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A General Review on Phytochemical Constituents and Traditional Use of Indian Medicinal Plants

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ABSTRACT:

Indian medicinal plants have long been a vital source of traditional remedies, contributing significantly to the rich cultural heritage of traditional medicine in the subcontinent. This review provides a comprehensive overview of the phytochemical constituents and traditional uses of Indian medicinal plants, aiming to consolidate existing knowledge and highlight their therapeutic potential.

The phytochemical profile of these plants, including alkaloids, flavonoids, terpenoids, glycosides, and other bioactive compounds, is discussed in detail, emphasizing their pharmacological properties and potential health benefits. The review delves into the diverse chemical constituents present in various plant species, elucidating their roles in promoting human health and well-being.

Furthermore, the traditional uses of Indian medicinal plants within indigenous healing systems such as Ayurveda, Siddha, and Unani are explored. The review highlights the historical and cultural significance of these plants in traditional medicine, detailing their applications in treating various ailments, from common health issues to more complex diseases.

Additionally, the review sheds light on recent scientific advancements, validating the traditional uses of these plants through modern pharmacological and clinical studies. The integration of traditional knowledge with contemporary scientific research is emphasized to bridge the gap between traditional medicine and evidence-based healthcare.

In conclusion, this review serves as a comprehensive resource for researchers, healthcare professionals, and enthusiasts interested in the phytochemical composition and traditional uses of Indian medicinal plants. It emphasizes the need for further research and exploration of these valuable resources to harness their full therapeutic potential for the benefit of global healthcare.

Keywords: *Indian Medicinal Plants, Ayurveda, Siddha, Unani.*

CYMBOPOGON CITRATUS:

Synonym: Lemon grass, barbed wire grass, silky heads, Cochin grass, Malabar grass, oily heads, fever grass.

Biological source: Lemon grass oil is obtained from Cymbopogon flexuous stapt.

Geographical source: Most of the species of lemon grass are native to South Asia, South-east Asia and Australia. The so called East Indian lemon grass also known as Malabar or Cochin grass is native to India, Sri Lanka, Burma and Thailand; for the related West Indian lemon grass.

Family: Poaceae

Chemical constituents: Lemon grass essential oil (LEO) carries significant amount of numerous bioactive compounds such as citral, isoneral, isogeranial, geronior, geranyl acetate, citronellal, citronellal germacrene-D and elemol, in addition to other bioactive compounds.

Uses: Lemon grass is used for treating;

Digestive tract spams, Stomach ache, High blood pressure, Pain, Vomiting, Cough, Achy joints, Fever.

COSTUS IGNEUS:

Synonym: Insulin plant, fiery costus or spiral flag, step ladder, spiral ginger pokharmer.

Biological source: Costus igneus, commonly known as insulin plant in India, belongs to the family costaceae. Compsumption of the leaves are believed to lower blood glucose levels and diabetic

Geographical source: Costus igneus is native to Southeast Asia, especially on the Greater Sunda Islands in Indonesia. It is also found in India including west Bengal • In Southern India the plant already are used as a directly supplement for the treatment of diabetes.

Family: Costaceae

Chemical constituents: Costus that possess hypolipidemic, diuretic, anti-oxidant, anti-microbial, anti-cancerous properties. Phytochemical investigations revel the presence of carbohydrates proteins, triterpenoids, alkaloids, tannins, sapoms flavonoids and steroids.

Uses: The insulin plant may help to lower blood sugar levels due to its compounds such as flavonoids and alkaloids. It reduces fasting as well as past brandon blood glucose levels

CENTELLA ASIATICA:

Synonym: Hydroctyle Asiatic, gotu kola, tiger grass, spade leaf, Indian pennywort, French hydrotyle asiatique.

Biological source: Centella coriacea, Hydrocotyle asiatica, Hydrocotyle lunata Lam. and Trisanthus cochinchinensis Lour. Is a tropical medicinal plant from, Apiaceae family native to Southeast Asian countries such as India, Sri Lanka, China, Indonesia, and Malaysia as well as South Africa and Madagascar

Geographical source: It is native to the Asian tropical regions of the Indian Subcontinent, South East Asia, Malaysia and the Solomon Islands, as well as some temperate regions in China, Japan, Korea and Taiwan.

Family: Apiaceae

Chemical constituents: The aerial part of centenlla asiatica have led to the isolation of three new compounds, named

- Centellin
- Asiatiain
- Centellicin

Uses:

- Heal wounds
- Improve mental clarity
- Treat skin conditions
- Leprosy
- Psoriasis

BRYOPHYLLUM PINNATUM:

Synonym: Bryophyllum calycinum salisb kalanchoe pinnata, pan-futi, lite-plant,

zakhme-hayod.

