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Effective Sexual Therapeutics of Sweet Basil Herb

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Abstract

Ocimum basilicum or sweet Basil which belongs to the Family *Lamiaceae* (mints), is native to areas in Asia and Africa and grows wild as a perennial on some pacific islands. Basil was brought from India to Europe through the Middle East in the sixteenth century, and subsequently to America in the seventeenth century [1]. It contains essential oils such as linalool, (Z)-cinnamic acid methyl ester, cyclohexene, α-cadinol. Also it contains phenolic compounds such as rosmarinic acid, which is the active principle in this study.

Keywords: Vinegar; Food preservative; Fluoride; Potentiometry; Fluoride selective electrode

Introduction

Chemical Structure: (Figure 1)

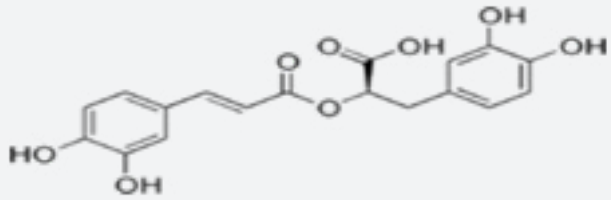

Figure 1: Structure of Rosmarinic Acid.

This study was conducted to investigate the effect of FSH hormone and LH hormone on male fertility and its ability to facilitate pregnancy in female albino rabbits, using *Ocimum Basilicum* alcoholic extract. We seek in our research to increase male sex hormones (androgens) by increasing FSH and LH and by doing so increasing fertility. Basil herb is widely used in many medical conditions, food preparations and others, it also a very popular herb and many people believe that natural products are always safe and good for them.Many men have hormonal disturbance which can lead to many pathological conditions so it's useful to conduct a study to see the effectiveness of the basil herb extract on treatment of the sexual hormones disturbance and see its effect on related fertility. The regulation of testosterone concentrations throughout the body is critical for male reproductive function. The hypothalamus and pituitary gland regulates the production of testosterone and the cells that assist in spermatogenesis. GnRH activates the anterior pituitary to produce LH and FSH, which in turn stimulate Leydig cells and Sertoli cells, respectively. The system is a negative feedback loop because the end products of the pathway, testosterone and inhibin, interact with the activity of GnRH to inhibit their own production (Figure 2).

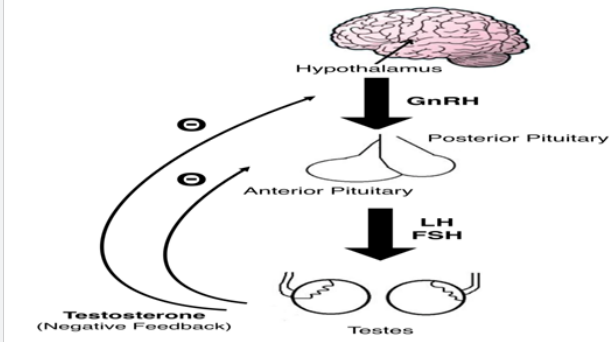

Figure 2

Low blood concentrations of testosterone stimulate the hypothalamus release of GnRH. GnRH then stimulates the anterior pituitary to secrete LH into the bloodstream. In the testis, LH binds to LH receptors on the Leydig cells and stimulates the release of testosterone. When concentrations of testosterone in the blood reach a critical threshold, testosterone itself will bind to androgen receptors on both the hypothalamus

and the anterior pituitary, inhibiting the synthesis and secretion of GnRH and LH, respectively. When the blood concentrations of testosterone once again decline, testosterone no longer interacts with the receptors to the same degree and GnRH and LH are once again secreted, stimulating more testosterone production. This same process occurs with FSH and inhibin to control spermatogenesis [2].

Sweet basil used as a source of flavoring principles and medicinally, is used to aid digestion as it is a carminative, in an infusion to relieve enflamed or tired eyes, antioxidant, Tea made from fennel is a mild laxative and diuretic [3]. Basil contains a compound called rosmarinic acid that responsible for increasing sex hormones and provides antiviral, antimicrobial, and anti-inflammatory pharmacological properties [4].

Chemical studies revealed that rosmarinic acid is the predominant phenolic acid present in both flower and leaf tissues. Unusual basil accessions were identified that can serve as genetic sources of phenolic acids for crop improvement [5]. Also, it contains essential oil is used industrially in production of soaps and other cosmetic products for its aromatic qualities [6].

