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REVIEW ARTICLE

Common medicinal orchids of India

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ABSTRACT

Herbal plants play a significant role in curing diseases. In India, traditional healers play a vital role in using such knowledge to cure certain diseases. Since orchid is the second largest family of flowering plants, they possess major active compounds that can be used to treat various diseases such as inflammation, fever, eye diseases, earache, cuts, wounds, stomach problems, etc. Major plant parts used for medicinal purposes are leaves, flowers, tubers, and roots. Many researchers work on pharmacological values, and phytochemical analysis to determine its medicinal properties. Various secondary compounds are alkaloids, flavonoids, saponins, terpenoids, tannins, and phenolic compounds. Many orchids possess antibacterial, antipyretic, antidiabetic, anti-oxidant, and anti-arthritis. Unfortunately, due to unavoidable factors, it is declining quickly within no time. Illegal trading, mining, and over-exploitation are major factors in decreasing orchid diversity. Therefore, some orchids are unexplored and some have less documentation was carried out. Therefore, an attempt has been made to compile the data on literature aspects on some medicinal orchids available in India so they could be potent for future drug formulations.

INTRODUCTION

Orchids are one of the most diverse groups and beautiful plants. It is ranked as the second-largest family of flowering plants globally and possesses the smallest seed in the world. India is designated as an herbal place as it is a storehouse of numerous medicinal plants. India has a complex topography and varied climatic conditions and has very rich biodiversity (Barman et al 2016). All over the world over 25000 species of 800 genera of orchid species. In India, nearly 1141 species of 166 genera of orchid species are used as traditional and folklore medicines to cure various diseases (Chowlu et al. 2017; Khajuria et al. 2017). Orchids are mostly found worldwide except in cold regions of the Arctic, deserts, aquatic and marine ecosystems. It is one of the few plants with bilateral symmetry. It plays a vital role in the environment, acting as a keystone species for the health of the ecosystem. It is also an indicator of a healthy forest. It is of considerable economic importance, particularly in horticulture and floristry, but also increasingly in the pharmaceutical and fragrance industries. Despite its historical and cultural significance, it also has healing powers to cure many diseases. Traditional and indigenous knowledge of medicine persists all over the world. Traditional knowledge is passed on from generation to generation within the ethnic communities. In India, the use of orchids was documented in the Vedic period, Rig-Veda, Atharva- Veda two orchids Rasna (*Vanda tessellata*) and Sanjeevani (*Flickingeria macraei*) were mentioned (Khajuria et al. 2017; Ninawe and Swapna 2017). Traditional healers are the major practitioners of medicinal orchids. Various parts of plants are used to cure many

ailments such as flowers, pseudobulbs, rhizomes, roots, tubers, and leaves. Orchids are used in the treatment of inflammation, cuts, wounds, earaches, epilepsy, eye diseases, headaches, skin infections, and stomach problems. These activities are due to various bio-active compounds containing mainly alkaloids, flavonoids, saponins, tannins, steroids, and terpenoids (Pant 2013; Gutierrez 2010). In epiphytic orchids, the leaves, pseudobulbs, and flowers are major sources used to cure several ailments. In terrestrial orchids, tubers and rhizomes are major sources to cure diseases. Many orchids are used for flavouring such as *Vanilla*. In India, the state of Arunachal Pradesh, uses varied orchid species such as *Acampe carinanta*, *Acampe rigida*, *Aerides multiflora*, *Aerides odorata*, *Argostopyllum brevipes*, *Anoectochilus roxburghii*, *Bulbophyllum careyanum*, etc, to cure certain diseases such as rheumatism, acidity, arthritis, earache, skin diseases, stomach problems (Tsering et al. 2017). The North Eastern region, Uttarakhand, Himalayas, and Southern India is also famous for abundant orchid diversity and a way to conserve it and proper use for medicinal purposes (Khajuria et al. 2017; Singh et al. 2017; Ninawe and Swapna 2017; Rajendran et al. 1997). However, due to certain factors, some are unexplored or undocumented. The factors affecting the loss of medicinal aspects of orchids are illegal trading, habitat clearance, agricultural clearance, mining, and over-exploitation. Therefore, it is a foremost duty to sustain such orchid species before they go extinct shortly.

