


Review Article
MUSALI – A DIVINE HERB WITH ITS MEDICINAL USES
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ABSTRACT

Musali is one of the reputed drug mentioned in the ancient books of Ayurveda and Siddha. It is good for all round development of health "*Musali*" is called as Divine Medicine for its medicinal qualities. *Musali* is also called *Talamuli*, *Suvaha*, *Talamulika*, *Deerghakandika*, *Talapatri* in Ayurveda. Acharya Charaka describe *Musali* in the treatment of respiratory disorders. *Sushruta* mentioned it in the treatment of Urolithiasis and in the treatment of Chronic obstructive pulmonary disease. In *Rajnighantu* it has been described as sweet, cooling, mucilaginous, increase *Kapha* and reduces *Pitta daha* (burning sensation), act as stimulant, gives strength. It is one of the important *Rasayana* drugs of Ayurvedic Materia Medica for vigour and vitality. It is an important ingredient of many Ayurvedic preparation and is considered to have aphrodisiac, immunostimulant, hepatoprotective, antioxidant, anticancer and antidiabetic activities. Hence the present study include its general introduction its type, *Ayurvedic literature*, pharmacological activities and variable uses of *Musali* in several disease.

KEYWORDS: *Musali*, *Talapatri*, *Talamuli*, *Rasayan* drug, Aphrodisiac, Hepatoprotective.

INTRODUCTION

Musali is a very popular herb in traditional Indian medicine and constitute a group of herbs used as "*Rasayana*" or adaptogen. Generally, it is considered very good to increase general body immunity. Its aphrodisiac properties has proved very much useful for the people suffering from erectile dysfunction and to increase male potency^[1]. According to *Raj nighantu* there are two varieties of *Musali* which are used for medicinal purpose, *Safed musali* and *Kali musali*. *Safed musali* is white in colour and is obtained from various plant species like *Asparagus adscendens* Roxb. and *Chlorophytum borivillianum* belongs to the family *Liliaceae*. *Kali musali* is black in colour and is obtained from plant *Curculigo orchioides* Gaertn. belongs to family *Amaryllidaceae*^[2]. *Kali musali* is tonic for health and cures general weakness. It has tonic, aphrodisiac, demulcent, diuretic properties and used in asthma, impotency, jaundice, skin, urinary and veneral disease^[3].

Botanical Origin

Curculigo orchioides Gaertn.

Family : *Amaryllidaceae*^[4]

Sanskrit Synonyms

Musali, *Talamuli*, *Suvaha*, *Talamulika*, *Godhapadi*, *Hempushpee*, *Bhootalee*, *Varahi*, *Deerghakandikaa*, *Talapatrikaa*.^[5,6,7]

Talamuli, *Talamulika* and *Talapatrika* – are applied because of the resemblance of the roots of the plants to that of *Tala*.

Deerghakandikaa – means elongated underground stems.

Bhootalee – means a ground palm.

Hempushpee – flowers are bright yellow.

Musali – it will cuts through the *Doshas* and cures the diseases.^[8]

Scientific Classification^[9]

Table 1: Showing the Scientific classification of *Curculigo orchioides* Gaertn.

Kingdom	Plantae- Plants
Subkingdom	Tracheobionta
Superdivision	Spermatophyta
Division	Magnoliophyta
Class	Monocotyledon
Subclass	Liliidae
Order	Liliales
Family	Amaryllidaceae
Genus	<i>Curculigo</i>
Species	<i>orchioides</i>

Regional name^[10,11]

Table 2: Showing the Regional name of *Curculigo orchioides* Gaertn.

Hindi	<i>Musalikand</i> , <i>Syah musali</i>
English	Golden Eye Grass, Ginseng, Black musali
Bengali	<i>Tala-muli</i>
Kannad	<i>Nelta</i> , <i>Nelatale</i>
Malayalam	<i>Nilapana</i> , <i>Nilappana</i>
Marathi	<i>Mushli</i>
Oriya	<i>Talmuli</i> , <i>Talamulika</i>
Tamil	<i>Nilappanai</i>
Telugu	<i>Nel tadigadda</i>
Gujrati	<i>Kali musali</i>

Punjabi	<i>Syah musali</i>
Assamese	<i>Talmuli, Tailmuli</i>
Marathi	<i>Kali musali, Bhuimaddi</i>

Botanical Description

Roots of plants are tuberous about 4 inches long with bitter and mucilaginous taste.

Rootstock is straight, cylindrical, tuberous, 5-22 cm long, 0.5-0.8 cm thick, brownish surface marked with closely spaced prominent transverse wrinkles in the upper basal half. It bears a few stout lateral roots of 5 or more cm long. Lateral roots are dull white in colour and spongy externally. The fresh cut surfaces of the rootstock has a starch white colour and mucilaginous.

Leaves are sessile or short petiolate with sheathing bases, 15-45 × 1.2-2.5 cm size, linear or linear lanceolate, membranous, glabrous or sparsely softly hairy and plicate in bud. The leaf tips when contacts the soil, develops roots and produce adventitious buds.

