

The Influence of Bitter (Andrographis Paniculata Ness.) Extract to Sexual Ability of Mice (Mus Musculus L. Swiss Webster) Male

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Abstract - Extract of sambiloto (*Andrographis paniculata* Ness.) has some content including diterpene lactones do and glikosidanya such as deoxyandrographolide, andrographolide, neoandrographolide, and Flavonoids. Granting of sambiloto extract (*Andrographis paniculata* Ness.) no effect on libido mice (*Mus musculus* L.) males. The ability to mate the male mice had been given the extract of sambiloto (*Andrographis paniculata* Ness.) can lower libido mice (*Mus musculus* L.) but for the ability of mice to mate (*Mus musculus* L.) This does not affect males to marry some mice (*Mus musculus* L.) females. Control the amount of motion normal libido with an average 8.67. While on treatment of 0.2 g decreased libido movement can already be seen with an average of 5.67. 0.4 g at the treatment the amount of movement libidonya an average 4.83 and 0.6 g treatment the amount of movement the libido average 4.83 and 4.50.

Keywords - Extract, Sambiloto, Mouse, The Male Libido.

I. INTRODUCTION

Indonesia as one of the country's rich natural resources. Indonesia is the country that very potential in medicinal raw materials. Even thousands of plant species and plant medicine efficacious, have suspected since the old hereditary utilized by our society. One of these plants sambiloto (*Andrographis paniculata* Ness.) needed in traditional medicine industry. BPOM enter plant sambiloto (*Andrographis paniculata* Ness.) as the flagship plant for bio-pharmacy industry developed in a drug (Dewi, 2008).

Plant sambiloto (*Andro-graphis paniculata* Ness) is expected to be antifertilitas which is used as a medicinal plant has many benefits in various countries among others to treat cancer, anti inflammatory, anti virus, anti HIV and others. Chemical content consists of *flavonoids* and lactones do. The main active substances of this plant is andrographolide which is derived from a compound respectively. Toxicology tests based on animal experiments suggest that andrographolide and other compounds found in sambiloto has a very low toxicity (Widyawati, 2007).

Based on the research that has been done, the content of which is found in plants including sambiloto *diterpene*

lactones do and glikosidanya, such as deoxyandrographolide, andrographolide, and neoandrographolide. Flavonoids also reported there were at the plant this sambiloto. In addition to the components of the alkane, ketones, pillars, minerals (calcium, sodium, potassium) kersik and resin acids (Matsuda et al, 1994). based on the results of the research of Sumarmin, et al (2018) shows that the extract of Sambiloto (*Andrographis paniculata* Ness) can show the number of spermatozoa that ejaculate and sperm count lowers to normal.

Sambiloto has a wide range of benefits for human health. Andrographolide is the active substances of plant sambiloto (*Andrographis paniculata* Ness.) (Warditiani, 2014). Not only does this sambiloto plant leaves are efficacious, the stem is also effective as a drug that is used to make herbal medicine.

Reproduction is the process by which living things strive to reproduce offspring in order to sustain life and the next generation. House mouse (*Mus musculus* L.) a member of the Muridae (mice-ikusan) are small-sized. House mouse males is mammals. The main sex hormone androgen and is tetosteron. Steroid hormones produced by the Leydig cells

of the testes which is directly responsible for the male gender.

In males, the sex hormone androgen is the most important of which is testosterone. Androgen steroid hormone which is mostly produced by the Leydig cells of the testes, directly responsible for primary and secondary sex characteristic gender male. The primary characteristics are signs related to the reproductive system, the development of the structure of reproduction and sperm production. Secondary sex characteristics are traits that are not directly related to the reproductive system, which includes the change of the voice becomes severe, the spread of diwajah and dipubis hair and muscle growth (Campbell et al., 2004).

