



## Plants as Repository of Aphrodisiacs

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## ABSTRACT

For many years people have searched for ways to achieve sexual desire, sexual health and sexual techniques. This has led to the development and use of different substances known as aphrodisiacs to attain the desired excitement. An aphrodisiac can therefore be described as any substance that enhances sex drive and/or sexual pleasure. Aphrodisiac can also be viewed as any food, drug, scent or device that can arouse or increase sexual drive or libido. The present work is an attempt to assess the plants/parts possessing aphrodisiac property or activity

**Key words:** Medicinal plants, Aphrodisiacs, Sex, Kama Sutra, Drugs

## Introduction

Natural products like plants represent promise of cure for almost of all kinds of diseases, as they have been the raw materials for the synthesis of drugs and as an important source of new therapeutic agents [1, 2]. It is estimated that 60% of the world population and 80% of the population of developing countries rely on traditional medicine, mostly plant drugs, for their primary health care needs [3]. India officially recognizes over 3000 plants for their medicinal value. It is generally estimated that over 6000 plants in India are use in traditional, folk and herbal medicine [4]. The products from these plants are used to cure disease from mild fever to most deadly like cancer. Of these erectile dysfunction (i.e. inability to achieve and maintain an erection sufficient for mutually satisfactory intercourse with his partner) is one of the serious medical and social symptoms that occur in men. The problem of erectile dysfunction can be over come by use of substances known as aphrodisiacs. These substances take their name from Aphrodite (etymology: "foam-born") the Greek goddess of love, and have been used throughout all times with the purpose of increasing desire and drive associated with the sexual instinct. The *Oxford English Dictionary* defines an aphrodisiac as "A drug or preparation inducing venereal desire". Venereal desire is often described as the sexual appetite, and can be understood as a desire for sexual stimulation. In theory, an aphrodisiac is strictly an agent which arouses or increases sexual desire, but in practice anything which increases the capacity for sexual enjoyment will tend to increase the appetite and can be considered as an aphrodisiac. There seems to

be no limit to the credulity of man in his pursuit of aphrodisiacs, and it has been possible to compile a catalogue of over 500 animal, vegetable, and mineral substances which have, at some time, been evocated for their aphrodisiac properties [5]. References to such substances have crept into holy texts from the *Kama Sutra* and the Bible to the Koran and the literature from Shakespeare and Ovid to Gilbert and Sullivan plays in the twentieth century [6].

Table 1: Plants with aphrodisiac property /activity

Sr.No	Botanical name	Common name	Family	Part used	References
1	<i>Abelmoschus moschatus</i>	Musk mallow	Malvaceae	Seed	[7,8].
2	<i>Abrus preatorius</i> Linn.	Ganja	Fabaceae	Seed	[9].
3	<i>Abrus preatorius</i> L.	Crab's Eye	Papilionaceae	Seed	[10,11].
4	<i>Abutilon indicum</i> (Linn.) Sweet	Thuthi	Malvaceae	Seed, root, bark,leaf	[7].
5	<i>Acacia catechu</i> Willd.	Catechu	Mimosaceae	Heartwood	[7,12]
6	<i>Acacia nilotica</i> L. Willd.	Gum Arabic tree	Fabaceae	Bark	[13].
7	<i>Aconitum heterophyllum</i> Wall.	Attesh	Ranunculaceae	Root	[14].
8	<i>Acorus calamus</i> Linn.	Sweet flag	Araceae	Rhizome	[7,15,16].
9	<i>Actinopteryg radiata</i> Sw.Link.	Morshikha	Actinopterygidae	Whole plant	[17].
10	<i>Alchornia floribunda</i> Mull. Arg.	Niando	Euphorbiaceae	Root	[18].
11	<i>Allium sativum</i> L.	Garlic	Liliaceae	Bulb	[7,10,19, 20 21]
12	<i>Allium tuberosum</i> Rottl	Chiense chive	Zingiberaceae	Seed	[22, 23, 24].
13	<i>Aloe excels</i> Berger	Zimbabwe Aloe	Asphodelaceae	Leaf	[25].
14	<i>Alpinia galanga</i> Willd.	Java galangal	Zingiberaceae	Rhizome	[7, 26]
15	<i>Anacyclus pyrethrum</i> DC	Akarkara	Asteraceae	roots	[27,28]
16	<i>Argyria nervosa</i>	Adhoguda	Convolvulaceae	Root	[29]
17	<i>Asparagus racemosus</i> Willd.	Asparagus	Liliaceae	Root	[7,8, 30, 31]
18	<i>Bauhinia tomentosa</i> Linn.	Manja Mandaram	Caesalpinaceae	Seed	[7]
19	<i>Bauhinia vahlii</i> W.&A.	Camel's Foot climber	Caesalpinaceae	seed	[7]
20	<i>Bauhinia variegata</i> Linn.	Bauhinia	Caesalpinaceae	Bark	[7]
21	<i>Benincasa hispida</i> (Thumb.) Cogn.	Ash gourd	Cucurbitaceae	Fruit	[7]
22	<i>Boesenbergiarotunda</i> L.	Temu kunci	Zingiberaceae	Rhizome	[22, 32, 33]
20	<i>Bombax ceiba</i> Linn.	Silk-Cotton Tree	Bombacaceae	Bark	[7]
23	<i>Bussea occidentalis</i> Hutch	Kpayeli	Caesalpinaceae	Bark, seed	[34]
24	<i>Butea frondosa</i> Roxb.	Flame-of-the-forest	Fabaceae/ papilionaceae	Whole plant	[7,35,22]
25	<i>Butea superba</i> Roxb	Red kwao kruva	Fabaceae		[36]
26	<i>Cannabis indica</i> L.	Indian hemp	Cannabaceae	Leaf	[37]
27	<i>Capparis erythrocarpa</i> Isert.	Pitipiti	Capparidaceae	Root	[38]
28	<i>Capsicum annum</i> L.	Capsicum	Solanaceae	Seed	[39]
29	<i>Carpotobia alba</i> G. Don	Poor man's candle	Polygalaceae	Stem bark, Twig	[40]
30	<i>Cassia occidentalis</i> Linn.	Kasondhi	Fabaceae	Leaf	[41]
31	<i>Cassia sieberiana</i> DC	African laburnum	Caesalpinaceae	Leaf	[34]
32	<i>Chenopodium album</i> L.	White goosefoot	Chenopodiaceae	Seed	[42,43, 44]
33	<i>Chione venosa</i> (Sw.) Urb.	fatpork	Rubiaceae	Bark and roots	[45]
34	<i>Chlorophyllum tuberosum</i> Baker.	Safed musli	Liliaceae	Whole plant	[34, 46]
35	<i>Cissus quadrangularis</i> Linn.	Ediblestemmedvine(Dalziel)	Vitaceae	Root	[7]
32	<i>Cocculus cardifolia</i> Linn.	Guduchi	Menispermaceae	Stem, leaf,Root	[47]
33	<i>Cocos nucifera</i> Linn.	Coconut	Arecaceae	Endosperm	[9, 19, 48]
34	<i>Cola acuminata</i> Schott.	Cola	Malvaceae	Seed	[49]
35	<i>Cola caricaefolia</i> G. Don	Bumoguan	Sterculiaceae	Leaf	[34]
36	<i>Cola gabonensis</i> Schott & Endl.	Kola nut	Sterculiaceae	Fruit	[18]
37	<i>Cola nitida</i> Schott & Endl.	Kola nut	Sterculiaceae	Seed	[18]
38	<i>Cola pachycarpa</i> Schott & Endl.	Kola nut	Sterculiaceae	Seed	[18]

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Sr.No	Botanical name	Common name	Family	Part used	References
39	<i>Cola rostrata</i> Schott & Endl.	Kola nut	Sterculiaceae	Seed	[18]
40	<i>Commiphora caudata</i> Wt. & Arn.	Emporium of medicinal plants	Burseraceae	Root, leaf	[7]
41	<i>Commiphora mukul</i> Hook. ex Stocks	Indian bdellium tree	Burseraceae	Root, leaf	[7]
42	<i>Coriandrum sativum</i> Linn.	Coriander	Apiaceae	Leaf	[42]
43	<i>Corynanthe pachycerus</i> KSchum.	Ivory coast	Rubiaceae	Stem, Bark	[38]
44	<i>Crocus sativus</i> Linn.	Saffron	Iridaceae	Stigma	[22]
47	<i>Cucurbita pepo</i> L.	Pumpkin	Cucurbitaceae	Seed	[7]
45	<i>Curculigo orchioides</i> Gaertn.	Musali	Hypoxidaceae/ Amaryllidaceae	Rhizome	[7, 8, 41, 50, 51]
46	<i>Curcuma amada</i> Roxb.	Mango ginger	Zingiberaceae	Rhizome	[7, 8]
48	<i>Cymbopogon citrates</i> (DC.) Stapf	Lemongrass	Poaceae	Whole plant	[7]
49	<i>Dactylorhiza hatagirea</i> (D. Don) Soo.	Marsh Orchis	Orchidaceae	Root	[14, 22,52, 53]
50	<i>Dalbergia sissoo</i> Roxb.	Shisham	Fabaceae	Wood	[41, 42]
51	<i>Daucus carota</i> L.	Carrot	Umbelliferae	Root	[52]
52	<i>Desmodium gangeticum</i> (Linn.) DC.	Desmodium	Fabaceae( Papilionaceae)	Root	[7]
53	<i>Dioscorea bulbifera</i> Linn.	Wild Yam	Dioscoreaceae;	Whole plant	[41]
54	<i>Diospyros melanoxylon</i> Roxb.	East Indian ebony	Ebenaceae	Flower	[7, 41]
55	<i>Drypetes roxburghii</i> (Wall.)Huru.	Putjev	Euphorbiaceae	Leaf juice	[41]
56	<i>Durio Zibenthinus</i> Murr.	Durian Fruit	Bombacaceae	Fresh fruit	[22, 53]
57	<i>Echinacea purpurea</i> L.	Indian head, combflower	Compositae	Leaves	[54]
58	<i>Ekerbegia capensis</i> Sparm.	Isongoroit	Meliaceae	Root	[25]
59	<i>Emblca officinalis</i> Gaertn.	Emblc	Euphorbiaceae	Fruit	[55, 56]
60	<i>Eriodendron anfractuosum</i> DC.	White silk cotton tree	Bombaceae	Whole plant	[47]
61	<i>Eriosea kraussianum</i>		Papilionaceae	Roots	[45]
62	<i>Euadenia eminens</i> Hook.f.	Dinsinkro	Capparidaceae	Root	[38]
63	<i>Euphorbia hirta</i> L.	Dudhi	Euphorbiaceae	Leave	[7, 34]
64	<i>Euphorbia hirta</i> L.	Asthma weed,Cat's hair	Euphorbiaceae	Whole plant	[40]
65	<i>Eurycoma longifolia</i> Jack	Tongkat Ali	Simarubaceae	Whole plant	[22,57, 58,59, 60,61,62,63, 64,65, 66]
66	<i>Fadogia agrestis</i> Schweinf.Ex Heim	Black aphrodisiac	Rubiaceae	Stem	[22, 67, 68]
67	<i>Ficus religiosa</i> Linn.	Peepal tree	Moraceae	Bark	[7]
68	<i>Flueggea virosa</i> Roxb. exWilld.	White-berry bush	Euphorbiaceae	Whole plant	[49]
69	<i>Garcinia afzelii</i> Engl	Bitter kola	Guttiferae	Bark	[34]
70	<i>Garcinia kola</i> Heckel	Bitter kola	Guttiferae	Leaf, seed	[34]
71	<i>Glycyrrhiza glabra</i> Linn.	Liquorice	Papilionaceae	Root	[7]
72	<i>Gmelina arborea</i> Roxb.	Coomb teak	Verbenaceae	Fruit	[7]
73	<i>Grewia asiatica</i> L.	Phalsa	Tiliaceae	Fruit	[42]
74	<i>Harissonia abyssinica</i> Oliv	Zigua	Simaroubaceae	Bark	[34]
75	<i>Hibiscus rosa-sinesis</i>	China rose	Malvaceae	Leaf	[7]
76	<i>Hibiscus sabdariffa</i> Linn.	Roselle	Malvaceae	Seed, leaf	[7]
77	<i>Holostemma ada-kodien</i> Schult.	Holostemma	Asclepiadaceae	Root	[7]
78	<i>Hygrophila schulli</i> (Ham.)M R. & S. M. Almeida	Marsh Barbel	Acanthaceae	Root, leaf, Seed	[7]
79	<i>Ipomoea mauritiana</i> Jacq.	Giant potato	Convolvulaceae	Root	[7]
80	<i>Lagenaria vulgaris</i> Ser.	Bottle gourd	Cucurbitaceae	Fruit	[7]
81	<i>Landolphia dulcis</i> (Sabi)Pichon	Hama-fufu	Apocynaceae	Root, Bark	[38]
82	<i>Lepidium meyenii</i> Walp.	Maca	Brassicaceae	Root	[22, 69, 70, 71]
83	<i>Mangifera indica</i> L.	Mango	Anacardiaceae	Bark	[7]
84	<i>Maranta arundinacea</i> Linn.	Arrowroot	Zingiberaceae	Rhizome	[7]
85	<i>Massularia acuminata</i>	Chewing stick	Rubiaceae	Stem bark, Root	[40]
86	<i>Maytenus senegalensis</i> (Lam.) Exell	Confetti Tree	Celastraceae	Leaves, Stem,Root	[40]
87	<i>Mezoneuron benthamianum</i> Baill	Senegal	Caesalpiniaceae	Twig or Stem	[34]
88	<i>Mimosa pudica</i> L.	Thottasiniki	Mimosoideae	Aerial part	[72]
89	<i>Mirabilis jalapa</i> L.	Four o' clock plant	Nyctaginaceae	Root	[56]
90	<i>Momordica charantia</i> Descourt.	Bitter Melon	Cucurbitaceae	Leaf	[73]
91	<i>Mondia whitei</i> Linn.	White's ginger	Periplocaceae	Root	[22, 25, 74, 75, 76]
92	<i>Montanoa tomentosa</i> Cerv.	Zoapatle	Asteraceae	Whole plant	[22,77]
93	<i>Mucuna pruriens</i> Linn. DC.	Poonai kali	Fabaceae	Seed, pod	[41]
94	<i>Musa paradisiaca</i>	plantain	Musaceae	Leaves, roots, fruits	[78, 79, 80, 81, 82]
95	<i>Myristica fragrans</i> Houutt.	Nutmeg	Myristicaceae	Seed	[22, 82]
96	<i>Nerium indicum</i> Mill.	Kaner/Kanail	Apocynaceae	Roots	[41]
97	<i>Oxyanthus umilocularis</i> Hiern	Ghana akan	Rubiaceae	Fruit, leaf	[34]
98	<i>Palisota hirsuta</i> K. Schum.	Ghana	Commelinaceae	Leaf	[22, 83]
99	<i>Papaver somniferum</i> L.	Poppy plant	Papaveraceae	Flower	[7]
100	<i>Passiflora incarnata</i> L.	Wild Passion Flower	Passifloraceae	Leaf	[22, 84]
101	<i>Pausinystalia yohimbe</i> (K.Schum.) Pierre	Yohimbin	Rubiaceae	Bark	[85]
102	<i>Phoenix dactylifera</i>	Date palm	Arecaceae	Pollen	[45]
103	<i>Piper betle</i> Linn.	Vettrilai	Piperaceae	Leaf	[72]
104	<i>Piper guineense</i> Schumach.& Thonn.	West African Pepper	Piperaceae	Root	[38]
105	<i>Piper officinarum</i> DC	Chavica officinarum	Piperaceae	Fruit	[7]
106	<i>Polyalthia suaveolens</i> Engl.& Diels	Polyalthia	Annonaceae	Fruit, root, leaf	[18, 86]
107	<i>Polygonatum multiflorum</i> (L.) All	Solomon's Seal	Liliaceae	Root	[14]
108	<i>Psoralea coryifolia</i>	Bavaci	Fabaceae	Fruit	[45]
109	<i>Punica granatum</i>	Pomegranate	Punicaceae	Fruit	[87]
110	<i>Rauwolfia vomitoria</i> Afzel	poison devil's pepper	. Apocynaceae	Root	[88, 89]
111	<i>Rhododendron anthopogon</i> D. Don	Ballu	Ericaceae	Leaf, flower	[14]
112	<i>Rhododendron lepidotum</i> Wall. ex D. Don	Snow Rose	Ericaceae	Leaf, flower	[14]
113	<i>Ricinus communis</i> L.	Castor	Euphorbiaceae	Seed	[7]
114	<i>Rosa damascena</i> Mill	Rose	Rosaceae	Petal	[90]
115	<i>Ruta chalepensis</i> L.	Garden rue	Rutaceae	Leaves	[91]
116	<i>Saccharum spontaneum</i> Linn.	Kasa	Poaceae	Root stock	[9,19]
117	<i>Santalum album</i> Linn.	Sandalwood	Santalaceae	Heart wood	[91]
118	<i>Satureja khuzestanica</i> Jamzad		Lamiaceae	Aerial parts	[45]
119	<i>Scindapsus officinalis</i> Schtt.	Gajapipali	Arecaceae	Fruit	[9,19]
120	<i>Securidaca longepedunculata</i> Slash	Violet tree	Polygalaceae	Root bark	[22, 92]
121	<i>Sesamum indicum</i> Linn.	Tilli / Til	Pedaliaceae	Seed	[ 41]
122	<i>Sida cordifolia</i> Linn.	Countary-mallow	Malvaceae	Root, seed	[ 7 ]
123	<i>Solanum indicum</i> Linn.	Indian night Shade	Solanaceae	Root	[7]

Sr.No	Botanical name	Common name	Family	Part used	References
124	<i>Solanum melongena</i> Linn.	Brinjal	Solanaceae	Unripe fruit	[7]
125	<i>Solanum nigrum</i> L.	Aguaragua	Solanaceae	Berries	[7]
126	<i>Sphaeranthus africanus</i> Linn.	Botobotonisan	Asteraceae	Whole plant	[7]
127	<i>Stereospermum suaveolens</i> DC.	Atkapali	Bignoniaceae	Root, bark, flower	[7, 93]
128	<i>Strychnos nux-vomica</i> Linn.	Strychnine tree	Loganiaceae	Seed	[7]
129	<i>Syzygium aromaticum</i> (L.) Merrill & Perry	Clove	Myrtaceae	Dried flower Bud	[22, 94, 95]
130	<i>Tabernanthe iboga</i> (L.) Nutt.	Iboga	Apocynaceae	Root, stem, bark	[18, 96]
131	<i>Tabernanthe manii</i> Baill.	Tabernanthe	Apocynaceae	Root	[18, 96]
132	<i>Tamarindus indica</i> L.	Tamarind	Fabaceae	Bark	[97]
133	<i>Tamarix aphylla</i> (L.) Karst	Athel tamarisk	Tamariaceae	Bark	[42]
134	<i>Taxus baccata</i> Linn.	Birmi	Taxaceae	Leaf	[7, 9]
135	<i>Terminalia arjuna</i> Roxb. ex DC	Arjuna	Combretaceae	Bark	[7]
136	<i>inialia catappa</i> L.	India almond, Umbrella tree	Combretaceae	Stem bark, Kernel (Seeds)	[40]
137	<i>Tinospora cordifolia</i> (Willd) Miers Hk.	Tinospora	Menispermaceae	Whole plant	[7, 8]
138	<i>Tribulus terrestris</i> L., fruit	Puncturevine	Zygophyllaceae	Seed	[22, 98, 99, 100, 101, 102]
139	<i>Trichopus zeylanicus</i>	Senna	Trichopodaceae	Leaves	[103]
140	<i>Trichosanthes dioica</i> Roxb. Wild	snake-gourd	Cucurbitaceae	Flower, fruit	[7]
141	<i>Turra heterophylla</i> Sm.	Ahunanyakwa	Meliaceae	Root, bark, Seed	[38]
142	<i>Tynanthus panurensis</i> (Bur.) Sandw.	Clavo huasca	Bignoniaceae	Bark, wood	[104, 105]
143	<i>Valeriana jatamansi</i> Wall	Jatamansi	Valerianaceae	Root	[106]
144	<i>Vanda tessellata</i> (Roxb.) Hook. ex Don.	Rasna	Orchidaceae	Root, flower	[22, 107, 108]
145	<i>Withania somnifera</i> Linn.	Indian Ginseng	Solanaceae	Root, Leaf	[7], 42, 41, 51]
146	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Ivory tree	Apocynaceae	Leaf, bark, Seed	[7]
147	<i>Zingiber officinale</i> Roscoe	Gingembre	Zingiberaceae	Rhizome	[49]

