

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 medicinal 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 affliction. 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 local people and buoy up them to use local orchids as conventional medicine to treat various afflictions.

Jivanti, Jivaka, Rishbhaka, Rasna, Manakanda, Pancagula that are used in Ayurveda are the species belonging to family orchidaceae. There are approximately 50 species of orchids which

are mainly used in field of medicine (Uniyal., 1997). Orchids like *Jivanti* and *Rasna* are widely used in ayurvedic drug preparation from past many centuries. Species like *Vanda roxburghii*, *Orchis latifolia*, *Dendrobium nobile* has 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 (Ahmed *et al.*, 2002).

Species like *Vanilla planifolia* has commercial as well as medicinal use, as it is loaded with bioactive chemical compounds which shows its medicinal potential and also imparts flavor in different products for instance in bakery, pediatric medicines, cosmetics etc. The roots of orchids are dried and chopped, and used as anti-depressant medicine and nutritive drinks. In ayurvedic formulation of Chyavanprash, the Ashtavarga drug, is an assemblage of eight medicinal herbs and out of these, four herbs belong to family orchidaceae, these four species are as follows:- *Malaxis muscifera* (*Jivaka*), *Malaxis acuminata* (*Risabhaka*), *Habenaria intermedia* (*Riddhi*) and *Habenaria edgeworthi* (*Vrddhi*) (Chauhan,1999).

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

Another orchid *Gastrodia elata* treats vertigo, headache and many cardio-vascular diseases; its leaves and stem are used mostly to treat different types of bleeding conditions such as from gastrointestinal, cough blood, hemorrhoids. The roots, leaves, flowers of *Vanda* plants are used for treating rheumatism, nervous disorders and inflammation. The herb *Habenaria* is used as a tonic to overcome general body debility and it also act as an aphrodisiac. Another genus of orchidaceae such as *Cymbidium* is also known for its therapeutic value as its pseudobulbs are used as salep; these pseudobulbs are dried and grinded to powder and taken orally in empty stomach (Kumar, 2002).

Review of Literature

Medicinal and therapeutic value of orchids:

The orchids are best known from the Vedic period era. Various orchids species like *Vanda tessellata* (*Rasna*) and *Flickingeria macraei* (Sanjeevani!) have medicinal importance which are

mentioned in Rig Veda and Atharva Veda. Since the age of Sushruta Samhita and Charakha Samita, many species of orchids, that are discovered later, possess therapeutic and medicinal utility. The term orchid was discovered by Theophrastus. There are about 25,000 species of orchids that are assembled under one of the most advanced and large monocot family orchidaceae in plant group angiosperms (Chung *et al.*, 2009). This family is very important as it possess floricultural value due to their extremely beautiful and vibrant flowers with wide range of floral shapes, coloration, size and fragrance (Nongdam and Nirmala, 2009). Besides having floricultural value, they also contain high amounts of glycosides, phytochemicals, phenols (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 40000 years for treatment of various diseases (Shafaei *et al.*, 2011).

Acampe paplillosa is epiphytic orchid which grow on large tree trunks in deciduous forests. 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* is commonly called *Jivaka*; its pseudobulbs are used to treat male fertility and the decoction is used in lowering down fever and overcoming burning in limbs (Hossain, 2011).

Terrestrial orchid *Arundina graminifolia*, which is commonly called as Bamboo orchid is grows in grassy hillside habitats. This species flowers during June to October. This plant is rich in bioactive compounds such as 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). Another orchid, *Dendrobium candidum*, a small epiphytic orchid in size grows on branches of trees growing in dense forests. Its leaves are used to cure diabetics and stimulates secretion of insulin from beta cells and inhibit glucagons secretion (Wu *et al.*, 2004).

The terrestrial orchid named *Habenaria pectinata*, grows in grassy hill slopes possess erect stem, and sessile leaves. Leaves of this plant are crushed to paste which is used to cure snake bites and tubers are used for curing arthritis (Chauhan, 1999). One more orchid, *Nervilia argagaona* which is a terrestrial orchid species grows in rainforests having erect kidney to heart shaped bulbs. Its

parts like tuber and leaves are crushed to make fine paste and used as an ointment to heal wounds, to treat mild mental diseases, diarrhoea, asthma, cough and vomiting (Yoganarasimhan, 1996).

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

Another orchid *Luisia trichorhiza* is epiphytic orchid species, which inhabits the branches of old trees in thick dense forests. All parts of this plant are used to make paste which is taken empty stomach with water for curing jaundice (Das *et al.*, 2008). *Rhynchosstylis retusa* commonly called as 'Fox tail' is an epiphyte that grows on branches of trees growing in deciduous dry forests. Its roots are used to make medicine to cure blood dysentery; 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). *Renanthera imschootiana*, an 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).

Conclusion:

Many orchid species possess anti-bacterial, anti-inflammatory, anti-hyperglycemic, anti-pyretic properties for curing diseases. The investigation carried out on medicinal use of orchid species shows the utility of orchid species in treating various 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. This will help to increase the usage and practical application of local orchids for the therapeutic and medicinal use in different areas.

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

Das, P.K. S. Sahoo and S. Bal, 2008. Ethnobotanical studies on orchids of Niyamgiri Hill Ranges, Orissa, India. *Ethnobot. Leaflet.*, 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. *Acta Phytother.*, 19: 163-167.

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

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.

Uniyal, M.R. 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.

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.

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.

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.

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