Inflorescence is axillary, scapose racemose, the scape very short and hidden among the bases of leaves underground, clavate, flattened with the pedicels, bracts and the ovary concealed in the leaf sheaths.

The lower big flowers on the scape are mostly bisexual and the upper small ones staminate.

Flowers are epigynous bright yellow, bisexual or unisexual with lanceolate, membranous bract. Perianth gamophyllous, rotate and six lobed, locate at the top of a slender sterile long extension of the ovary by means of which the perianth is exposed above the ground, perianth lobes similar, elliptic oblong 1.2-1.6 cm long, 0.2-0.3 cm broad, outer lobes hairy on the back, inner ones sparsely hairy along nerves.

Stamens are 6 in number, filamentous filiform, short 2 mm long, adnate to the base of the perianth lobes, anthers linear or linear lanceolate, basifixed and sagittate. Ovary inferior, hidden among the leaves usually below the ground, tricarpeal syncarpous, lanceolate and trilocular with a fairly long slender beak or extension the stipe.

Ovules many in each cell attached by a distinct long funicle. Style short columnar 2 mm with a 3 lobed stigma. Lobes are elongate, erect and appressed.

Fruits is a capsule about 1.5-2 cm long, 8 mm broad, oblong, glabrescent with a slender beak and spongy septa. Seeds 1 to many, oblong, black, shiny with crustaceous testa grooved deeply in wavy lines.^[12]

Distribution

The plant is distributed in the sub-tropical Himalayas from Kumaon eastwards, the khasia hills, Bengal, Assam, Konkan, Kanara, the Western peninsula and Madras extending to Kanya-Kumari. Plants was observed growing in the patches in the pine Ranikhet and adjoining areas (Kumaon hills).

It remains dormant from early winter till the break of the monsoon. Flowering occurs in August and early September.^[13]

Ayurvedic Properties and Pharmacological Action^[14]

Rasa (taste on tongue) – *Madhur* (sweet), *Tikta* (bitter)

Guna (pharmacological action) – *Guru* (heavy), *Picchila* (slimy)

Virya (action) – *Ushna*

Vipaka (transformed state after digestion) – *Madhur*

Action

Shramahara – take away of fatigue or *Shrama*

Pittahara – anti-bilious

Vrishya – aphrodisiac

Rasayana – tonic

Pustiprada – nourishes body

Balaprada – gives strength

Shukral – increase the quantity and improve the quality of the *Shukra dhatu*.

Mutral – diuretic

Classical Review

Acharya *Charak* first mentioned in the treatment of respiratory disorders (C.S.C.18/74)^[15]. *Sushruta* quoted it in the treatment of urolithiasis (S.S.CI.7/18)^[16] and in the treatment of chronic obstructive pulmonary disease (S.S.Ut.51/39)^[17]. *Vagbhata* for the first time introduced the term *Musali* in the context of hyper pigmentation of skin as external application (A.H.Ut.32/21)^[18]. *Sarangdhara* mentioned *Musali* in *Vrsya* group of drugs (Sa.Sam.Ma.Kha.4)^[19]. *Raj Nighantu* include it under *Mulakadi varga*^[20]. *Bhavprakash Nighantu* has described it in *Guduchayadi varga*^[21]. *Kaiydev Nighantu* has mentioned it under *Aushadhi varga*^[22]. *Madanpala Nighantu* include it under *Shaka varga*^[23]. *Priya Nighantu* has described it under *Satpushpadi varga*^[24]. *Shodhala Nighantu* has mentioned it under *Laksmanadi varga*^[25].

Research Studies

➤ Hepatoprotective activity

Hepatoprotective activities of *Curculigo orchioides* against rifampicin-induced hepatotoxicities and also isolated curculignin A and *Curculigol* and screened for their anti-hepatotoxic activity against thioacetamide and galactosomine-induced hepatotoxic.^[26,27]

➤ Antioxidant activity

Anti-oxidant activity of *Curculigo orchioides* in carbon tetrachloride-induced hepatopathy in rat. Alcoholic extract was found to be extremely effective in scavenging superoxide radical whereas activity was moderate in scavenging DPPH radical, nitric oxide radical and in inhibition of lipid peroxidation.^[28]

➤ Immunomodulatory activity

Immuno-stimulant activity in purified glycoside-rich fraction isolated from the ethyl acetate extract of *Curculigo orchioides*^[29]. Methanol extract produced an increase in humoral antibody titre, delayed-type hypersensitivity when studied on humoral and cell-mediated immunity in normal, as well as cyclophosphamide-induced immunosuppressed mice.^[30]

➤ Aphrodisiac activity

Ethanol extract of *Curculigo orchioides* rhizome at a dose of 100 mg/kg. Extract significantly changed the sexual performance as assessed by determining different

parameters such as mating performance, mount frequency and latency, penile erection. It also increased spermatogenesis and orientation behaviour in male rats. The lyophilized aqueous extract of the plant showed significant improvement in sexual activity at a dose of 200 mg/kg body weight.^[31]

