International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Therapeutic Effects of Dracaena Reflexa Lam: A Review Article

Km. Preeti[1], Deovrat Kumar[2], Shalini Sharma[3], Akshay Sharma[4], Kajal Kandari[5]

[1,2,3,4,5]College of Pharmacy, Roorkee, Uttarakhand

Abstract

In the existing study, Ayurveda is the traditional form of health care known to us. The leaves of *Dracaena reflexa Lam*. (Song of India leaves) were investigated to be of the best medicinal importance and were widely used in traditional medicine to treat a wide range and various types of diseases. The highest phenolic content is displayed. According to this study, *Dracaena reflexa* is a natural great source of antioxidants that can be used as an antioxidative from exhausted literature review we apparent that Dracaena reflexa Lam. showed anticancer, antioxidant, antimicrobial, anti-inflammatory, analgesic, congestive heart failure, and cardiac arrhythmia, and antidiabetic effects. Plants are traditionally medicinal source. Dracaena reflexa (Song of India) belongs to aspergeceae family have antibacterial, antifungal, antipyretic properties showed activities like antioxidant, phytochemical and physical parameters (extractive value, moisture content, Ash value, crude fibreetc.). It is also used as traditional medicine in different diseases like antipyretics, wound healing etc. It is an ornamental plant also used as decorative plants like window door plants help to clean to environment to give pure and fresh oxygen. The find out about cultivation, physical characteristics and taxonomical properties like macroscopically and microscopically classification. *Dracaena reflexa* Plant has a consistent number of valuable phytochemical constituents that are used as medicines in various diseases. Alkaloids, flavonoids, terpenoids, saponins, amino acids, tannins, steroids, glycosides, carbohydrates, lipids, and oil were found in the leaves after a qualitative screening for phytochemical components.The present article attempts to provide information on biological significance of Dracaena reflexa for further research.

Keywords Dracaena reflexa, antibacterial, antifungal, antipyretic, phytochemical

1. Introduction

This is most common in developing countries where the cost of medicine and the consultation fee for western-style doctors are factors that most people cannot afford. The majority of therapeutic halophyte plants are perennial herbs and shrubs. All plants used in traditional medicine or other forms of medicine need to be thoroughly studied because there hasn't been any chemical and pharmaceutical research on these species, including T. divaricates one, to date[1]. Traditional medicine makes the use biological resources as well as traditional indigenous plant knowledge, which is passed down verbally from generation to generation. This is closely tied to the conservation of biological diversity and indigenous

people's intellectual property rights. Herbal medicine serves a vital part in preserving humanity's health and prosperity. Herbal medications are used by the majority of the world's population. Many plants have been utilized for medical reasons, according to the WHO [2].

2. Activities of Dracaena species

a species of the *Asparagaceae* family, were used during this experiment. In vitro lipid peroxidation, antioxidative activity, anti-swelling activity, antibacterial activity, and anticancer activities of such *Dracaena* species, including *Dracaena cinnabari* stem, have all been evaluated. Another species, *Dracaenacambodiana,* was found to have cytotoxic, anti - oxidative, and antibacterial properties. Different researches studied at the therapeutic potential of *Dracaena cochichinensis, Dracaena angustifolia*, *Dracaenaarborea*, and *Dracaena vand*. The data is based on phytochemical screening, parameters analysis, nutritional values, and ant oxidative capacity of *Dracaena reflexa*plants [3].

3. Types of Species

D. fragrans, *D. surculosa*, *D.Draco*, *D. marginata*, *D. arborea*, *D. goldieana*, *D. sanderiana*, *D. deremensis*, *D. reflexa*, and *D. manni*iare, *Draco Americana* (Central American dragon tree), *Dracaena Draco* (Canary Islands Draco tree), *Dracaena marginata*, and *Dracaena mannii* are plant *Dracaenas*, whereas, *Dracaena bicolor*, *Dracaena cincta*, and *D. concinna* are shrubby *Dracaenas*[4].

4. Traditional Uses

Dracaena reflexa has extensive been used in Indian herbal medicine as a germicide (antiseptic) and wound-healing medicine, and as an expectorant (cough) to reduce chest conditions.

