IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 4, May 2024

A Brief Review on Magical Medicinal Uses of Batel Leaf

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Abstract: *Piper betel Linn. An important species of the Piperaceae family is an evergreen and imperishable creeper, with lustrous heart- shaped leaves that are magnific budgets of phenolic composites with anti-proliferative, anti-mutagenic, antibacterial and antioxidant parcels. Phytochemical studies show that Piper betel contains a wide variety of biologically active composites whose attention depends on the variety of the factory species. numerous exploration studies on Piper betel has reported that it contains important chemical ingredients similar as chavibetol, chavibetol acetate, caryophyllene, allylpyrocatechol diacetate, campene, chavibetol methyl ether, eugenol,a-Pinene, f- Pinene, u-Limonene, safrole, 1-8-cineol, and allylpyrocatechol monoacetate. These factors are valued as a goad for its medicinal parcels likeanti-fungal, anti-nociceptive, anti-cancer, immunomodulatory, anti-halitosis, anti-diabetic, gastroprotective,anti-allergic,anti-fertility,anti-filarial,anti-larvicidal, crack mending and anti-dermatophytic. The present review is an attempt to punctuate colorful traditional uses as well as pharmacological reports on Piper betelL.(1)*

Keywords: Piper betel Linn

I. INTRODUCTION

Preface Betel splint(Piper betle) is a well- known Medicinal factory set up in Asia. It belongs to The family Piperaceae. Plant leaves are used For the medication of traditional drug to Treat colorful conditions. It's largely abundant And affordable; thus, it may promote farther exploration in food companies and the Pharmaceutical assiduity. Betel splint is Generally known as betel vine. It's extensively Used for biting practices in utmost Countries, like India, for avoiding bad Breath, strengthening the epoxies and Stimulating the digestive fire. In Indonesia, Betel leaves are used for the treatment of Vaginal douching and used as clang mouth Wash in India. In Srilanka, juice uprooted From betel splint is used to treat skin affections. Betel leaves are also boiled and used as Cough drug due to their tangy taste. In India, as a traditional practice, betel splint Is consumed after the inception of a mess in order to ameliorate digestion due to its Astringent taste. