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## Review on Natural Aphrodisiac Plants and its Potential to Treat Sexual Dysfunction in Male Albino Rats

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**ABSTRACT:** In the review, we have discuss the current research done on the most popular natural aphrodisiac agent of plants origin and also examined the weight of evidence to support the use of any of these substances to enhance sexual function in male. A variety of natural sex drive enhancing agents of plants origin are known to have a potential effect on the sexual dysfunctions, supporting older claims and offering new hopes. The available synthetic drugs and treatments have limited efficacy, unpleasant side effects and contraindications in certain disease conditions. The present review, describes the detail information about the major constituents and their medicinal importance found in naturally occurring plants, which are helpful to further development of pharmaceutical formulations. In the present investigation total 3 plants were examined for their aphrodisiac activity in male albino rats as claimed by tribal of Yavatmal and Amravati districts.

**Keywords:** Sex Drive, *Moringa oleifera*, Yavatmal, Mounting Frequency, Libido, Potency

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### INTRODUCTION

Infertility is one of the major health problems in couples' lives; approximately 30% of couple's infertilities are due to male factors (Isidori *et al.*, 2006). In the last few years, a marked decrease in the quality of semen has been reported (Carlsen *et al.*, 1992). Several conditions can interfere with spermatogenesis and reduce sperm quality and production. Many factors such as drug treatment, chemotherapy, toxins, air pollution, and insufficient vitamin intake may have harmful effects on spermatogenesis and the normal production of sperm (Mosher and Pratt, 1991).

Loss of interest in sex or problems with sexual arousal makes most individuals experience and

express discomfort in their sexual behavior. Such concerns or changes may arise from an illness or disability, medication or surgical procedure, changes accompanying the aging process (Carroll *et al.*, 1996), relationship difficulties (Clement, 2002) performance anxiety (Barlow, 1986), or a combination of any of these factors. There are three basic types of sexual dysfunction; disorders of desire - takes the form of inadequate sexual desire (libido) in both sexes (Kaplan, 1995); disorders of excitement (or arousal) in men, impotence (Meana *et al.*, 1997); disorders of orgasm, includes difficulty achieving orgasm in both men and women but more common among men (Basson, 2002). Both male and female libido sexual responsiveness requires the brain and the

genitals to be supplied with adequate levels of testosterone androgens, such as testosterone, are a major component of libido. The effects of age serve as an excellent illustration of the complex interplay between physical and physiological determinants of human sexuality. Vascular diseases can impair human sexual response (De Palma, 1996). Hypertension does not directly affect erection; however, many forms of antihypertensive medication cause impotence in many patients by impairing the neurovascular reflexes (Crenshaw and Goldberg, 1996). Local thrombotic disease, such as thrombotic obstruction of the aortic bifurcation, interferes with the blood supply of the penis and cause impotence (Godschalk *et al.*, 1997).

Sexual relationships are among the most important social and biological relationships in human life. Male sexual dysfunction (MSD) affects not only sexual relationships, but also overall quality of life. MSD includes erectile dysfunction (ED), ejaculation dysfunction, and hypogonadism, and represents a serious public health problem (Ho *et al.*, 2011). ED and premature ejaculation (PE) are the two most prevalent male sexual complaints. ED, sometimes called "impotence", is the repeated inability to get or maintain a firm enough erection to allow sexual intercourse. It often has multiple underlying causes, and it has been estimated that around 1 in 10 men will experience recurring impotence problems at some point in their lives (Anonymus, 2009). Although ED does not affect life expectancy, it can have a significant negative impact on an individual's wellbeing and quality of life (Wagner *et al.*, 2000). PE is the most common sexual dysfunction among young men worldwide, with a prevalence of more than 20% (Laumann *et al.*, 2005), and is characterized by a short latency time and a lack of control over ejaculation. In men suffering from PE, not only is the latency to ejaculation typically very short (e.g., 1 or 2 min or less), but the man's perceived control of latency and the timing of ejaculation are low or absent (Rowland *et al.*, 2000).

Taking in to consideration the above mentioned circumstances, we screened some of the plants from these vast taxa so as to estimate their aphrodisiac properties in male rats. People inhabiting rural and tribal areas are using these drugs since ancient time. Unfortunately majority of those time tested drugs lack the much needed scientific basis. Thus, the present work was a step towards establishing scientific basis of some of these medicinal floras so as to overcome the

challenges imposed by the beginning of new millennium.

