

Orchids of Shimla hills: A mini review

Abstract

The objective of writing this review is to explore medicinal orchids species growing in Shimla hills. Family orchidaceae is one of the vast groups among angiosperms which incorporate numerous types of Orchids species. The family is known for cheered ornamental hybrids. Orchids are having varied colourful and designed flowers. This paper is written to review the medicinal importance and use of different species of orchids for the treatment of various diseases. Since ancient times, orchids are used in traditional medicinal system such as Yunani, Homeopathy, Ayurveda and Siddha.

Keywords: - Orchids, Shimla hills, medicinal importance, monocot, angiosperm.

Introduction

The hills of Shimla, located in 31.61° N 77.10° E, are found in the southwest of the Himalayas (Collett, 1902); have a luxuriant reservoir of medicinal and other useful plants (Atkinson, 1882). The vast range of topography, altitude, and climate makes Himachal Pradesh a home to a wide variety of plants and animals (Balokhra, 1995; Chauhan, 1999). The hills of Shimla are enriched with flora diversity, described by the works of Sir Henry Collett in *Flora Simlensis* (Atkinson, 1882). Shimla and the adjacent hills of the north-western Himalayas are very rich in orchid flora up to 62 species are reported from here and include 6 that are endemic (Deva and Naithani, 1986; Vijet *et al.*, 1982). Collett (1902) has reported 38 species of orchids enclosed in 18 genera growing in Shimla and adjoining hills. Orchids are undoubtedly the ornamental elite due to their surprisingly intricate flowers of exquisite beauty. The reason is that today the orchids became a multi-million dollars trade item (De and Pathak, 2015). Many of these herbs are used in traditional medicine, also in today's therapeutic practices. The family, well known for several highly regarded native hybrids, includes nearly 800 genera and 25,000 species distributed throughout the

world. In this paper we discuss some species of orchids growing in Shimla hills including *Malaxis acuminata*, *Habenaria intermedia* and *Cypripedium reginae* etc.

Chemical constituents and Pharmacological profile

The chemical components of orchids are alkaloids, flavonoids, bibenzyl, phenanthrenes, and terpenoids. These are found in roots, leaves, flowers, and complete plant (Gutiérrez, 2010). Over the centuries, various health promoting benefits, including diuretic, antirheumatic, antitumor, antimicrobial, anticonvulsant, relaxant, neuroprotective and antiviral activities (Gutiérrez, 2010). Table 1 figure 1 (A-E) shows orchid species with their medicinal uses.

Table 1:-Shows orchid species with their botanical and common name and medicinal uses.

Botanical Name	Common Name	Medicinal and Other Uses
<i>Malaxis acuminata</i>	Jeevak	Aphrodisiac, febrifuge and tonic. treats fever, tuberculosis, burning sensations, and general debility (Khare, 2007).
<i>Habenaria intermedia</i>	Vridhi, Ridhi	Tubers are used in medicines in Indian system of medicine, as a health tonic, ashtavarga group (which is a combination of eight vitalizing herbs), and in preparation of ayurvedic tonic 'Chyawanprash'. Tender leaves and tubers are edible and used as vegetables (Bulpittet <i>al.</i> , 2007 and Vij, 1995).
<i>Cypripedium reginae</i>	showy lady's slipper	Treats anxiety, dermatitis, toothache, headache, as an antispasmodic, and sedative. <i>Cypripedium parviflorum</i> and <i>Cypripedium acaule</i> , used topically or as a type of tea (Cichoke, 2001; Khare, 2007).
<i>Dendrobium longicornu</i>	long-horned <i>Dendrobium</i>	Treats fever and cough, as well as a tonic to produce body fluids and nourish stomach pain (Bulpittet <i>al.</i> ,

2007;Vij,1995).

<i>Zeuxine strateumatica</i>	soldier orchid	The plant is used as a salep. Tubers and pseudobulbs used as a restorer. Used in folk medicine (Bulpitt, 2005; Bulpitt, <i>et al.</i> , 2007 and Vij, 1995).
<i>Rhynchostylis retusa</i>	Foxtail Orchid	Leaves cure rheumatism. Root juice is applied to wounds and cuts (Basumatary and Ahmed, 2004).
<i>Platanthera edgeworthii</i>	Edgeworth's <i>Habenaria</i>	Powder used as a blood purifier (Basumatary and Ahmed, 2004).
<i>Pholidota articulata</i>	Rattlesnake orchid	Entire plant is used as a tonic. Root in powder form is used to treat cancer; berry juice is used to the treatment of ulcers and rashes (Basumatary and Ahmed, 2004).