### Aphrodisiacs in Indian Histry

The first report discussing sexual pathological disorders dates back 3,000 to 4,000 years, when medical information was passed from one generation to the next through oral poems among the Hindu population [109]. These poems were finally inscribed around 2,000 to 1,000 B.C. and one of them (*Samhita of Sushruta*) already reported the pursuit for substances to enhance sexual experience [110].

Among the numerous classical works in Sanskrit literature on the subject of love, the most famous remain the *Anunga Runga*, written by the poet Kullianmull in the fifteenth century, and the *Kama Sutra*, composed by Vatsyayana some time between the first and fourth centuries A.D. The latter is still celebrated and translations of the book are read widely all over the world. There is a short chapter in the *Kama Sutra* which explains the methods for "attracting others to oneself", including magic rituals, natural remedies of different potencies and general advice [111]. Some local plants and animals used as ingredients for the recipes have not been identified yet due to their indecipherable Sanskrit names, increasing the mystery concerning the Hindu aphrodisiacs.

Most of the methods reported in the *Kama Sutra* to increase the sexual vigor of a man include milk and honey. These have always been recognized as food able to produce endurance and energy, as already described by Greek and Roman writers. These two main ingredients, the immediate source of energy for employing in physical activity, are often combined with generative organs of animals, considered in organotherapy as the basis of sexual potency. Many other recipes are described in the *Kama Sutra* but the ingredients are not likely to have anything more than a physiological effect upon sexual desire. The use of highly nutritious food substances (ghee, milk, eggs and honey) in these recipes could have an explanation. In a society where the normal diet tends to be deficient in proteins and essential vitamins, the addition of extremely nutritious supplements would increase the physical vigor and treat a loss of sexual appetite due to a deficient diet. These pseudo-aphrodisiacs bring no benefits to individuals on equilibrated diets and sometimes their over-use can even be damaging.

More directly acting sexual stimulants are described in the seventh part of the *Kama Sutra* which is dedicated to the occult practices (Aupanishadika). The components of these stimulant mixtures involve principles used as aphrodisiacs by other cultures. A mixture of powdered thorn-apple seeds, black pepper (*Piper nigrum* L., Piperaceae), long pepper (*Piper longum* L., Piperaceae) and honey, applied on the penis before coitus, is reputed to make a woman subject to the man's will. The four principles have a specific function in the aphrodisiac mixture which has a completely rational basis for its action. The thorn-apple seeds (*Datura stramonium* L., Solanaceae) contain atropine and scopolamine, which are potent tropane alkaloids inducing an initial excitement followed by sedation and hallucinations. These two constituents are adsorbed through the mucous membranes of both the penis and the vagina, and have a central nervous system action producing behavioral effects in both partners [112]. The peppers have a counter-irritant or rubefacient action,

increasing the blood flow around the area of application. In the man, this local inflammation helps the development and maintenance of an erection, while, in the woman, the irritation of the clitoris increase the sexual desire. Another rubefacient plant, ginger (*Zingiber officinale* Rosc., Zingiberaceae), is described in the *Kama Sutra* and employed by man to increase potency. The honey is used for an easier application of the mixture and as a useful lubricant.

### Male sexual function

Sexual stimulation of the human male results in a series of psychological, neuronal, vascular, and local genital changes [40]. At least three different classifications for these changes have been described. [113] described a psychosexual response cycle that consists of four phases: excitement, plateau, orgasm, and resolution. Another classification by [114] based on penodynamic changes during the sexual cycle divides each of the psychosexual phases into two interrelated events as excitement into latency and tumescence; plateau into erection and rigidity; orgasm into emission and ejaculation; and resolution into detumescence and refractoriness. The third classification by [115] focuses on the functional activities during the sexual cycle by adding an initial phase of desire or libido. Thus, the normal male sexual response cycle can be functionally divided into five interrelated events that occur in a defined sequence: libido, erection, ejaculation, orgasm, and detumescence [40].

#### 1. Libido or sexual desire

Libido is defined as the biological need for sexual activity (the sex drive) and frequently is expressed as sex-seeking behaviour. Its intensity is variable between individuals as well as within an individual over a given time. Higher serum testosterone appears to be associated with greater sexual activity in healthy older but not younger men [116].