Such traditional knowledge form is present in two tribal's dominating areas of Maharashtra; one is Amravati district and second is Yavatmal district. The Amravati district of Maharashtra lies in close vicinity of Satpuda Mountains. The Melghat region and Satpuda Mountains of Amravati district are known for their rich flora. Some tribals of this region like *Gawali*, *Halbi*, *Gond*, *Korku*, *Nihal* and *Wanjari* have been using various plants for sexual dysfunctioning.

In Yavatmal district there are three forest divisions Yavatmal, Pusad and Pandharkawda which are rich in medicinal plants. Some tribals like *Gond*, *Kolam*, *Pradhan*, *Lohar* and *Banjara* of the area have been using various plants and their parts as medicine to check the erectile disorders.

## STUDY AREA

The Melghat region of Amravati district of Maharashtra state of India is located in 20° 11 to 21° 46 North latitudes and to 76° 38 to 77° 34 East longitudes and Yavatmal district is located in eastern (Vidarbha) region of the Maharashtra. It is located between 19° 26' to 20° 42' North latitudes and 77° 18' to 79° 98' East longitudes.

### 1. *Psoralea corylifolia* (Linn); Family: Fabaceae

*Psoralea corylifolia* (Linn) is a medicinally important plant, belonging to family Fabaceae. The plant is also well recognized in Chinese and Indian folkloric medicine (Sarawat and Chand, 2001). Survey in the tribal belt of Melghat region (20° 51 to 21° 46 N and to 76° 38 to 77° 33 E) of Amravati district of Maharashtra state of India revealed that the *Psoralea corylifolia* seeds is being used traditionally as an aphrodisiac. The seeds have been used for over many decades as traditional medicine. Evaluation of effect of the aqueous, alcohol and chloroform extract of *Psoralea corylifolia* on sexual behaviour of male albino rats. Plant extracts (aqueous, alcohol and chloroform) at doses of 100, 200 and 400 mg/kg were administrated for 21 days. The female rats involved in mating were made receptive by hormonal treatment. The general mating behaviour, libido and potency along with orientation behaviour were studied. The effect of the extract on body weight, reproductive and vital organ weight were determined. The effective chloroform extract were further studied for its effect on hormonal assay and compared with the standard reference drug sildenafil citrate. Similarly

adverse effects and acute toxicity of the extract were also evaluated. Oral administration of aqueous, alcohol and chloroform at doses of 100, 200 and 400 mg/kg were significantly increased the Mounting Frequency, Intromission Frequency and Ejaculation latency with reduction in Mounting Latency, Intromission Latency and Post Ejaculatory Interval. It also significantly increased

libido as well as Erection, Quick Flips, Long Flips and the aggregate of penile reflexes with penile stimulation. There was significant increase in level of testosterone in the serum. Oral administration of chloroform at doses of 100, 200 and 400 mg/kg were significantly increased the sperm count in experimental animal (Dabhadkar *et al.*, 2013).