Based on the research of Pratomo (2010) indicates that the granting of water decoction of wedge the earth can improve the behaviour of white rat males libido. While in research Sarapi (2015), stating that the granting of ethanol extract pare can increase libido is crucial in the sexual man. The libido is the encouragement of creative instincts to get sexual satisfaction. The increase and decrease in libido and sexual activity with a frequency approach, penunggan, and mating. Based on the results of the research of Fu'adah (2010) the results of the data analysis there are meaningful differences between the test group and control group in which the influence of a combination of aromatherapy oils of sweet orange rind and oil of ginger Rhizome bigger against the murine libido white males bia compared with aquades which means sweet citrus rind minya and Rhizome of ginger oil may increase libido mice are white males.

Based on the background, conducted research on the influence of extract of sambiloto (*Andrographis paniculata* Ness.) against libido mice (*Mus musculus* L.) males.

II. REVIEW OF LITERATURE

A. Plants Sambiloto (*Andrographis paniculata* Ness.)

1. The characteristics of Sambiloto (*Andrographis paniculata* Ness.)

Sambiloto (*Andrographis paniculata* Ness) is one kind of medicinal plants used in traditional medicine which can grow lush and cultivated in various parts of the world, including Indonesia (Cendranata, 2012). Sambiloto has spiked terminal panicles, have no bracteola, straight or curved corolla tube, and imbricata seen in picture 1 (Backer and Brink, 1965).

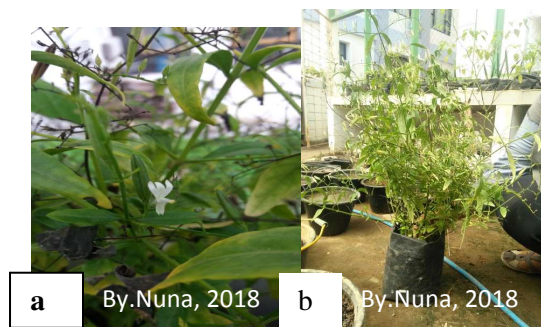


Figure 1.(a) Flower Sambiloto (*Andrographis paniculata* Ness.)
(b) plant Sambiloto (*Andrographis paniculata* Ness.)

Sambiloto can grow in all soil types so no wonder if this plant is widely distributed Earth handy. Its natural habitat is open places the shaded and somewhat humid, such as gardens, Riverside, bushes or clumps of bamboo. It has a wooden trunk shaped Sambiloto round and rectangular and has many branches. Single leaf sight, Sword-shaped (lanset) with the edges of the flat (integer) and a smooth surface, green. The flowers are purplish white, shaped jorong (month long) with the base and ends the taper.

2. Classification of Sambiloto

In taxonomy, sambiloto can be classified as follows:

Regnum	: Plantae
Divisio	: Spermatophyta
Sub Divisio	: Angiospermae
Classis	: Dicotyledoneae
Ordo	: Solonaceae
Familia	: Acanthaceae
Genus	: <i>Andrographis</i>
Species	: <i>Andrographis paniculata</i> Ness (Backer and Brink, 1965).

B. The Mouse (*Mus musculus* L.)

1. Description of Mouse (*Mus musculus* L.)

Mice derived from murine existing traders in the city of Padang and Bukittinggi. Mice are placed in cages in the form of a square-shaped plastic basins and closed with wire as well as given a pedestal rice husk as shown in Figure 2.



Figure 2. Mencit (*Mus musculus* L.)

Mouse (*Mus musculus* L.) is an animal that is often used in research because it is easy to be fed and nourished. In addition, it has a period of gestasasi and easy proliferation (Rugh, 1967:2). Mice are very easy to adjust to the changes that were made to man. His weight of about 10-21 gram. Mice reached adulthood is very fast (42 days) pregnant period is very short (19-21 days) and over and over again with the number of children in each lot is pregnant.

2. Libido Mice (*Mus musculus* L.) Males .

The word libido is derived from the latin word for sex lust. Libido in usage generally means the desire or sexual activity. The libido is the encouragement of creative instincts to get satisfaction especially sexual gratification. Libido can be influenced by means of hormonal or non-hormonal (Sarapi, 2015).

III. METHODOLOGY

This type of research is research experiments. The research was carried out in March to may 2018 in the laboratory of zoology and Animal biology Majors Division Faculty of mathematics and Natural Sciences of the State University of Padang.