Biological source: Bryophyllum pinnatum is a succulent perennial plant native to Madagascar that was introduce in anthroposphic

Geographical source: The species is indigenous to Madagascar but has become extensively naturalised in mild-climate parts of southern Europe; Africa; Asia; Australia; and North, Central, and South America.

Family: Crassulaceae.

Chemical constituents: The major chemical constituents present in plant are isocitric acid& citric acid Bryophyllum pinnatum on GCMS analysis.

Epoxy tetra hydro thiophene-1, 1-dioxide, 1-octen, oleic acid. Octadecanoic acid, n- hexaole anoic acid.

Uses: They are eaten for diabetics, dissolving kidney stones, respiratory tract infections, as well as applied towards tract infections, as well as applied towards, insect bites.

AZADIRACHTA INDICA

Synonym: Margosa, Neem, Indian Liliac.

Family : Meliaceae

Biological source : The drug consists of the dried stem bark, root bark, leaves and other parts of Azardirachta indica.

Geographical source: It is found in dry forests of Andhrapradesh, Tamil nadu and Karnataka.

Chemical constituents: The neem constituents belonging to various chemical classes can be broadly divided as **isoprenoids &nonisoprenoids.**

- The major groups of limonoids present in neem :
  - Protolimonoids
  - Azadirone group
  - Nimbolide group
- Several tricyclic diterpenoids have been isolated from root and stem bark of neem.
  - Nimbol
  - Nimbidiol
  - Nimolinin
- Non isoprenoids includes glycosides, flavonoids, sulphur compounds, polysaccharides, amino acids.

USES: Almost all parts of neem are medicinally useful.

- Neem is used for the treatment of diseases ranging from skin infections and cardiovascular disorders, Diabetes and even cancer.
- Neem oil is used for the chronic skin disease and ulcers
- Neem products are largely used as pesticides.[1]

ALOE BARBADENSIS MILL

Synonym: Aloe, Musabbar, Kumari.

Family : Liliaceae

Biological source: Aloes is the dried juice of the leaves of aloe barbadenisis miller.

Geographical source: Aloe is an indigenous to eastern and southern Africa and grown in cape colony islands .It is cultivated in Europe and many

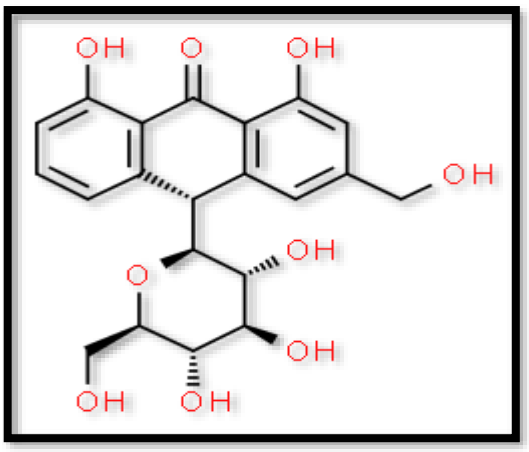
parts of India.[2]

Chemical constituents: All varities of alove are the major sources

anthraquinone glycoside.

- The principle active compostion of aloe is aloin.
- It main consists of Barbaloin.
- Along with barbaloin , aloes also contain isobarbaloin and resins.
- The drug aslo contain aloetic acid, alosone, galactouronic acid, choline salicylate, saponins, coniferyl alcohol etc . [3]

ALOIN STRUCTURE



USES:

- Aloes is used as a purgative.
- Used as anti inflammation.
- Used as aging.
- It lowers the blood sugar levels.
- It has antioxidant and antibacterial activity[4]

RAUWOLFIA SERPENTINA

Synonym: Rauwolfia root, serpentine root, sarpagandha.

Family: Apocynaceae

Biological source: Rauwolfia consists of **dried roots** of the plant known as Rauwolfia serpentine .

Geographical source: Several species of Rauwolfia are found distributed in the tropical regions of Asia , America and Africa. Comercially it is produced in India, sri lanka etc,. [5]

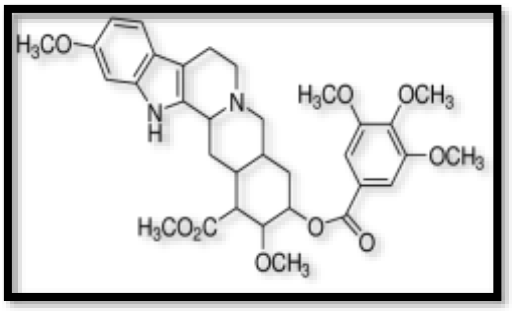
Chemical constituents: It mainly consists of Indole alkaloids.