The Fraction of the Indian cress occurs to be antibiotic and an implant of the leaves can be used to grow resistance to bacterial resistance to disease/disorder. Dracaena leaves and stem appears as antioxidants.

The *Dracaena* species has antibacterial, antifungal, antiseptic, arthritis. *Dracaena reflexa* to cure malarial, diarrhea, antipyretic and hemostatic glycoside presents in the plant act with water to process an antibiotic.

The plant has antibiotic activities to reduce bacteria. Extracts from the plant have antioxidants property. Some *Dracaena species*, including *Dracaenacinnabari* stem, have been investigated for their in vitro effects on lipid peroxidation, antioxidant effect, anti-inflammatory effect, antibacterial action, and antineoplastic action. Antimicrobial and antioxidative, cytotoxicity, and the presence of many phenolic compounds were discovered in *Dracaena. Draco*. *Dracaena. cambodiana* was shown to have anticancer, antioxidant, and antibacterial properties. Different researches studied at the therapeutic potential of *Dracaena. Cochichinensis*, *Dracaena. Angustifolia*, *Dracaena. Arborea*, and *Dracaena. Vand*. The recent research examined at the pharmacognostic, phytochemical, and in vitro anti-cancer properties of *Dracaena. reflexa* leaves[5].

5. Taxonomical Classification of *Dracaena reflexa Lam.* (Leaves)

Table no. 1. (Taxonomical Classification)

Kingdom	**Plantae**
Subkingdom	Tracheobionta

Super division	Spermatophyte
Division	Magnoliophyta
Class	Liliopsida
Subclass	Monocots
Order	Asparagales
Family	Asparagaceae
Sub family	Nolinoideae
Genus	Dracaena.
Species	*D. reflexa*

6. Macroscopic Characters

Table no. 2. (Physical Characters)

Color	Heavy green and Yellowish and Creamish
Odor	More aromatic
Taste	Slightly Peppery
Size	4 to 21 cm long, 1.4 to 4 cm wide and 4 to 5 m height.
Shape	Elongated
Cultivation Stat	Decorative plant

Figure no. 1. (Dracaena Leaves)

7. Description

Dracaena reflexa is a species of *Dracaena*. *Dracaena. reflexa* is a shorter plant, usually when grown for house decorations, if it can reach a height of 4–5 m, sometimes 6 m ideal. It is a plant with a slower growth rate and an upright habit, with an oval form and an open crown. The *dracaena* leaves generally lanceolate in shape, spirally organized, and grow in a dark green shade. They are 4–21 cm long and 1.4–4 cm wide basically. The petals are small and crowded, and they appear in the middle of winter. They are usually white

and fragrant. Neither the flowers nor the fruit are extremely attractive. *Dracaena*. *reflexa* var. *Dracaena angustifolia* (syn. *Dracaena*. *marginata*) has magenta-colored petals and a shrubby shape with green leaves [6].

8. Physical Characteristics

The majority of *Dracaena. reflexa* plants are appealing. *Dracaena* leaves have a shiny appearance and grow to be about one foot long and two inches wide. Several of them display for grow out of hand (especially outdoors) and raise the view to a slightly unpleasant level, which can be reduced with crop and its growth as considered this family can flower and blooms clusters of near white small flowers that are not morebeautiful or noticeable. The song of India plant was used full for clean the air study to environment which demonstrated for remove an amount of toxins from environment [7].

9. Cultivation

There are severaltaxonomic categoriesof the dracaena species that show various leaf variant. They ordinarily growth of this plant up to 3ft tall approx. These plants look like bushy tree type as compared to other dracaenas plant are so easy to care for growth. The song of India to haverequired its brilliant light and quite excessive humidity levels forbloom.

Dracaena species is a popular ornamental plant. Several cultivars, particularly variegated clones with cream and yellow-green edges, have been recommended.

It presents nicely as a houseplant to have tolerating infrequent watering. *Dracaena*reflexa have water needs and should be fertilizer for well growth in two weak then can actively grow.