This study was done by using *Ocimum basilicum* dry leaf extract for New Zealand rabbits at two different doses (1.95g and 2.4g) of the herb extract according to their weight, then blood samples were taken to laboratory for serum FSH and serum LH analysis [7-10]. Nine adults, both males and female albino rats weighing 700-1600gm were used in the presented study. The animals were kept in the animal house in the Medical Research Center [11].

Animals were housed in separate cages, each cage contain one male and two females under conventional and controlled conditions, the first cage was labelled as a control group, the second cage was labelled as sample No. (1) and the third one was labelled as sample No. (2).

Each New Zealand rabbit males of both samples No.(1) and No.(2) wear given a 1L of water to be drink before the experiment starts, then they remained amount of water was subtracted from the total amount of water given, the result of this was divided by 10 to determine the suitable amount of water that should dissolve the dose, the New Zealand rabbit males of both samples No.(1) and No.(2) were thirsted from afternoon until the second day at the morning, then the therapeutic dose were given, which was 1.95g dose for 1.3kg weighing New Zealand rabbit male in sample No. (1) and 2.4g dose for 1.6kg weighing New Zealand rabbit male in sample No. (2), the duration of this study was 14 days [12-14].

Blood samples were collected using Razor, Cotton and Syringe in to Heparin Test tubes, then it was separated into blood and plasma using centrifuge machine, blood serum FSH and serum LH were taken from male rabbits of control group, sample No. (1) group and sample No. (2) group three times, before starting the experiment, after 7 days (during the experiment) and after 14 days (after finishing the experiment).

UNION (Enzyme Immunoassay for Quantitative Determination of FSH)

FSH hormone was allowed to reach room temperature, the package was opened, the steps required were taken out and the rest was sealed in the bag with desiccant after expelling the air it were stored at 2-8°C. The substrate contained in well No. (4) was ensured that it was colorless. Devices which do not have this characteristic were discarded. 80-100µL of the undiluted samples were dispensed, Calibrators or control in well No. (1) Of each strip. The strips were inserted into the tray in UNION, the run was started, and the system performed the following procedure automatically.

a) The sample was pipetted, conjugated into the assigned well, mixed, and incubated at 25°C.

b) The content was discarded and washed 3 times.

c) Substrate (FSH) was added, and incubated at 25°C.

d) Stop solution was added, mixed and reading was taken.

e) The result was calculated.

The same procedure was repeated to determine the serum LH.

Result

(Tables 1-4)

Table 1: Serum FSH and Serum LH before Starting Experiment: batch No.1.

Tests Groups	FSH Hormone	LH Hormone
Control	0.80iu/l	0.11iu/ml
Sample No.1(1.95g/ kg BW)	0.70iu/l	0.20iu/ml
Sample No.2(2.4g/ kg BW)	0.60iu/l	0.13iu/ml

Table 2: Serum FSH and Serum LH After 7 Days of Starting Experiment (During Experiment): batch No.2.

Tests Groups	FSH Hormone	LH Hormone
Control	0.80iu/l	0.11iu/ml
Sample No.1(1.95g/ kg BW)	1.00iu/l	0.20iu/ml
Sample No.2(2.4g/ kg BW)	1.00iu/l	0.20iu/ml

Table 3: Serum FSH and Serum LH After 14 Days of Starting Experiment (At the end of Experiment): batch No.3.

Tests Groups	FSH Hormone	LH Hormone
Control	0.95iu/l	0.11iu/ml
Sample No.1(1.95g/ kg BW)	1.00iu/l	0.20iu/ml
Sample No.2(2.4g/ kg BW)	1.00iu/l	0.40iu/ml

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Table 4: Means to Confirm Significant of the Tested Serum FSH and LH.

Batches	Batch (1)		Batch (2)		Batch (3)	
Tests Groups	FSH Hormone	LH Hormone	FSH Hormone	LH Hormone	FSH Hormone	LH Hormone
Control	0.80A	0.11B	0.80B	0.11B	0.95A	0.11C
Sample No.1	0.70B	0.20A	1.00A	0.20A	1.00A	0.20B
Sample No.2	0.60C	0.13B	1.00A	0.20A	1.00A	0.40A

Ultrasounds on females of the under test rabbits show positive pregnancy

(Figures 3-6)

