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Medicinal Orchids – An Overview

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Abstract

Orchids are distinctive plants and highly priced in the international florist trade due to their intricately designed spectacular flowers with brilliant colours, delightful appearance, myriad sizes, shapes, forms and long lasting qualities. Orchids are grown primarily as ornamentals; many are used as herbal medicines, food, and other have cultural value by different cultures and tribes in different parts of the world. Orchids have been used in many parts of the world in traditional healing system as well as in the treatment of a number of diseases since the ancient time. Though orchidaceae is regarded as a largest family of plant kingdom, few studies have been done regarding their medicinal properties. Some species like *Dendrobium nobile*, *Eulophia campestris*, *Orchis latifolia*, *Vanda roxburghii* and *Vanda tessellata* have been documented for their medicinal value. Phytochemically, orchids have been reported to contain alkaloids, triterpenoids, flavonoids and stilbenoids.

Introduction

Orchidaceae is one of the few largest plant families, consisting of very fascinating and colourful flowers. They have a wide ecological range and their growth is closely co-related to environmental conditions. The largest genera are *Bulbophyllum* (2,000 species), *Epidendrum* (1,500 species), *Dendrobium* (1,400 species) and *Pleurothallis* (1,000 species). It also includes Vanilla (the genus of the vanilla plant), the type genus *Orchis*, and many commonly cultivated plants such as *Phalaenopsis* and *Cattleya*. Moreover, since the introduction of tropical species into cultivation in the 19th century, horticulturists have produced more than 1,00,000 hybrids and cultivars. Mainly growing in tropical countries, chiefly on trees and rocks, However, many are terrestrial, inhabiting damp woods and grassy slopes, almost all the members of this family range from epiphytic herbs which are rather selective to saprophytic herbs which prefer acidic soils. Some orchids also grow under extreme climatic conditions. The native population, particularly in high altitudes in different parts of south India in one way or another makes use of some orchids to treat ailments and to season their food. Some of these belong to the genus *Aerides, Bulbophyllum, Cymbidium, Eulophia, Habenaria, Pholidota, Vanda* and *Zeuxine* providing some essential therapeutic compounds to cure different ailments. The present study reports that the fresh plants or rhizome are widely used to sure common diseases such as ear pain stomach pain, leucoderma, whooping cough and finger abscess.

Orchids and Medicinal Properties (De, 2014)

1. Botanical Name: *Acampe praemorsa*

Distribution: Western Ghats of India

Parts used: Roots

Medicinal properties: Anti-rheumatism (Figure 1)

2. Botanical Name: *Aerides crispum*

Distribution: Western Ghats of India

Parts used: Whole plant

Medicinal properties: Its plants are powdered, boiled in neem oil, filtered, 2-3 drops of oil are put into the ear once at night as a cure for earache (Figure 2).

3. Botanical Name: *Coelogyne ovalis*

Distribution: Western Ghats of India

Parts used: Whole plant

Medicinal properties: The whole plant is used in Western and Southern parts of India for cough, urinary infections and eye disorders (Figure 3).

Figure 1*: Acampe praemorsa*

Figure 2: *Aerides crispum*

Figure 3*: Coelogyne ovalis*

4. Botanical Name: *Dendrobium ovatum*

Distribution: Western Ghats of India

Parts used: Stems

Medicinal properties: Juice obtained by hand crushing the stems is used on patients suffering from constipation and stomachache (Figure 4).

5. Botanical Name: *Goodyera schlechtendaliana*

Distribution: India

Parts used: Whole plant

Medicinal properties: Tonic for internal injuries and to improve circulation (Figure 5).

6. Botanical Name: *Orchis latifolia* L.

Distribution: Western Himalayas, Afghanistan and Iran

Parts used: Roots

Medicinal properties: Treatment of diabetes, diarrhea, dysentery, paralysis, convalescence, impotence and malnutrition (Figure 6).

Figure 4: *Dendrobium ovatum*

Figure 5: *Goodyera schlechtendaliana*

Figure 6: *Orchis laxiflora roots*

7. Botanical Name: *Orchis laxiflora* Lam.

Distribution: South Europe, North Africa and West Asia.

Parts used: Bulb

Medicinal properties: Treatment of diarrhea, bronchitis and convalescence (Figure 7).

8. Botanical Name: *Satyrium nepalense*
Distribution: North East India
Parts used: Tubers

Medicinal properties: Tubers eaten by Monpa tribe for Malaria, dysentery and aphrodisiac (Figure 8).

9. Botanical Name: *Spathoglotis plicata*

Distribution: North East India

Parts used: Whole plant

Medicinal properties: Decoction of the boiled plant used for rheumatism and used in hot as a foment (Figure 9).