This research was performed using Random Design complete (RAL) with 4 treatments and 4 Deuteronomy:

1. Control
2. Granting of extracts of sambiloto with doses of 0.2 g/30 g BB
3. Granting of sambiloto extracts with a dose of 0.4 g/30 g BB
4. The granting of sambiloto extracts with a dose of 0.6 g/30 g BB

Dosing treatment is obtained based on the dose of sambiloto (*Andrographis paniculata* Ness.) on the research of Penatriwati (2013).

IV. DATA ANALYSIS

Data were presented in the form of quantitative observations, analyzed with ANOVA (Analysis Of Variance). The results of the analysis of the data shows the influence of then continued with test BNT on significant $p < 0.05$.

V. RESULT AND DISCUSSION

A. Research Result

Of research results can be known the influence of extract of sambiloto (*Andrographis paniculata* Ness.) against the number of movements of the male mice are courting libido (*Mus musculus* L.), seen in Figure 3 below:

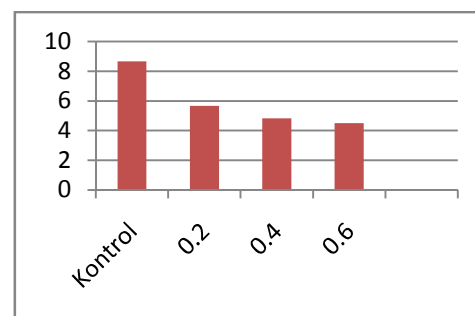


Figure 3. A diagram of the number of Mating the male mice are Intromisi Movement on different treatments of the extract of Sambiloto (*Andrographis paniculata* Ness.)

From Figure 3 this can be known the granting of sambiloto extract (*Andrographis paniculata* Ness) has no effect against the murine libido (*Mus musculus* L.) Based on the research that has been done giving of sambiloto extract (*Andrographis paniculata* Ness) with 0.2 g treatment, 0.4 g 0.6 g, and have no effect in increasing the movement of libido mice (*Mus musculus* L.) but lose sexual motions . The number of controls on the movement of a normal libido with an average 8.67. While on treatment of 0.2 g decreased libido movement can already be seen with an average of 5.67. 0.4 g at the treatment the amount of movement libido an average 4.83 and treatment 0.6 movement libido average 4.83 and 4.50.

Observation of the number of mice by murine what females males (*Mus musculus* L.) can be seen in Figure 4

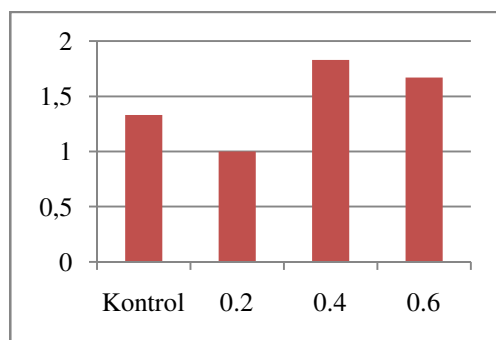


Figure 4. The number of Female Mice diagram What on various Treatment Extracts Sambiloto (*Andrographis paniculata* Ness.)

From Figure 4 it can be known to the awarding of the extract of sambiloto (*Andrographis paniculata* Ness) has no effect against the number of real mice are what females. Each treatment the number of mice by murine what females males average 1 mice. On the table it looks that at least 0.4 high treatment happens to marriage with an average of 1.83 next on the treatment of murine 0.6 females that successfully marries seen on average 1.67 table on murine 0.2 pelakuan females that successfully what an average of 1.00 while in control of an average of 1.33.

VI. DISCUSSION

Based on Figure 3. Statistically the average movement of intromisi lower. *Andrographolide* has no effect because the real number of movements against the intromisi and does not alter sexual movement on murine male so as not to toward the pituitary as well as power does not affect the libido male mice. But the cause of the immune mice are getting better because only imunomodulator *andrographolide*. This is in accordance with the statement of Penatriawati (2013) that the awarding of the extract of sambiloto (*Andrographis paniculata* Ness) influential in lowering the number of movements of intromisi mice (*Mus musculus* L.) males and the higher dose given increasingly decreases the amount of her movement.