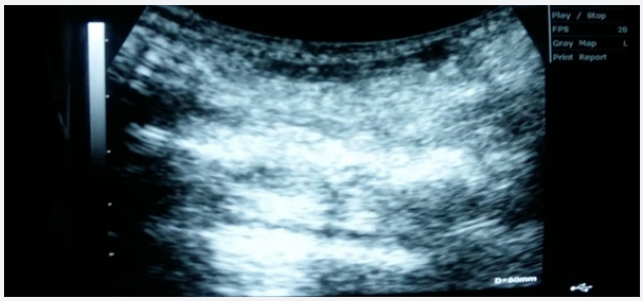

Figure 3

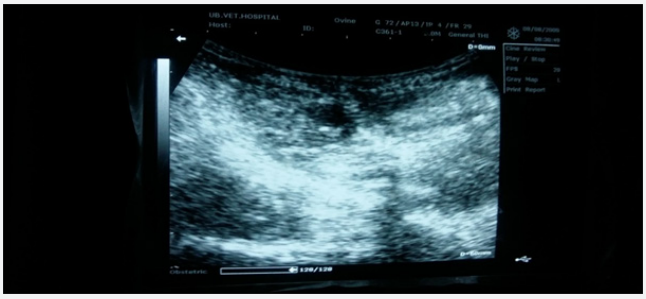

Figure 4

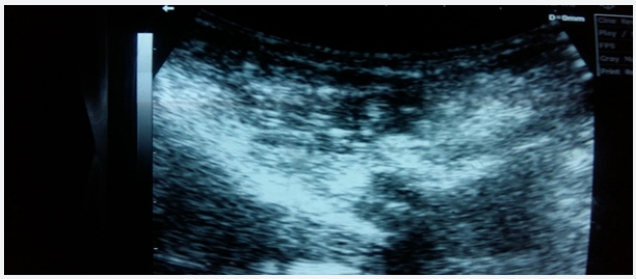

Figure 5

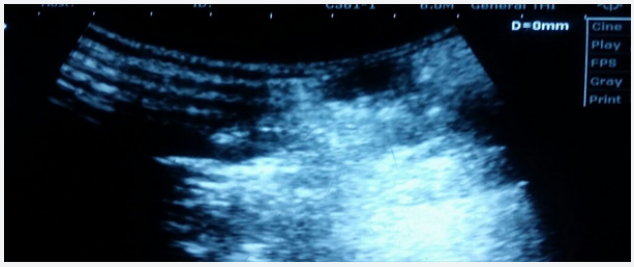

Figure 6

Discussion

Upon applying ultrasound on New Zealand rabbits female it was found that all female in both samples (No.1 and No.2) were pregnant within the specified treatment period, which suggest there were more sexual activity during giving sweet basil extract herb [15].

Ultrasound results proved a male sexual hyperactivity manifested by the approved pregnancy of females , This is similar to another study were done by Leyendecker G et al. [16] on pregnancies following chronic intermittent administration of Gn-RH by means of a portable pump a new approach to the treatment of infertility in hypothalamic amenorrhea.

New Zealand rabbits that received 1.95gm of the extract of the under test herb, showed in the first week an FSH values that were significant and LH values that were not significant which suggest that this herb at the specified dose is follicular stimulating hormone stimulator dose but not luteinizing hormone stimulator dose ,the same New Zealand rabbits that received 1.95gm of the extract of the under test herb, showed in the second week an FSH values that were significant and LH values that were not significant which suggest that this herb at the specified dose is follicular stimulating hormone stimulator dose but not luteinizing hormone stimulator dose. This is similar to another study were done by Graham KE et al. [17] in which only FSH only significant on evaluation of the expression of follicle stimulating hormone (FSH) beta mRNA and secretion of FSH from LbetaT2 cells in response to GnRH and activin A.

New Zealand rabbits that received 2.4gm of the extract of the under test herb, showed in the first week an FSH values that were significant and LH values that were significant which suggest that this herb at the specified dose is both follicular stimulating hormone stimulator dose and luteinizing hormone stimulator dose, the same New Zealand rabbits that received 2.4gm of the extract of the under test herb, showed in the second week an FSH values that were significant and LH values that were highly significant which suggest that this herb at the specified dose is follicular stimulating hormone stimulator dose and luteinizing hormone stimulator dose. This is similar to another study done by Bruni JF et al. [18] on the effects of naloxone, morphine and methionine enkephalin on serum prolactin, luteinizing hormone, follicle stimulating hormone, thyroid stimulating hormone and growth hormone in which FSH and LH are both significant.

Some Side effects were observed such as indolence, loss of appetite and decreased activity of the New Zealand rabbit's

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males who are taking the treatment. Hence animal laboratory trials can be preceded into further research in clinical trials.

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