However it can survive in low light conditions, but if not given enough light, the plant will become lanky. Temperatures of 18 °C to 25 °C (64 °F to 77 °F) should be maintained for *Dracaena. reflexa* cultivated indoors. Norwood stem cuttings can be used to propagate it. A bright litness spot while not direct sunlight isnoticed. I want to keep the soil moist at all times and let it dry out in the winter.

It should be capacitating to quit a *Dracaena reflexa* for a month during winter without wateringland should not be cause from any disease. It can avoid from Over-watering. When the soil is mix draining potting issue for best result. The room humidity should be normal is usually provide excessive humidity levels. It can reform the humidity level by inset the plant on a tray of pebbles for sitting in water and use a humidifier. It can propagate with stem cap cuttings (3-5 inches)longapprox [8, 9].

10. Chemical Constituents

Dracaenareflexa. Show the Alkaloids, Flavonoid, Protein, glycoside, Tannins, Saponin, Carbohydrates, Terpenoids, Steroids, Fat and Oils etc[10].

11. Physical Parameters

According to study leaves of dracaena have great percentage of ash value presented that good source of minerals. Moisture content approx5- 15 % showed that good for formulation. Crude fibre ispresented in leaves [11].

12. Biological effects of Dracaena Reflexa (Leaves and Stem)

12.1. Antioxidant activity- It indicates strong antioxidant potential in terms of scavenging free radicals and acting as an electron donor in the reduction of metal, and it is known that different extracts have antioxidant qualities. The therapeutic value of medicinal plants is frequently linked to their antioxidant qualities because flavonoids are present in them. H_2O_2-induced antioxidant activity demonstrates D. reflexa's antioxidant capacity. [12, 13].

12.2. Cardiac activity-Using monolayer rat heart cell cultures, a cell-based model of H_2O_2-induced heart failure. Oxidative stress was developed in order to directly evaluate the potential for injury that H_2O_2 has on heart muscle. It has been observed that an oxidative burden caused by an excess of hydrogen peroxide may result in post-ischemic cardiac injury.In this investigation, we extracted a frog heart and used frog ringer solution that included H_2O_2 to produce oxidative stress. Acetylcholine's muscarinic effects were less noticeable when ringer solution containing H_2O_2 was filled into a heart preparation, showing that H_2O_2 had caused oxidative stress on the frog heart. This could be because receptors had become desensitized.

12.3. Antibacterial activity- extracts of Dracaena reflexa leaves (Petroleum ether 23mmwith concentration 400µg/disk), (Dichloromethane 29mmwith concentrate on (400µg/disk), (Methanol 32mmwith concentration 400µg/disk) revealed the maximum zone of inhibition against ***Pseudomonas aeroginosa*** than ***Staphylococcus aureaus-*** (Petroleum ether, 13mm with concentration 400µg/disk), (Dichloromethane, 11mm with concentration 400µg/disk), (Methanol, 9mm with concentration 400µg/disk) and ***Escherichia coli.*** - (Petroleum ether, 10mm with concentration 400µg/disk), (Dichloromethane, 2.0mm with concentration 400µg/disk), (Methanol, 11mm with concentration 400µg/disk).

12.4. Antifungal Activity- The petroleum ether extracts of *Dracaena reflexa* demonstrated effectiveness against ***Candida albicans*** in this investigation having the zone of inhibition (8.0mm, 15.0mm, 20.0mm with concentration 1.0mg, 2.0mg, 3.0mg), methanol extract have been the zone of inhibition against ***Candida albicans***(6.0 mm, 11.0mm, 18.0mm with concentration 1.0mg, 2.0mg, 3.0mg),. The petroleum ether extract have greatest zone of inhibition (20.0mm with 3.0mg) revealed against *Candida albicans*than methanol extract zone of inhibition (18.0mm with 3.0mg).

The methanol extracts of *Dracaena reflexa* demonstrated effectiveness against *Aspergillusniger* in this investigation having the zone of inhibition (14.0mm, 20.0mm, 27.0mm with concentration 1.0mg, 2.0mg, 3.0mg), and petroleum ether extract have been the zone of inhibition against *Aspergillusniger* (10.0 mm, 15.0mm, 24.0mm with concentration 1.0mg, 2.0mg, 3.0mg),. The methanol extract have greatest zone of inhibition (27.0mm with 3.0mg) revealed against *Aspergillusniger*than petroleum ether extract zone of inhibition (24.0mm with 3.0mg) [14,15].