- Alkaloids are concentrated in bark of roots.
- The important alkaloid of rauwolfia consists of reserpine.
- It also consists of oleo resins, phytosterol, fattyacids, alcohol and sugars.
- The other alkaloids present in the drug are ajmaline,
- ajmalicine,rauwolfinine, resicinnamine etc,.[6]

USES:

- Rauwolfia is widely used in the treatment of antihypertensive activity.
- It is used for the treatment of inflammation
- Used as upper respiratory tract infections.
- Used for the treatment of diabetes, flu, diarrhea and liver problems.[7]

RESERPINE STRUCTURE



SARACA INDICA

Synonym: Ashoka, Ashoka bark.

Family : Leguminosae

Biological source: Ashoka consists of dried stem of the plant Saraca indica.

Geographical source: It is distributed in south asia : Indonesia, sri lanka and India.[8]

Chemical constituents: Ashoka consists of tannin, haematoxylin, ketosterol, saponin and organic calcium and iron compounds. [9]

Uses:

- It is used in the treatment of urinary infections.
- It is used as a sedative.
- And aslo used in the treatment of bleeding disorders.
- It has antioxidant properties.
- It relieve pains and fever.[10]

ASHOKA BARK

ASHOKA TREE

CURCUMA LONGA:

Synonym : Curcuma aromatica.

Common name : Turmeric .

Family :Zingiberace.

Biological source:Turmeric is the dried rhizome of Curcuma longa linn

Chemical constituents:It mainly consists of curcumin,Demethoxy curcumin and Bismethoxy curcumin.

Uses :

- It is traditionally used as a spice in Indian food .
- Natural anti-inflammator
- Anti cancer effect
- Powerful antioxidant

- ➢ Protects from heart diseases
- ➢ Used to treat or prevent diabetes
- ➢ Prevent Alzheimer's disease
- ➢ Improves skin health
- ➢ Prevent eye degeneration
- ➢ Prevent age related chronic diseases etc.

OCIMUM TENUIFLORUM

Synonym : Holy basil

Common name : Tulsi or Tulasi

Biological source : It is obtained from the fresh and dried leaves of the plant.

Family : Lamiaceae

Chemical constituents: Tulsi consists of the fresh and dried leaves of ocimum species like ocimum Santalum and ocimum basilicum etc.

- ➢ Uses
- ➢ Natural immunity booster
- ➢ Reduces fever (Anti pyretic),and pain (analgesic).
- ➢ Reduces cold, cough and other respiratory disorders.
- ➢ Reduces stress and blood pressure.
- ➢ Having Anti cancer properties.
- ➢ Good for heart health.
- ➢ Good for diabetes patients.
- ➢ Useful in kidney stones and gouty arthritis.

References

1. iucn ssc global tree specialist group; botanic gardens conservation international (bgci); lackey, p. & pathak, j. (2022). "nyctanthes arbor-tristis". iucn red list of threatened species. **2022**: e.t150224828a152201552. retrieved 23 january 2023

2. plummer, j. (2020). "lawsonia inermis". iucn red list of threatened species. **2020**: e.t138450837a149445045. doi:10.2305/iucn.uk.2020-3.rlts.t138450837a149445045.en. retrieved 10 march 2023.
3. "lawson, isaac" . dictionary of national biography. london: smith, elder & co. 1885–1900. linnaeus dedicated the genus lawsonia to isaac lawson (d. 1747, retrieved 23 may 2017
4. purse glove jw. tropical crops: monocotyledons. london: longman; 1972. [google scholar]
5. passos eem. morfologia do coqueiro. a culture do coqueiro no brasil. brasília: embrapa - service de produce de informação; 1998. 2nd end. [google scholar]
6. "FLORA OF NORTH AMERICA NORTH OF MEXICO"by flora of North America Editiorial committee
7. https://onlinelibrary.wiley.com
8. WWW. Drug.com
9. WWW. Druglib.com
10. Monographs of unani medicine vol-1
11. Vinod D.Rangari page no.[192]
12. C.k. kokate page no. [9.9]
13. C.k. kokate page no.[9.13]
14. C.k. kokate. A.p .purohit . S.B. Gokhale page no. [9.15]
15. C.k. kokate. A.P. purohit. S.B . Gokhale page no. [15.23]