#### 2. Erection

Erection is the enlarged and rigid state of the sexually aroused penis sufficient enough for vaginal penetration. It results from multiple psychogenic and sensory stimuli arising from imaginative, visual, auditory, olfactory, gustatory, tactile, and genital reflexogenic sources [40].

#### 3. Ejaculation

Ejaculation is the act of ejecting semen. It is a reflex action that occurs as a result of sexual stimulation. It is made up of two sequential processes. The first process called emission is associated with deposition of seminal fluid into the posterior urethra while the second process is the true ejaculation, which is the expulsion of the seminal fluid from the posterior urethra through the penile meatus [40].

#### 4. Orgasm

This is the climax of sexual excitement. The entire period of emission and ejaculation is known as the male orgasm [117].

#### 5. Detumescence

This is the subsidence of an erect penis after ejaculation (Wagner, 1981).

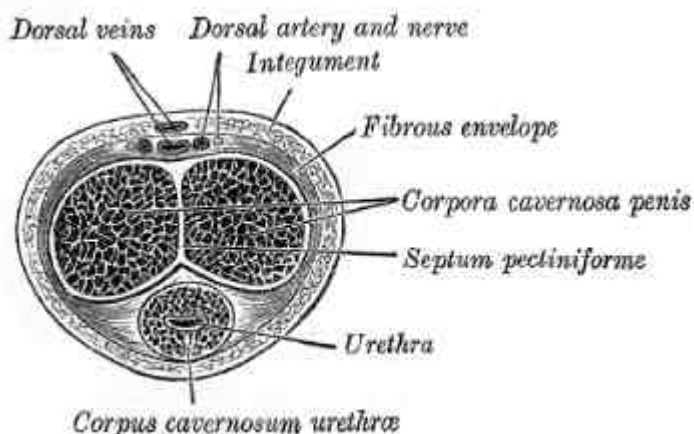


Fig 1: Transverse section of the penis.

### Mechanism involved in Aphrodisiac potentials

Penile erection is a hemodynamic process involving relaxation of smooth muscle of the corpus cavernosum and its associated arterioles. This relaxation process results in an increased flow of blood into the trabecular spaces of the corpora cavernosa [118]. Smooth muscle relaxation is mediated by Nitric oxide (NO) which, on sexual stimulation (visual or otherwise), is released in the nerve terminals of parasympathetic non-adrenergic, non-cholinergic neurons in the penis and also by the endothelial cells of blood vessels and corpora cavernosa [119]. NO activates guanylate cyclase which increases the conversion of guanosine triphosphate (GTP) to cyclic guanosine monophosphate (cGMP). This latter provides the signal which leads to relaxation of smooth muscle of the corpus cavernosum and the penile arterioles. The erection caused by this relaxation ceases after a while because cGMP is hydrolyzed to guanosine 5'-monophosphate (GMP) by cyclic nucleotide phosphodiesterase (PDE) isozymes. Of the PDE isozyme families known, only PDE5 and PDE6 are specific for cGMP as a substrate. PDE3 and PDE4 are specific for cyclic adenosine monophosphate (cAMP), and PDE1 and PDE2 hydrolyze both cGMP and cAMP. Therefore, substances that inhibit cGMP hydrolysis increase the cGMP signal, enhancing the relaxation of smooth muscles in the corpus cavernosum and facilitating penile erection. [120]

### CONCLUSION

The proverbial belief that the world is conditioned by love is not an unfounded saying. It is not surprising that man has incessantly pursued every means, every obscure aid, to maintain his amorous faculties. sexual potency is part of the male ego, and the anxiety and the humiliation that are associated with a declining sexual ability are common to all cultures. The eternal dream of man and woman have always been the possibility of increasing, preserving and recapturing their sexual capacity, or of stimulating the sexual desire of selected members of the opposite or same sex by various means. Erotic vigor, in all its varying manifestations, has become for man a prior interest, and woman the complement in this function which were possible due to aphrodisiacs. All the plants mentioned in this review exhibited significant aphrodisiac activity and can be an effective, probably because of reduced side effects, its ready availability and reduced cost.

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