

Orchids as valuable folklore medicine: A Review

Abstract

The impetus of writing this paper is to review various medicinal orchid species growing in different parts of India. The family orchidaceae is one of the diverse group among angiosperms which includes different types of orchid species. This paper is written to review the medicinal and therapeutic importance and use of different orchid species for treatment of various types of diseases. Orchids are herbaceous plants which are mentioned in ancient ayurvedic system of medicine because of their therapeutic properties. Most of the medical orchid species are epiphytic and terrestrial in habitat.

Key words: Orchid, medicinal use, therapeutic, angiosperms, epiphytic, terrestrial.

Introduction

Although Orchids are considered to be highly useful ornamental plants and these plants are known for their therapeutic properties. The family orchidaceae is the most advanced and they are the largest families of angiosperms with numerous hybrids varieties of orchids (Chugh *et al.*, 2009). They are present through-out the world but there is an exception of -Antarctic region and some desert area (Sazak and Ozdener, 2006). The application of various known varieties of orchids in conventional folklore system is customary and they are widely accepted and appreciated as they have high content of alkaloids, glycosides, phenols, and phyto-chemicals (Duggal, 1972; Bersa *et al.*, 2011).

Therapeutic values play a very important role- in native system of medicine for treatment of various afflictions. Due to some ignorance and incomplete knowledge, some people are unaware of the fact that how important orchids are. Some species are studied here to acquaint people and buoy up them to use local orchids as conventional folklore medicine in treatment of various afflictions.

Comment [U1]: Orchidaceae

Comment [U2]: Orchidaceae

Comment [U3]: varieties

Comment [U4]: Bersa *et al.*, 2011

Comment [U5]: knowledge, some

Comment [U6]: unaware of the importance of orchids

Comment [U7]: acquaint people and buoy them up

Jivanti, *Jivaka*, *Rishbhaka*, *Rasna*, *Manakanda*, *Pancagula* are some orchid species used in Ayurveda. used in Ayurveda are some orchid species. There are approximately 50 species of orchids which are mainly used in the field of medicine (Uniyal MR, 1997). Orchids like *Jivanti* and *Rasna* are have been widely used in ayurvedic drug preparation from past for many centuries. Species like *Vanda roxburghii*, *Orchislatifolia*, *Dendrobiumnobile* has have demonstrated many medical and therapeutic values. Pharmacological studies of orchid species are showing that they are having many antifungal, antibacterial, anti-inflammatory properties and some healing specialities potentials (Ahmed F et al., 2002).

Species like *Vanilla planifolia* has commercial as well as medicinal use as it is having properties of bioactive chemical compounds and they also behave as flavoring agents sometimes. The roots of orchids are dried and chopped, than then used as anti-depressant medicine and also as nutritive drinks. In ayurvedic formulation of Chyavanprash, it has very important Astavarga drug which is group of eight medicinal plants out of which four plants belong to family orchidaceae, these four species are *Malaxismuscifera* (*Jivaka*), *Malaxisacuminata* (*Risabhaka*), *Habenariaintermedia* (*Riddhi*) and *Habenariaedgeworthi* (*Vrddhi*) (Chauhan, 1999).

Comment [U8]: What is Chyayanprash?

Stem and leaves of *Dendrobium* genus are used as tonic for the treatment of many skin disorders, aphrodisiac, anti-diabetics and also used to treat pulmonary tuberculosis (Wu et al., 2004).

Gastrodiaelata treats vertigo, headache and many cardio-vascular diseases. For this treatment, leaves and stems of the plant are used mostly to treat different types of bleeding conditions like from gastrointestinal, cough blood, hemorrhoid, are cured. Roots, leaves, flowers of vanda plants are used for healing rheumatism, nervous disorder and inflammation. *Hebenaria* plant is helpful as it behaves as tonic for general body debility and aphrodisiac. Plants parts such as pseudobulb of *Cymbidium* is used as salep, their pseudobulb is dried and grinded to powder and taken orally in empty stomach (Kumar, 2002).

Comment [U9]: What is salep?