The decline in the number of movements of the libido is caused because of active substances on the extract of sambiloto (*Andrographis paniculata* Ness.) i.e. *andrographolide* which causes the production of FSH (Follicle Stimulating Hormone) and LH (Luteinizing Hormone) decreases. Decreased levels of FSH and LH cause the Androgen hormones also decline and affect the libido. This is in accordance with the theory of (Puradisatra in the Penatriawati, 2013). Stating the Androgen functioning control male sex and libido. Whereas in animals of

androgens can stimulate the activity and aggressive nature. Besides research conducted Sukmaningsih (2009) States that cigarette smoke causes testosterone hormone levels decline. Nicotine affects the central nervous system by means of inhibiting GnRH work so that the formation of FSH and LH is hampered. With obstructed the formation of FSH and LH then have abnormal spermatogenesis runs.

The control of reproductive hormones against the tubuli seminiferi spermatogenesis in the beginning of the release of gonadotropin releasing hormone (GnRH) from the hypothalamus and further stimulates the release of reproductive hormones LH and FSH or gonadotropin from the anterior pituitary gland/pituitary (Barry in Pratomo, 2012).

Pituitary secretes the hormone gonadotropin with two different influences on the testes. Luteinasi hormone (LH) stimulates hormones androgens by Leydig cells. Fengshen (/Folice Stimulating Hormone FSH) affecting spermatogenesis seminiferus tubuli for meningkatkan. Because androgens are also necessary for sperm production, then the LH stimulates spermatogenesis are not directly. LH and FSH are arranged alternately by a hormones from the hypothalamus, i.e., hormones (GnRH) gonadotropin Liberator. The concentration of LH, FSH and GnRH in the blood is regulated via negative feedback by androgens. GnRH also controlled through a negative-feedback from LH and FSH (Campbel, 2004). Other hormones that affect spermatogenesis is ICSH which will stimulate leydig cell growth resulting in testosterone that would later mensituasi sertoli cells and spermatozoa (Sumarmin, 2016)

Mating behavior of the murine begins with the approach between the male mice with murine murine females, then males sniff out the base of the tail female mice mating occurs and the new. This is in accordance with the theories expressed by Pratomo (2010) stating that the conduct or behaviour of white rats in cages there is a variable behaviour: 1.) approached the female, 2.) standing rests with the back leg, 3.) spinning, 4.) sniffing around, 5.) scavenge the husk, 6.) eat chaff. Based on the results I observe the behaviour of mice in cages with enclosures around sniffing i.e. muzzle, sniffing and attaching the muzzle kekawat closing cages. After the mating activity of murine observed occurred at 19.00-23.30 pm. This is in accordance with the statement of Prasetyaningsih (2018) that murine animal is nocturnal (*Mus musculus* L.) the nocturnal animals is a lot of activity at night of the day of her life, including sexual activity that is also doing a mating.

Based on the observation of a statistically average number of female mice what did not differ markedly. So it's not contrastive and number of female mice will not change. the ability of the libido is not interrupted. allegedly on the treatment of 0.4 and 0.6 overall are on a relatively equal estrus phase.

The number of observations in mice after awarding what females sambiloto extract (*Andrographis paniculata* Ness.) no different or the same as real controls. The results obtained on mating ability shows the allotment of sambiloto extract (*Andrographis paniculata* Ness) can reduce the amount of movement yet mating did not affect the ability to mate the male mice are mice to some females. And in this study all the given dose can be used as a contraceptive drug.

Based on observations of mating ability of male mice that had been given the extract of sambiloto (*Andrographis paniculata* Ness) can lower libido mice (*Mus musculus* L.) but for the ability of mice to mate (*Mus musculus* L.) This does not affect males to marry some mice (*Mus musculus* L.) females.

VII. CONCLUSION

Based on the research that has been done can be concluded that the awarding of the extract of sambiloto (*Andrographis paniculata* Ness.) no effect on libido mice (*Mus musculus* L.) males.

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