➤ **Spermatogenic activity**

Ethanol extract of rhizome of *Curculigo* for its effect on orientation behaviour and spermatogenesis in albino rats. They observed a change in orientation behaviour towards female, environment and self. Administration of 100 mg/kg b.w. of ethanolic extract had pronounced effect on orientation of male towards the female rats.^[32]

➤ **Antiasthmatic activity**

Ethanol extract of rhizome of *Curculigo orchioides* showed antiasthmatic activity against histamine-induced contraction when used with isolated goat tracheal chain preparation and isolated guinea pig ileum preparation.^[33]

➤ **Antibacterial activity**

Root oil of *Curculigo orchioides* showed significant antimicrobial activity against various bacteria strains such as *Bacillus anthracis*, *Bacillus subtilis*, *Salmonella pyllorum* and *Staphylococcus aureus* and fungi stains such as *Fusarium monili forme*, *F. solani*, *Aspergillus flavus* and *Cladosporium*.^[34]

➤ **Anticonvulsant activity**

Ethanol extract of *Curculigo orchioides* showed adaptive effects, such as enhancing tolerance towards high temperature and hypoxia. Ethanolic extract also showed sedative, anticonvulsant and androgen-like effect.^[35]

➤ **Antitumor activity**

Antitumor activity was screened against a human breast cancer cell line (MCF-7).^[36]

➤ **Cardiovascular activity**

A major chemical constituent curculigoside, present in *Curculigo orchioides* can protect endothelial cells against oxidative injury induced by H₂O₂, suggesting that this compound may constitute a promising intervention against cardiovascular disorders.^[37]

➤ **Central nervous system activity**

A major bioactive component of *Curculigo orchioides* protects brain against ischemia and reperfusion injury with a favourable therapeutic time-window by alleviating cerebral ischemia and reperfusion injury and attenuating blood brain barrier breakdown and its protective effect may involve HMGB 1 and NF κ B signalling pathway.^[38]

Medicinal Uses

✓ **Retention of urine**

Decoction of *Talapatri* should be used in retention of urine.

✓ **As Rasayana**

Satavari, *Mundi*, *Guduchi*, *Hastikarnapalasa* and *Talamuli*- all in equal parts are powdered. It is mixed with ghee or honey and taken. It acts as *Rasayana* and promotes *Dhatu*s and strength.

✓ **As Aphrodisiac**

Regular use of the powder of *Krsna musali (Talamuli)* mixed with ghee acts as aphrodisiac.

✓ **Deafness**

One should take powder of *Musali* and *Bakuchi* in order to alleviate deafness.^[39]

✓ To brightens face complexion, *Curculigo* is prepared paste with goat's milk or honey and used over face.

✓ The drug is given with warm milk and sugar for treatment of menorrhagia, leucorrhoea, gonorrhoea, dysuria and menstrual derangements.

✓ *Curculigo* juice is applied on cuts and wounds and considered as an effective anti-infective and healing agent.^[40]

✓ A decoction of the powdered rhizome with the crushed *Ajowain* (fruits of *Trachyspermum ammi*) is effective in kids to gain consciousness. Rhizome have been contested for the antidiabetic properties in many research studies.^[41]

✓ Juice of the tuber of *Curculigo orchioides* is mixed with the juice of garlic (*Allium sativum*) and used as eye drop to cure blindness and white spot on the eye ball.

✓ In *Laddu* preparation, 50 gm is widely used in female after her delivery, it is so beneficial to the same to cure her indigestion, loss of appetite and arthritis during postpartum.

✓ In obstruction of the urine, its seeds should be taken along with jaggery or water.

✓ The plant root is carminative, tonic, bitter, sweet, antipyretic, useful in ophthalmia, indigestion, bronchitis, dyspnoea, gonorrhoea, vomiting, diarrhoea, pain in joints, etc., as per Unani system of medicine. ^[42]

Ayurvedic Preparation of Musali

Musali paka, *Musalyadi churna yoga*, *Musalyadi yoga*, *Loh-rasayana*, *Saubhagya sunthi*, *Kamesvara modaka*, *Siva modaka*, *Candanadi churna*, *Vidaryadighrta*, *Vidaryadi lehya*.^[43]

CONCLUSION

Musali is a unique gift of nature to mankind since the time immemorial under the Indian system of medicine. It is a chief ingredient of many *Ayurvedic* formulation and used as a potent '*Rasayana*' drug in *Ayurveda* as a rejuvenator, a vitalizer and health-giving tonic, a curative for pre-natal and post-natal problems, a restorative for immunity-improvement and as a potent aphrodisiac. As it has tremendous properties which can be utilised for health improvement of human beings, thus the need of the hour is comprehensive training and education in sustainable means of farming and preserving this priceless gem of the plant kingdom.

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