RESULTS AND DISCUSSION

Orchids are important for much more than their beauty. Various other orchids are used for a variety of folk medicines and

cures. According to [Table 1](#), 15 orchid species have medicinal value in India. Epiphytic orchids are *Acampe carinata*, *Acampe praemorsa*, *Acampe papillosa*, *Aerides odorata*, *Bulbophyllum cariniflorum*, *Bulbophyllum crassipes*, *Cymbidium aloifolium*, *Dendrobium herbaceum*, *Rhynchostylis retusa*, *Vanda tessellata*, and *Vanda Testacea* ([Plate 1](#) and [Plate 2](#)). Terrestrial orchids listed in [Table 1](#) are *Geodorum densiflorum*, *Habenaria commelinifolia*, *Habenaria marginata*, and *Zeuxine strateumatica*. Parts are used as roots, leaves, flowers, tubers, rhizomes, and pseudobulbs. Modes of use are decoction, infusion, juice, paste, and orally. The root of *Acampe carinata*, *Acampe praemorsa*, *Acampe papillosa*, *Bulbophyllum cariniflorum*, *Cymbidium aloifolium*, *Geodorum densiflorum*, *Habenaria commelinifolia*, *Rhynchostylis retusa*, *Vanda testacea*, *Vanda testacea*, and *Zeuxine strateumatica* are used to treat inflammation, arthritis, rheumatism, paralysis, regularize menstrual cycle in women, spermatorrhea, blood dysentery, asthma, and tonic. The leaves of *Acampe praemorsa*, *Aerides odorata*, *Cymbidium aloifolium*, *Dendrobium herbaceum*, *Rhynchostylis retusa*, *Vanda tessellata*, and *Vanda testacea* are used to cure tuberculosis, paralysis, syphilis, dysentery, asthma and earache. The tubers of *Geodorum densiflorum*, *Habenaria commelinifolia*, and *Habenaria marginata* are used to treat malignant ulcers,

regularize the menstrual cycle in women, and spermatorrhea. The pseudobulbs of *Bulbophyllum cariniflorum* and *Bulbophyllum crassipes* are used to cure at the time of pregnancy and stomach-related problems. Many researchers reported on the medicinal aspects of orchids. In [1997](#), Rajendran et al. reported some medicinal orchids in Southern India. In [2008](#), Jalal et al. reported the ethnomedicinal orchids of Uttarakhand, Western Himalaya. In [2013](#), Panda and Mandal reported the folklore medicinal orchids of Sikkim. In [2013](#), Behera et al. reported the medicinal orchids in India and their conservation. In [2013](#), Pant reported the medicinal orchids and their uses with tissue culture as an alternative for conservation. In [2014](#), Nongdam reported the ethnomedicinal uses of orchids in Nagaland, Northeast India. In [2017](#), Khajuria et al. reported ethnomedicinal uses on orchids in the Nagdev Forest range, Pauri Garhwal, Uttarakhand, India. In [2017](#), Linthoingambi et al. reported the medicinal uses of orchids by tribes in India. In [2017](#), Khuraijam reported the ornamental crop in North India. In [2017](#), Chowlu et al. reported the Ethnomedicinal uses of orchids among the Khanti community of Arunachal Pradesh. In [2010](#), Rao reported the Orchid flora of Arunachal Pradesh. In [2009](#), Jalal and Rawat reported the habitat studies and conservation aspects in Uttarakhand, Western Himalaya.

