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Male rat mounting behavior and the effects of *Asparagus racemosus* (shatavari)

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Abstract

Asparagus racemosus, or shatavari, is a climbing plant native to India's low forests and is a member of the lily family. It has the capacity to restore pH balance to the cervix, which makes it helpful for a wide range of conditions, including infertility, low libido, miscarriage risk, menopause, and leucorrhea. This article investigates the accumulation of shatavari in male rats and reveals significant findings.

Shatavari, erectile dysfunction, and aphrodisiacs are some of the key words here.

Introduction

When a person's sexual abilities are diminished, an aphrodisiac may be utilized to improve them. Evidence suggests that these substances have been in use for quite some time; for example, Hippocrates (460 B.C.), Dioscorides (70 A.D.), Raazi (926 A.D.), Ibn-e-Sina (1038 A.D.), etc., were all Greek or Arab doctors. The traditional (Ayurveda, Siddha, and Unani) system of medicine is distinguished by the wide variety of medications used to enhance sexual performance. *Myristica fragrans* (nutmeg), *Withania somnifera* (ashwagandha), *Tribulus terrestris* (Go khru), etc. are among the most widely used plant drugs, and they are all empirically used as promising aphrodisiacs in traditional medicine practice for sexual debility or depressed desire.

Numerous plants and minerals have been shown to have aphrodisiac properties. Some well-known and not-so-well-known male and female aphrodisiacs have been discovered to truly function with our body chemistry to lead to arousal and excitement, as medical science has given us a clearer knowledge of human sexuality and our own chemical processes that put us in the mood. Now that their sources have been established, scientists may examine and better understand the chemical makeup and methods of action of a wide range of compounds with animal and plant origins. Herbal aphrodisiacs are dismissed as unlikely by many experts.

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Plant Profile

Asparagus racemosus, or shatavari, is a climbing plant native to India's low forests and is a member of the lily family. This bittersweet plant is excellent for bringing Pitta Dosha back into harmony. In India, Shatavari is identical to Ashwagandha for females. Named for the herb's rejuvenating effects on the female reproductive systems, "woman who owns 100 husbands" is a common Chinese proverb. In Australia, the plant is often used topically to heal wounds and digestive issues. Shatavari's curative properties may be used to a broad variety of illnesses. The impact on a woman's ability to have children is clearly documented. Since it benefits the body as a whole, both sexes may benefit from using it. Identification at a macroscopic level reveals that Shatavari is a thorny climber that may reach a height of up to 180 centimeters. These plants are tenacious vines that slither from bush to bush on the arid slopes of hills. The chemical components of Shatavari roots include 0.2% shatavarin I-IV, a group of four steroids saponins. Three glucose and one rhamnose moieties are connected to sarasopogenin in the main glycoside shatavarin-I, but in shatavarin-IV there are only two glucose and one rhamnose moieties. Indications include boosting sperm count, resolving alopecia, and treating genital diseases in women. It's also utilized to help the body make more milk.

Derivatives: a brew, an oil, and a powder
Effects on the Reproductive System of Treatment The primary use of shatavari roots is as a lactagogue, to stimulate the production of breast milk. Shatavari is beneficial for decreased milk production, low sex drive, menopause, and infertility, and is hence sometimes referred to as the "Female Rejuvenate." In ayurvedic medicine, the herb is used to stimulate lactation and increase milk production. In Ayurveda, *Asparagus Racemosus* is known as Jeevaneeya. Potentially, it may boost spermatogenesis by stimulating the growth of a new batch of seminiferous tubules. One of the most well-known significant therapeutic potentials of *Asparagus racemosus* is its influence on the female

reproductive system, which is why the plant is often used to treat gynecological diseases. That an alcoholic extract of *Asparagus racemosus* has anti-oxytocic action was shown in a scientific investigation. It has also been shown that the active component in *Asparagus racemosus*, a saponin known as shatavarin IV, is responsible for this effect. The specific inhibition of syntocinon, (oxytocin) induced contraction of uteri was seen in a dosage range of 20 ng to 500 ng/ml in rat, guinea pig, and rabbit uteri in vitro and in situ. Mucilaginous, antidiarrheal, refrigerant, nourishing, tonic, antidysenteric, galactagogue, aphrodisiac, demulcent, and antispasmodic are only few of the pharmacological effects. The most common use for shatavari is as a feminine rejuvenative. The capacity to regulate pH in the cervix makes it an effective treatment for infertility, low libido, miscarriage risk, menopause, and leucorrhea. Herbal demulcents are also useful for reestablishing moisture balance in dry membranes like the vaginal lining. The plant may also help males with sexual dysfunction, including impotence. Shatavari is useful not only for its effects on the reproductive system, but also on stomach ulcers, hyperacidity, and diarrhoea. Bronchitis and persistent fevers benefit from the herb's ability to calm dry, irritated membranes in the upper respiratory system. It's thought to normalize fluid levels throughout the body.

Substances and Techniques Roots for the medication were supplied in their raw, dried form; they were then ground fine in a mixer. Drugs were sieved using a No. 200 mesh sieve to produce an extremely fine powder.