Figure 7: *Orchis laxiflora*

Figure 8: *Satyrium nepalense*

Figure 9*: Spathoglotis plicata*

10. Botanical Name: *Vanda roxburghii*

Distribution: India

Parts used: Leaves & roots

Medicinal properties: The paste applied to the body to bring down fever. The juice is dropped in the ear for the treatment of otitis. The roots are used in dyspepsia, bronchitis, rheumatism and sciatica (Figure 10).

11. Botanical Name: *Vanda tessellata* (Roxb.) Hook. Ex Don

Distribution: India, Sri Lanka and Burma

Parts used: Whole plant

Medicinal properties: Paste of leaves is used as application in fevers. It is ingredient of *Rasna Panchaka Quatha*, Ayurvedic formulation used in the treatment of arthritis and rheumatism. Expressed juice of the leaves is used in the treatment of otitis media. The root is used as antidote against scorpion sting and remedy for bronchitis (Figure 11).

12. Botanical Name: *Vanilla planifolia*

Distribution: Mexico

Parts used: Sheath

Medicinal properties: Used as for the treatment of hysteria, fever, impotence, rheumatism and to increase the energy, of muscular system (Figure 12).

Pharmacological Profile of Orchids

Throughout the ages, several health-promoting benefits, including diuretic, anti-rheumatic, anti-inflammatory, anti-carcinogenic, hypoglycemic activities, antimicrobial,

Figure 10: *Vanda roxburghii*

Figure 11: *Vanda tessellate*

Figure 12: *Vanilla planifolia*

ailments are given below (Gutierrez, 2010):

Anti-cancer/ Anti-tumor: *Anoectochilus formosanus, Bletilla striata, Bulbophyllum kwangtungense, Dendrobium chrysanthum, Dendrobium fimbriatum, Dendrobium nobile, Ephemerantha ionchophylla*, *Gastrodia elata, Spiranthes australis, Bulbophyllum odoratissimum*

Convulsive diseases: *Gastrodia elata, Goodyera schlechtendaliana, Anoectochilus formosanus*

Anti-microbial: *Vanilla planifolia, Galeola foliata, Cypripedium macranthos* var. rebunense, *Spiranthes mauritianum, Gastrodia elata*

Anti-inflammatory: *Anoectochilus formosanus, Gastrodia elata, Dendrobium moniliforme, Pholidota chinensis*

Antioxidant: *Anoectochilus formosanus, Anoectochilus roxburghii, Dendrobium amoenum, Dendrobium moniliforme, Gastrodia elata, Pholidota yunnanensis*

Antidiabetic: *Anoectochilus formosanus, Dendrobium candidum*

Diuretic: *Cymbidium goeringii*

Antihepatotoxic: *Anoectochilus formosanus, Goodyera schlechtendaliana, Goodyera matsumurana, Goodyera discolor*

Neuroprotective: *Coeloglossum viride, Gastrodia elata*

Pain treatment: *Maxillaria densa, Scaphyglottis livida, Epidendrum Mosenii*

Anti-viral: *Epipactis helleborine, Listera ovata, Gastrodia elata, Cymbidium spp.*

Relaxation: *Scaphyglottis livida, Gastrodia elata, Maxillaria densa*

Antiplatelet aggregation: *Dendrobium loddigesii, Den. densifiorum, Ephemerantha lonchophylla, Gastrodia elata*

Anti-allergic: *Gymnadenia conopsea*

Antipyretic: *Dendrobium moniliforme*

Antimutagenic activity*: Dendrobium nobile*

Endurance capacity: *Anoectochilus formosanus*

Ameliorative: *Anoectochilus formosanus*

Anthelmintic: *Bletilla striata*

Anti-aging: *Coeloglossum viride* var. bracteatum

Gastric: *Dendrobium nobile, Gastrodia elata*

Herbicidal agent: *Epidendrum rigidum*

Maturation: *Anoectochilus formosanus*

Phytoalexin: *Coelogyne cristata*

Skin blood flow: *Calanthe discolor*

Wound healing: *Vanda roxburghii*

Conclusion

Orchids are generally known for its beautiful flowers and very less known for its medicinal uses. However, a number of compounds have been isolated from the different parts of the plant which possess medicinal properties. Compounds with antimicrobial, antitumor, anti-inflammatory, antioxidative, ntidiabetic, neuroprotective, antiallergic properties have been isolated and tested on animal models but clinical trials with orchid plant parts have not been a regular practice. Emphasis on the clinical trials will provide a new gateway for treatment of diseases with herbal medicines.

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