Review of Literature

Medicinal and therapeutic value of orchids:

The orchids are best known from the Vedic period, orchids species like *Vanda tessallata* (*Rasna*) and *Flickingeria Amacrai* (*Sanjeevani*) have medicinal importance which are mentioned in Rig Veda and Atharva Veda. Since the age of SushrutaSamhita and CharakhaSamita they discovered many species of orchids which are very well known for their therapeutic and medicinal utility. The term orchid was discovered by Theophrastus. There are about 25,000 species of orchids that are one of the most advanced and large monocot family orchidaceae among division angiosperms (Chung *et al.*, 2009). This family has very important value as floricultural appeal due to their extremely beautiful and vibrant flowers with spectacular area of variation in floral shape, coloration, size and fragrance (Nongdam and Nirmala, 2009). If we talk about the medicinal value they contain high amount of glycosides, phytochemicals, phenols they are not just beautiful (Duggal, 1972; Besea *et al.*, 2011). There are about 8 biodiversity hotspots in the North East region of the India and they have approximately 876 species of orchids which is 70% of Indian flora (Medhi and Chakravarti, 2009). The natural products from these plants, have been used as a main source of herbal medicines for more than 40,000 years for treatment of various diseases (Shafaei *et al.*, 2011).

Acampe papillosa is an epiphytic orchid which grows on large tree trunks in deciduous forest. This orchid species is mainly present in India, Myanmar, Nagaland. Roots of plant are used for curing eye diseases, controlling asthma, secondary syphilis and some mild uterine infections. *Malaxis muscifera* (Lindl) its common name *Jivaka*, the plant part used is pseudobulb which is used to treat male fertility and decoction is used in fever and burning limbs (Hossain, 2011).

Terrestrial orchid *Arundina graminifolia* which is commonly called as Bamboo orchid is growing in areas grassy hillsides. This species flowers during June to October. Plant has rich content of stilbenoids, flavonoids, and phenanthrene derivatives. Its rhizome is used to control bacterial infection and root decoction is used for curing diabetes, tumor, hyperliposis and hepatitis (Kumar, 2002). *Dendrobium candidum* is small epiphytic orchid which is growing on branches of densely forest area. Its leaves are used to cure diabetics and show anti-hyperglycemic effect because it stimulate secretion of insulin from beta cells and inhibit glucagons secretion (Wu *et al.*, 2004).

Habenaria pectinata is large terrestrial orchid species having erect stem, sessile leaves are present. Leaves of this plant are crushed and paste is formed which is used during snake bites

and tubers are used for curing arthritis (Chauhan, 1999). *Nerviliaargagaona* is terrestrial orchid species which is growing in rainforest having erect bulb which is kidney to heart shaped. Its parts like tuber and leaves pounded to make paste and used as ointment for healing wounds, mild mental diseases, diarrhea, asthma, cough and vomiting (Yoganarasimhan, 1996).

Vanda roxburgii is epiphytic orchid species which is commonly called as Rasna growing on tree trunk and branches. Its roots, leaves and flowers are used to form paste and juice by boiling or pounding in powder ~~form~~ ~~from~~ ~~for~~ which many inflammatory conditions are cured and also instilled in ear to treat otitis (Chawalet *et al.*, 1992).

Luisiatrixorhiza is epiphytic species which climbs on branches and old trees in dense forest. All parts of plant are used in medicine. ~~its~~ paste is formed which ~~is then is~~ taken ~~on an~~ empty stomach with water for curing jaundice (Das *et al.*, 2008). *Rhynchostylisretusa* commonly called as Fox tail which is an epiphyte grows on branches of trees growing in deciduous dry forests. Plant part like roots are used to make medicine to cure blood dysentery, its paste is made with leaf buds of *Pisumsativum* for treatment. This species is used as emollient and paste of leaf is applied on wounds (Deorani and Sharma, 2007).

The epiphytic orchid species *Vanda coerulea* is commonly called as Blue Vanda which grows on the branches and tree trunk of deciduous forest trees. Leaves are used as expectorant, its flowers are used to make juice which help in curing eye problems like glaucoma, cataract and blindness (Deorani and Sharma, 2007). *Renantheraaimschootiana* is epiphytic species which is commonly known as Red Vanda grows on shrubs, tree trunks and branches of lowland forest trees. Its leaves are dried and grinded to make paste for curing skin disease (Deorani and Sharma, 2007).

Comment [U10]: The paper will be more interesting to readers if you highlight all species of epiphytic and terrestrial orchids and their uses each as sub-headings

CONCLUSION:

The investigation carried out on medicinal use of orchid species shows the utility of these species in treatment and remedies of different affliction in native and traditional system of medicine has been properly examined.. This will impute to increase the usage and practical application of local orchids for the therapeutic and medicinal usage in different areas. Many orchid species have anti-

bacterial, anti-inflammatory, anti-hyperglycemic, anti-pyretic, etc. properties for curing diseases. Diseases like cancer, asthma, secondary syphilis, burning sensation, mild uterine diseases, eye problems, swelling, tuberculosis, diabetes, skin diseases, arthritis, jaundice, etc. are treated with different parts of orchid plants.

