides its use for health , coffee in many countries has also become a lifestyle. However, the coffee was Indonsesia various kinds . One is a peaberry coffee.

In Indonesia, especially in the area of East Java, the peaberry coffee used and trusted as the drink is believed to have efficacy as vitality and libido enhancer for adult male. In fact, this statement has become jargon to increase the number of connoisseurs and peaberry coffee sales. But until now, no study has proved that claim. Recent research experts at Coventry University, United States of America presented in the meeting of the annual conference of the Society for Experimental Biology in Salzburg, Austria in 2012 and found that the compound caffeine can trigger muscle strength of older, meaning that caffeine acts as a stimulant to produce more power, Therefore results of these studies may be able to support the efficacy claims peaberry coffee.

The purpose of this study was to obtain empirical evidence and reliable information about public trust and business people about the efficacy aprodisiaka of peaberry coffee at the time after consuming its. The Efficacy may be possible aprodisiak seen from two things, sexual behavior and hormone levels of testosterone. Sexual behavior in mice can be observed from several ways, including, kissing vagina and Mounting [3].

II. METHODS

Type of the research is an experimental laboratory. Research conducted for the provision of peaberry coffee bean powder in male mice and see its effect on testosterone levels and sexual behavior of mice. The object of this research is done on animals male mice (Mus musculus) strain bulb c aged approximately two months with each weighing approximately 25-30 grams. Samples were 45, which consisted of 15 male mice and 30 female mice were divided into four treatment groups. The sample was selected from the population by using simple random sampling techniques. Mice were obtained from the Faculty of Medicine Jember University. The coffee type used in this study is Robusta.

The research design used a completely randomized experimental design to see the effect of coffee bean extract on blood sugar levels and blood testosterone male mice. This eksperimental laboratorium research coducted using male mice within 4 treatment groups: group methyl-testosterone as a positive control, negative control, regular coffee powder and peaberry coffee. The design of this study are described in detail through the steps following studies.

1. Acclimatization mice in cages for 5 days in the laboratory of biology education study program.
2. Divide the sample into four treatment groups: group with a solution of powdered peaberry coffee beans with a dose of 0.10 ml/25 g weight (taken from humans in the habit of consuming coffee in a glass of 250 ml/60 kg weight), a group with a solution of powdered regulary coffee beans with a dose of 0.10 ml/25 g weight, a group with methyl testosterone 42 mg / 100 g weight (positive control), and the group with aquades (negative control), each of which amounted to 5 repetitions.
3. Giving treatment is done every day for 7 days using pipette vulometrik orally.
4. Each male mice in all treatment groups combined with each of the two female mice.
5. Observations sexual behavior of mice done by looking at the behavior of male mice one hour after being given treatment, then observed sexual behavior that is kissing the vagina for 30 minutes for 7 days.
6. Taking blood samples of mice after being treated for 7 days. Blood was sampled as many mice each 2 ml of the sinuses and eye orbital accommodated in ependof.
7. The blood samples were analyzed in a clinical laboratory to determine blood levels of testosterone.

Data collection techniques are a way to measure, calculate, and observed variables including the body weight, the amount of kissing vagina for 30 minutes, the number of mounting for 30 minutes, and testing the levels of testosterone in the blood of male mice using Elisa-test. Inferential statistical analysis carried out as a different test between the treatment groups on levels of testosterone and sexual behavior of mice. The statistical analysis used is one way ANOVA and continued Post - Hoct Tests.

III. RESULTS

After doing research the effects of peaberry coffee powder on sexual behavior and hormone levels of testosterone, with four treatment groups is treated with methyl testosterone (positive control for sexual behavior), the treatment group peaberry coffee, group of regular coffee, and the control group (distilled water), the data obtained as in the following graph :