Conclusion

Dracaena reflexa is a decorative plant with uses as a traditionally remedies. In this article investigated various parameters like physicochemical, taxonomical, and biological etc. Dracaena reflexa have antifungal, antibacterial, and antioxidant properties. Further research on detailed pharmacological screening, isolation of active phytoconstituents responsible for its various therapeutic activity and clinical study for evaluation

of safety and efficacy of the drug need to be evaluated in future.

References

1. Shukla A., Vats S., Shukla R.K, Proximate composition, nutritive value and evaluation of antioxidant Potential of stem of *dracaena reflexa lam*, ISSN- 0975-1491, Volume 6, Issue 11, (2014), pp. 360-364.
2. Shukla A., Vats S., Shukla R.K, Phytochemical Screening, Proximate Analysis and Antioxidant Activity of *Dracaena reflexa Lam* Leaves, Indian J Pharm Sci (2015), Volume 84, Issue 4, 77(5), pp. 640-644.
3. Pei-Luen Lu*P.L. and Morden C., Phylogenetics of the Plant genera Dracaena and Pleomele (*Asparagaceae*), Journal of PlantScience (2010), 7: 64–72, ISSN pp. 1726-6858.
4. Masselter* T., Eckert S. and Speck T.Functional morphology, biomechanics and biomimetic potential of stem–branchconnections in *Dracaena reflexa* and Freycinetia insignis, Beilstein J.Nanotechnol.2011, (2), pp. 173–185.
5. Dracaena reflexa". Germplasm Resources Information Network *(GRIN)*. Agricultural Research Service *(ARS)*, United States Department of Agriculture *(USDA)*. Retrieved (2017), pp. 1-2
6. Bhargav H. S, Shastri S D. et al., Measurement of the Zone of Inhibition of an Antibiotic (2016), 978-1- 4673-8286-1/16, pp. 401-406. (Conference IEEE 6 International Conference on Advance Computing (IACC).
7. Bribi. N. et al., Pharmacological activity of Alkaloids. Vol. I, (2018), pp. 1-6.
8. Dadrasnia A., Agamuthu P.,Diesel Fuel Degradation from Contamination Soil by *Deacaena reflexa* Using Organic Waste Supplementation, (2013), Volume 56, (4), pp. 236-243.
9. Damodare T. R., Madhavan, V., et al. Antioxidant Property of the Root of *Asparagus Gonoclados Baker* (Liliaceae), Volume 14, Issue 2, (2015) pp. 49-52.
10. Dracaena reflexa". World Checklist of Selected Plant Families. Royal Botanic Gardens, Kew. Retrieved (2017), pp. 11-14.
11. Janifer, X Raj*, Chaurasia O.P., and P.K. Vajpayee, et al, Antioxidant activity and phytochemical investigation on a high Altitutde medicinal plant Dracocephalum heterophyllum Benth. (2009), Volume 1, Issue 4, pp. 246-251.
12. Shukla A., Vats S., Shukla R.K, Proximate composition, nutritive value and evaluation of antioxidant Potential of stem of *dracaena reflexa lam*, ISSN- 0975-1491, Volume 6, Issue 11, (2014), pp. 360-364.
13. Narender B., Naveena N., Pravalika1 P., et al, Pharmacological evaluation of root and leaf extracts of *Dracaena reflexa* var. *angustifolia*, e-ISSN: 2321-323X, p-ISSN: 2395-0781, Pharmacother (2017), Volume 5(3), pp. 141-146.
14. Narender B., Naveena N., Pravalika1 P., et al, Pharmacological evaluation of root and leaf extracts of *Dracaena reflexa* var. *angustifolia*, e-ISSN: 2321-323X, p-ISSN: 2395-0781, Pharmacother (2017), Volume 5(3), pp. 141-146.
15. Preeti K., Arivind K.., Proximate Analysis and Antibacterial activity of*Dracaena reflexa* Leaves vol. (7), 2022, pp. 170-175.Vol. 7 (Special Issue, Jan.-Feb. 2022(Special Issue, Jan.-Feb