Theophrastus first used the Latin word "orchis" to refer to a particular group of plants and the roots of these plants that were used in the traditional pharmacopoeias of Greece and neighbouring Asia Minor as an antidepressant and stimulant. A particular European genus, and the name of the whole family is also derived from it: Orchidaceae. Collett (1902) described thirty eight species of orchids in eighteen genera from Shimla and surrounding hills. Shimla and the adjacent hills of the north-western Himalayas are very rich in orchid flora up to 62 species are reported from here and include 6 that are endemic (Deva and Naithani, 1986; Vijet *al.*, 1982).

Conclusion

Orchids are famous for their beautiful unique flowers and very little is known about their herbal uses. However, several compounds are isolated from almost all parts of these herbs. Compounds have been isolated and tested in animal models, but in clinical trials with orchid plant parts have not been a regular practice.

According to the World Health Organization (WHO), in all 80% population globally depends on herbal formulations. Due to the numerous side effects of allopathic drugs, herbal medicines can

be popularized. The present generation can be alerted and motivated to use herbal products. More research on medicinal plants for human well-being can be promoted and carried out.

Further research is still needed to fully recommend orchids for therapeutic purposes. So far negligible efforts are made to cultivate medicinal orchids on commercial scale. Many therapeutic species of orchids are now threatened and can be saved with human support only.

NOTE:

The study highlights the efficacy of "Ayurveda" 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.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly used products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

References

1. Atkinson, E.T.1882. Economic Botany of the Himalayan Region. Cosmo Publications, New Delhi.
2. Basumatary, S.K. and Ahmed, M.J.2004. Some medicinal plant leaves used by Boro (Tribal) people of Goalpara district, Assam Natural Product Radiance 3:88-90
3. Balokhra, J.M.1995. The wonderland Himachal Pradesh. H.G. Publications, New Delhi.

4. Bulpitt,C.J. 2005. The uses and misuses of orchids in medicine. *Q. J. Med.*, 98: 625-631.
5. Bulpitt,C.J.,Li,Y.,Bulpitt,P.F.,Wang, J.2007. The use of orchids in Chinese medicine *J. R. Soc. Med.*, 100(12):558-563.
6. Chauhan, N.S.1999. *Medicinal and Aromatic Plants of Himachal Pradesh*. Indus Publ. Co., New Delhi.
7. Cichoke, A. J.2001. *Secrets of Native American herbal remedies: a comprehensive guide to the Native American tradition of using herbs and the mind/body/spirit connection for improving health and well-being*. Penguin Patnam Publishers,New York.
8. Collett, H. 1902. *Flora Simlensis: A Handbook of the Flowering Plants of Simla and the Neighbourhood*. Thacker, Spink and Co. Calcutta and Shimla.
9. De, L. C. and Pathak,P. 2015. Value addition in orchids. *J.Orchid Soc. India*, 29: 31-37.
10. Deva, S. and Naithani,H.B. 1986. *The Orchid Flora of North-West Himalayas*. Print and Media Associates. New Delhi. *Flowers of India*.
11. Khare, C.P. 2007. *Indian Medicinal Plants: An Illustrated Dictionary*. Springer Science and Business Media, LLC.
12. Gutiérrez, R.M.P. 2010. Orchids: A review of uses in traditional medicine, its phytochemistry and pharmacology. *Journal of Medicinal Plants Research*. 4(8): 592-638.
13. Vij,S.P. 1995. Orchid genetic diversity in India: Conservation and Commercialization. In: *Proceedings of the 5th Asia Pacific Orchid Conference and Show, Fukuoka, Japan*,pp.20-39.
14. Vij, S.P., Toor, I.S., Shekhar,N. 1982. Obseruuuion., on the orchidaceous flora of Shimla and adjacent hills in the N.W. Himalayas (Ecology and distribution). *Research Bulletin (Science) Punjab University*, 33: 163-75.



Figure 1 (A-E), A. *Malaxis acuminata* (<https://en.wikipedia.org/wiki/Malaxis>); B. *Habenaria intermedia* (<http://www.flowersofindia.net/catalog/slides/Intermediate%20Habenaria.html>); C. *Cypripedium reginae* (<https://www.orchidweb.com/orchids/other-orchids/species/cypripedium-reginae>); D. *Zeuxine strateumatica* (<https://www.pinterest.fr/pin/24769866687027248/>); E. *Platanthera edgeworthii* (<http://www.orchidspecies.com/platedgeworthii.htm>)