NOTE:

The study highlights the efficacy of " ayurvedic " which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

REFERENCES:

Ahmed F, A. Sayeed, A. Islam, S.M. Abdus Salam, G. Sadik, M.A. Sattar and G.R.M. A.M. Khan Antimicrobial activity of extracts and a glycoside from *Vanda roxburghii* R.Br. *Pak J Biol Sci.* 2002;5:189–91.

Besra, R.C. L. Majhee and J. Sharma, 2011.Evaluation of phytochemical, antioxidant and hepatoprotective activity of tuber of *Geodorum laciflorum* Griff. *J. Pharmacol. Toxicol.*, 6: 610-623.

Chauhan, N.S., 1999. Medicinal and Aromatic Plants of Himachal Pradesh. Indus Publishing New Delhi, India, ISBN: 9788173870989, Pages: 632.

Chawla, A.S., A.K. Sharma, S.S Handa and K.L. Dar, 1992. Chemical studies and anti-inflammatory activity of *Vanda roxburghii* roots. *Ind. J. Pharma Sic.*, 54: 159-161.

Chugh, S., S. Guha and IU.Rao, 2009.Micropropagation of orchids: A review on the potential of different explants. *Sci. Hortic.*, 122: 507-520

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Das, P.K. S. Sahoo and S. Bal, 2008. Ethnobotanical studies on orchids of Niyamgiri Hill Ranges, Orissa, India. *Ethnobot.Leaft.*, 12: 70-78.

Deorani, S.C. and G.D. Sharma, 2007. Medicinal Plants of Nagaland. Bishen Singh Mahendra Pal Singh, New Delhi, ISBN: 9788121106016, Pages: 396.

Duggal, S.C., 1972. Orchids in human affairs. *ActaPhytother.*, 19: 163-167.

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Hossain, M.M., 2011 Therapeutic orchids: Traditional uses and recent advances-An overview. *Fitoterapia*, 82: 102-140.

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Kumar, S., 2002. The Medicinal Plants of North-east India. Scientific Publishers, Judhpur, India, ISBN: 9788172332822, Pages: 212.

Medhi, R.P. and S. Chakrabarti, 2009. Traditional knowledge of NE people on conservation of wild orchids *Indian J. Traditional Knowl*, 8: 11-16.

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M.R. Uniyal, 1997. Medicinal plants and minerals of Utrakhand Himalaya, Baidyanath, Ayurveda shodhsanstha, Ptana.

Nongdam, P. and C. Nirmala, 2012. In vitro seed germination and mass propagation of *Cymbidium dayanum* Reichb.: An important ornamental orchid of North-east India. *Trends Hortic. Res.*, 2: 28-37.

Nongdam, P. and N. Chongtham, 2011. In vitro rapid propagation of *Cymbidium aloifolium* (L) Sw: A medicinally important orchid via seed culture, *J. Biol. Sci.*, 11: 254-260.

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Rao, N.R. and AN. Henry, 1996 The Ethnobotany of Eastern Ghats in Andhra Pradesh, India. *Botanical Survey of India*, India, Pages: 259.

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Sazak, A. and Y. Ozdener, 2006. Symbiotic and asymbiotic germination of endangered *Spiranthes spiralis* (L) Chevall. and *Dactylorhiza osmanica* (Kl.) SoA var. *Osmanica* (Endemic). *Pak. J. Biol. Sci.*, 9: 2222-2228.

Formatted: Font: Italic

Shafaei, A., E. Farsi, B.M.K. Ahamed, A. Siddiqui, L.H. Attitalla, I. Zhan and M.Z. Asmawi, 2011. Evaluation of toxicological and standardization parameters and phytochemical investigation of *Ficus deltoidea* leaves. *Am. J. Biochem. Mol. Biol.*, 1: 237-243.

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Wu, H.S., J.H. Xu, L.Z. Chen and J. Sun, 2004.[Studies on anti-hyperglycemic effect and its mechanism of *Dendrobium candidum*]. *China J. Chin. Mater. Med.*, 29: 160-163.

Formatted: Font: Italic

Yoganarasimhan, S.N., 1996. Medicinal Plants of India: Karnataka. Vol. 1, Interline Publishing, India, ISBN: 9788172960568, Pages: 237.

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