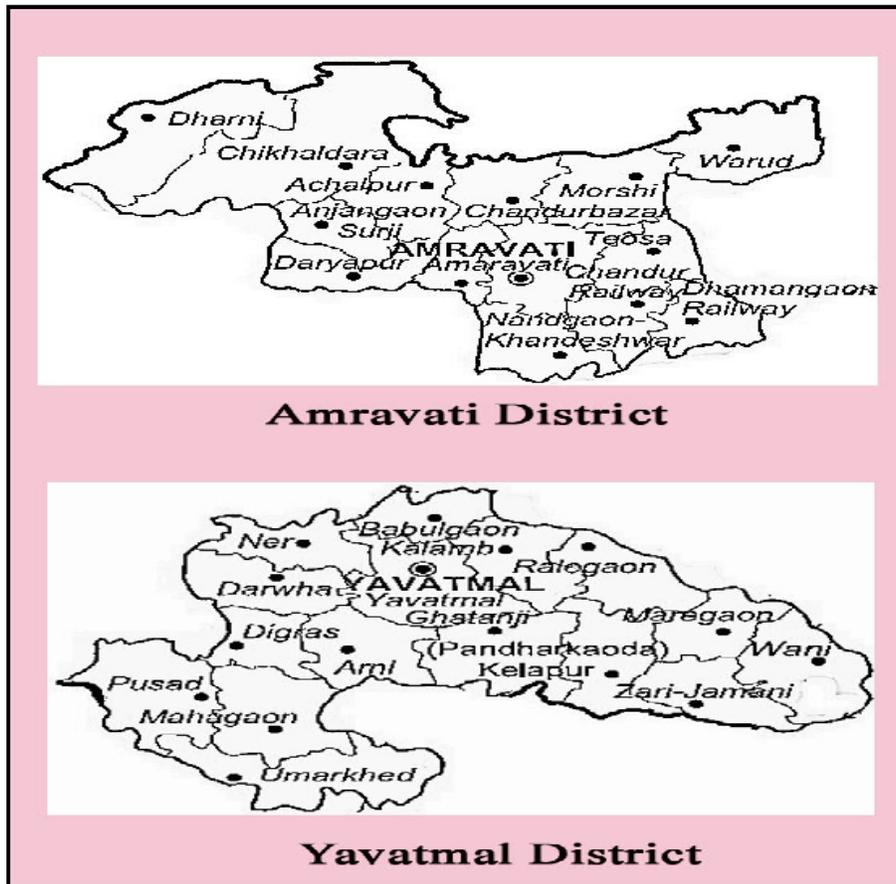


Fig. 1: Map showing the Amravati and Yavatmal district region under study.

There was significant increase in level of testosterone in the serum with increase in the LH and FSH concentration. The extract was also observed to be devoid of any adverse effects and acute toxicity. The results of the present study demonstrate that aqueous, alcohol and chloroform extract of *Psoralea corylifolia* seed enhance sexual behaviour in male rats. It also thus provides a rationale for the traditional use of *Psoralea corylifolia* as acclaimed aphrodisiac and for the management of male sexual disorders (Dabhadkar and Zade, 2013).

**2. *Hibiscus cannabinus* (Linn); Family: Malvaceae**

*H. cannabinus* L. (Malvaceae) is a woody to herbaceous annual plant producing large cream coloured flowers characterized by a reddish purple or scarlet throat, popular in the western world as “Kenaf” and widely grown as a fibre crop. It is native to China and grown widely as an ornamental plant throughout India. The *Hibiscus cannabinus* (*H. cannabinus*) seed is used for curing male infertility and impotency in traditional medicine. However, the validity has not been scientifically evaluated.

Therefore, the present study was undertaken to evaluate the effect of *H. cannabinus* seed on the sexual behaviour of male rats. Sixty six rats were randomized into five groups and were treated as one control group, three experimental and one standard group. All the extract doses resulted in significant increase in mount frequency, intromission frequency and reduction in mount and intromission latency in experimental animals. The animal group treated with *H. cannabinus* seed at dose of 400 mg/kg shows a maximum increase in the orientation activity toward female rats. This group also showed significant increase in serum testosterone concentrations. Results of this study led to a conclusion that the aqueous seed extract of *H. cannabinus* increased the blood testosterone concentrations and this may be the mechanism responsible for its aphrodisiac effects and various masculine behaviour. It may be used to modify impaired sexual functions in animals. Phytochemical screening revealed the presence of alkaloids, flavonoids, steroids, tannins and saponines (Zade *et al.*, 2013; Zade and Dabhadkar, 2013).

### 3. *Moringa oleifera* (Linn); Family: Moringaceae

*Moringa oleifera* (Linn) is a medicinally important plant, belonging to family *Moringaceae*. The plant is also well recognized in India, Pakistan, Bangladesh and Afghanistan as a folkloric medicine. Evaluation of the effect of the aqueous, alcohol and chloroform extract of *Moringa oleifera* on sexual behaviour of male albino rats. Plant extracts (aqueous, alcohol and chloroform) at doses of 100, 200 and 500 mg/kg were administered for 21 days. The female rats involved in mating were made receptive by hormonal treatment. The general mating behaviour, libido along with orientation behaviour was studied.

The effect of the extract on body weight, reproductive and vital organ weight were determined. The most effective aqueous extract was further studied for its effect on hormonal assay and compared with the standard reference drug sildenafil citrate. Similarly adverse effects and acute toxicity of the extract were also evaluated.



*Psoralea corylifolia* (Linn)



*Moringa oleifera* (Linn)



*Hibiscus cannabinus* (Linn)

Oral administration of aqueous, alcohol and chloroform extract at doses of 100, 200 and 400 mg/kg significantly increased the Mounting Frequency, Intromission Frequency and Ejaculation latency with reduction in Mounting Latency, Intromission Latency and Post Ejaculatory Interval. It also significantly increased the libido. The extract was also observed to be devoid of any adverse effects and showed negative results for acute toxicity. The results of the present study demonstrate that aqueous, alcohol and chloroform extract of *M. oleifera* seed enhance sexual behaviour in male rats. It also thus provides a rationale for the traditional use of *M. oleifera* as acclaimed aphrodisiac and for the management of male sexual disorders (Zade and Dabhadkar, 2013).

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