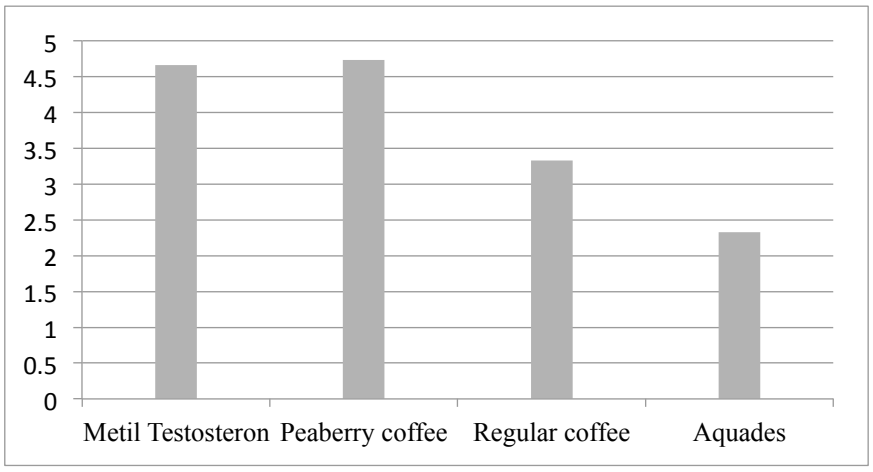

FIGURE 1. Graph Average Number Kissing Vagina / Day/ 30 Minutes Observations

The data shows treatment with methyl testosterone, or a positive control provides high impact to average number kissing agina which is 4.66 times. Methyl testosterone treatment is not much different to the treatment peaberry coffee that is a number of 4.73 times. The graph also shows the effect of treatment of regular coffee and distilled water (aquades) 3.33 and 2.33 times kissing vagina. Data on the number kissing vagina is done analisis of varian test to determine whether the difference in the average number of all treatments were significantly different or not. Table 2 below shows the results of ANOVA test of kissing vagina.

TABLE 2. Results of analisis of varian Test of Kissing Vagina

ANOVA

Kissing Vagina

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	11,960	3	3,987	10,136	,004
Within Groups	3,147	8	,393		
Total	15,107	11			

From table 2 above can be seen that the sexual behavior of mice with indicators kissing vagina when analyzed using ANOVA test showed a value of 0.004. This means that there is a significant difference between the treatment groups to the number of mice kissing vagina. Post – Hoct test required to see any group that has a real difference. Table 3 below shows a summary of the results of the post – hoct test of number kissing vagina.

TABLE 3. Summary of Test Results Post - Hoct Tests

Perlakuan	Nilai Rata-rata
Metil Testosteron	4,66[a]
Kopi Lanang	4,73[a]
Kopi Biasa	3,33[b]
Aquades	2,33[c]

Table 3 above shows that there are no significant differences in effect between peaberry coffee treatment with a positive control treatment, but there are significant differences to the regular coffee and distilled water. The analysis results also showed a significant difference between the treatment of regular coffee by treatment with distilled water or negative control .

In addition to viewing sexual behavior seemed that the vagina kissing indicators, the study also looked at the effects of peaberry coffee on blood testosterone levels. Data from the study of blood levels of testosterone can be seen from Figure 2 following:

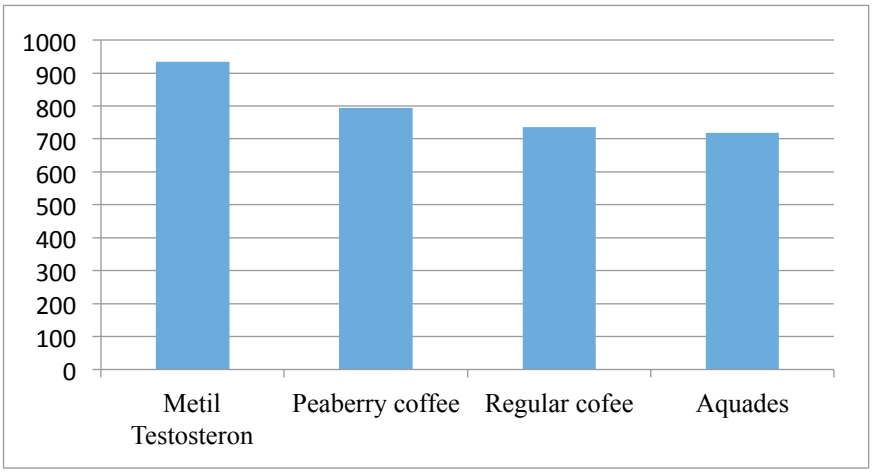

FIGURE 2. Graph of average levels of hormone Testosterone in ng/dl

The above figure shows that there are differences between the effects of methyl testosterone treatment group as a control, treatment peaberry coffee, regular coffee and a treatment group treated with distilled water or negative control. From the graph it can be seen that the group treated with methyl testosterone had average testosterone levels are highest in the amount of 935.2 ng/dl. Followed the average level of treatment group peaberry coffee of 794.2 ng/dl, regular coffee 736.4 ng/dl and distilled water or negative control group amounted to 7.17 ng/dl. To see signifkansi effect of treatment of blood testosterone levels in mice, performed different test using parametric statistical analysis ANOVA one way. Table 4 below shows the results of ANOVA test on testosterone levels in mice.

TABLE 4. Results of ANOVA Test Hormone Testosterone Levels

ANOVA

Kadar Testosteron

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	87254,309	3	29084,770	3,355	,076
Within Groups	69352,660	8	8669,082		
Total	156606,969	11			

The results of the ANOVA analysis showed there was no significant difference in testosterone levels between the treatment groups. From the results of a further test, showed that there were no significant differences in testosterone levels between the treatment peaberry coffee ith regular coffee and distilled water treatments, but significantly to methyl testosterone.

IV. DISCUSSION

The results showed that there were statistically significant differences in sexual behavior between groups of mice treated with both indicators of kissing vagina. However, the data also showed no significant difference types of treatment of testosterone levels in mice, despite differences in effect between treatment groups. It can be caused due to the difference just a little on the hormone levels cause different behavioral responses.

Sexual behavior that showed, in this case the number of kissing vagina can not be separated from the influence of androgens in the male mice. Androgen hormones that play a direct role of sexual behavior is hormone testosterone. The habit of sexual behavior of male depicted in all vertebrate species are dependent on T (testosterone), which is secreted by cells of Leydig in the testes and metabolize the target cells to E2 other (with events aromatication) dihydrotestosterone (DHT, by reduction of 5a) [4], High caffeine content in peaberry coffee or other compounds that interact affect of influence to anabolize or testosterone metabolism. Hormones work more slowly in the body when compared with the nerves, but the hormones work very effectively. Hormones work in very small amounts in the body, but the large-scale effects on the response induced [5]. Thus it makes sense if testosterone levels are not significant, but sexual behavior showed a significant result.

Testosterone levels was not significant between peaberry coffee and regular coffee because the two types of coffee has caffeine content. But the difference between the two is the amount. The caffeine content of coffee varies depending also with the genotypes of different types of coffee, not based on the level of the coffee fruit greenish [6]. This may imply that all types of coffee can actually act as aphrodisiac drink, only in different levels. The Peaberry coffee contains compounds higher caffeine than regular coffee [7]. Caffeine is one of the physiologically active compounds [8]. The compound can act as ligands in tissues which binds to specific receptors to induce a series of chemical processes that gave rise to certain behaviors such as increased levels of the hormone, increased libido, increased sweating, soothing effect and others. One way to increase testosterone levels in the blood that is by giving sandfish (Holothuria scabra) powder [3].

The peaberry coffee significant influence on sexual behavior in mice is also due to the effects of coffee that are vasodilator in blood vessels. Vasodilator effect on blood vessels causing the amount of blood entering the area of the optic nerve and the brain is also more and more, causing the eyes not sleepy. So also in the case of the mice, where we know that mice are nucturnal animals, or animal activity at night, while during the day when they break. By giving the coffee powder orally during the day causes mice to become more active, including in terms of sexual behavior and other activities. “When drinkking coffee or tea, the caffeine is absorbed into the blood stream through the walls of the small intestine. From there, the molecule travels to brain, binding to the receptors that would accept adenosine, a molecule that accumulates when was tired and causes to feel sleepy. So, about 20 minutes after taking it, caffeine helps feel more awake because additional adensoine can't find a binding location” [9].

V. CONCLUSION

The conclusion of this research that there is no significant effect on the treatment of peaberry coffee testosterone levels but significant effect on the sexual behavior of male mice. The conclusion that can be drawn from this research is the peaberry coffee has a pottential as nutritious boosting aphrodisiac drinks.

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