Table 1: Medicinal orchids of India

Botanical name	Common name	Parts used	Mode of uses	Sources
<i>Acampe carinata</i> (E)	Keeled Acampe	Root	Root paste is applied externally to treat	Dash et al. 2008

			inflammation.	
<i>Acampe praemorsa</i> (E)	Clipped Acampe	Root Leaves	Half a spoon of fresh root paste is mixed with <i>Asparagus racemosus</i> is taken orally to cure arthritis; Root paste is used as a tonic for rheumatism.	Behera et al. 2013 Nongdam 2014
<i>Acampe papillosa</i> (E)	Brittle orchid	Root	Root paste is used to treat rheumatism; Root paste is applied externally to treat the burning sensation.	Behera et al. 2013 Nongdam 2014
<i>Aerides odorata</i> (E)	Fragrant fox brush orchid	Leaves	Leaf juice is taken orally twice a day to cure tuberculosis; The root paste is used to treat joint pain and swelling.	Dash et al. 2008; Nongdam 2014
<i>Bulbophyllum cariniflorum</i> (E)	Keeled bulb-leaf orchid	Root Pseudobulbs	Dried root mix with black pepper and milk is taken orally at the time of pregnancy.	Dash et al. 2008
<i>Bulbophyllum crassipes</i> (E)	Thick spurred bulb leaf orchid	Pseudobulbs	Pseudobulbs is eaten orally to cure stomach-related problems.	Behera et al. 2013
<i>Cymbidium aloifolium</i> (E)	Aloe leafed cymbidium	Root leaves	The root powder is mixed with black pepper, ginger, and milk and is taken orally to reduce paralysis; the leaf paste is applied externally to treat	Behera et al. 2013; Rajendran et al. 1997

			boil and fever.	
<i>Dendrobium herbaceum</i> (E)	Grassy Dendrobium	Leaves	Leaves paste is mixed with young shoots of <i>Andrographis paniculata</i> and is applied to treat syphilis.	Dash et al. 2008
<i>Geodorum densiflorum</i> (T)	Pink noddled orchid	Root Tubers	Fresh root paste is mixed with ghee and honey and taken orally to regularize the menstrual cycle in women; the tuber paste is applied externally to treat wounds and insect bites.	Dash et al. 2008; Nongdam 2014
<i>Habenaria commelinifolia</i> (T)	Commelina leaf Habenaria	Root Tubers	Root decoction is mixed with <i>Saraca indica</i> boiled are given orally to cure spermatorrhea.	Dash et al. 2008
<i>Habenaria marginata</i> (T)	Bog orchid	Tuber	Tuber is frequently boiled and mixed with honey to treat malignant ulcers.	Dash et al. 2008
<i>Rhynchostylis retusa</i> (E)	Foxtail orchid	Root Leaves	Paste of root and leaf buds of <i>Pisum sativum</i> is taken orally to cure blood dysentery; the leaf juice is used for constipation, gastric, and acidity.	Dash et al. 2008; Panda and Mandal 2013

<i>Vanda tessellata</i> (E)	Checked Vanda	Leaves	Leaves juice is used to treat earache.	Dash et al. 2008
<i>Vanda testacea</i> (E)	Small-flowered Vanda	Root Leaves	Root decoction mixed with <i>Curculigo orchioides</i> is a cure for asthma.	Behera et al. 2013
<i>Zeuxine strateumatica</i> (T)	Lawn orchid	Root	The root is used as a tonic to strengthen the body	Behera et al. 2013

(E: Epiphytic, T: Terrestrial)