Two separate samples were produced. First, a suspension was made by dissolving an authenticated sample of dried powdered Shatavari (*Asparagus racemosus*) in 1% tween-80. Second, the shatavari extract provided, which has been dissolved in water. Standard medication solution (sildenafil citrate in water) sample 3.

The animals were given each of the test medicines in separate 3000mg/kg dosages. Animals were given the standard dosage of the reference medication (5 mg/kg)

Animals

The research used 12 adult Albino rats (weighing less than 200 g each), including six males and six females. The animals were kept in sterile, controlled environments typical of laboratories. Grams, maize flour, and water from the faucet were what they consumed. The college's committee on the care and use of animals gave its approval to the research. Increased behavior or testing 10-11

By definition, mount occurs when the male enters the copulatory posture but does not successfully intromit. Mice devoid of oestrogen were mated with males given a single dosage of the medications (3000 mg/kg) in order to measure mounting behavior. The behavior of the animals was evaluated over the course of three hours. Each male was isolated in his own cage. After letting a non-oestrous female acclimate to her new environment for 15 minutes, a male was introduced to the cage. During the first 15 minutes of the first hour, the number of mounts was recorded. After 30 minutes, the woman was taken away from the group. At the third hour, the female was presented again, and the number of mounts was monitored for 15 minutes. All of the tests were done on weekday mornings between 9 and 12, with the room temperature set between 26 and 27 degrees Celsius. Shatavari and conventional Sildenafil citrate (Cavetra) were tested in separate groups of four animals each to see how they affected mounting. Before any medication was given, it was dissolved in distilled water. The first group was given a placebo of 1 milliliter of distilled water per kilogram of body weight. The standard was Cavetra (5 mg/kg), while the experimental group got Shatavari (3000 mg/kg).

Analysis of Sexual Performance

In the experiment, male rats were split into three pairs. As a baseline, group I received a saline solution of 1 ml/kg. The standard was Cavetra (5 mg/kg) in group III and a sample of Shatavari (3000 mg/kg) in group II. Each male received his medication in his own cage in the evening (about 17:00-18:00 h). Six females were placed into each cage after an hour, and they stayed together

throughout the night. After that, we kept a close eye on them for three hours and tallied how many males mounted women.

Discussion and Results

Excessive mounting behavior was seen in male rats administered with the test medication Shatavari and the gold-standard drug Sildenafil citrate (Cavetra) 1 and 3 hours after administration. While 589 male rats were mounted in the control group, 631 were mounted in the Shatavari group after 7 days, and 874 were mounted in the Sildenafil citrate (cavetra) group after 7 days. This action was discovered, however, to a greater degree in the group given the gold standard medication. Mounting behavior activity (number of mounts) in the Shatavari group was higher in the first and third hours compared to the Control group. Animals' mounting behavior improved considerably after being given the test medications. Shatavari extract (3000 mg/kg;) and Sildenafil citrate (cavetra) (5 mg/kg) were both effective in increasing the number of mounts when administered during the first three hours following treatment. The mating performance of rats was improved after receiving an extract of a single dosage of Shatavari and Sildenafil citrate (cavetra). Many different preparations of these substances are utilized in ethnomedical contexts to enhance sexual function. The results of the current investigation showed that Shatavari extracts greatly increased male sexual activity in healthy rats. Results showed that Shatavari dramatically improved the sexual behavior of male rats. However, it was proven to be quite important in cavetra-treated animals. It seems that short-term usage of these medications for this purpose is presumably safe, since they are clinically utilized in the Unani System of Medicine with no known toxicity. An increase in testosterone has been linked to improved sexual behavior in men. Alterations in neurotransmitter levels or the way medications operate on cells may potentially alter sexual behavior. It's worth noting in this context that Shatavari, in particular, is used as a sexual invigorator in several ethnomedical texts. It has also been stated that shatavari might hinder the body's digestive enzymes. This characteristic may explain the synergistic impact of Shatavari on animal sexual

behavior. The medicine had a greater impact on the rats' mating performance than on their sexual drive. Sildenafil citrate, the gold standard medication, was utilized as a comparator merely for quantitative purposes, not for any mechanistic reasons. The research used a parallel experimental strategy to gather data. Nevertheless, the twin crossover approach may be employed to provide more convincing proof of the drug's efficacy. There is a discernible pattern in the data. Systemic

administration of Shatavari extracts was shown to improve male rats' sexual behavior, according to the research. Shatavari extracts greatly improved male rats' mating performance and prompted them to engage in mounting behavior. The medications lacked any obvious short-term toxicity. The results of the experiments support the assertion made by unani doctors that Shatavari has therapeutic value as an aphrodisiac for men

Table No. 1 Mounting latency with crude drug

Days	Control		Standard		Treated	
	I	II	I	II	I	II
First	35	30	45	47	38	38
Second	40	42	50	45	30	35
Third	40	42	50	48	39	45

Table No. 2 Mounting latency with drug extract

Days	Control		Standard		Treated	
	I	II	I	II	I	II
First	40	42	55	47	40	43
Second	35	40	60	55	43	44
Third	42	44	65	57	42	44
Forth	40	37	62	60	45	42
Fifth	45	39	62	65	47	45
Sixth	50	47	67	69	50	42
Seventh	48	40	78	72	55	49

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