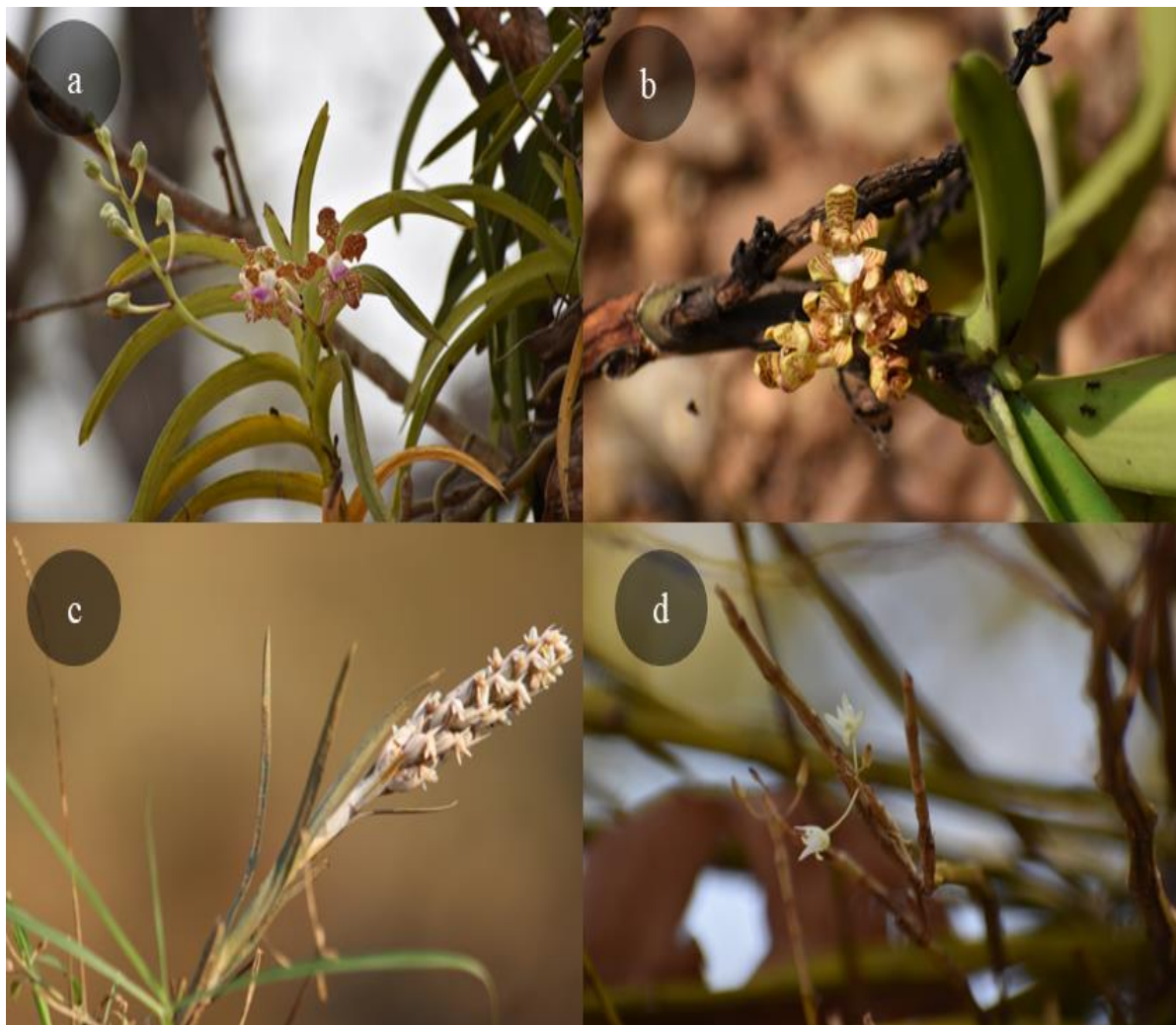


Plate 1: Medicinal orchid of India a) *Vanda tessellata*, b) *Acampe praemorsa*, c) *Zeuxine strateumatica*, d) *Dendrobium herbaceum*



Plate 2: Medicinal orchid of India e) *Aerides odorata*, f) *Cymbidium aloifolium*, g) *Habenaria marginata*

CONCLUSION

The ethical use of orchids was determined from the Vedic period by tribal communities and till now it is also conserved by the tribal healers. The paper highlights the ethnomedicinal uses of some orchid species that are available in India. The study revealed that 15 medicinal orchid species are enumerated with the Plant parts along with the mode of uses. Therefore, in the future, it could be potent for the development of new drugs to fight against various ailments.

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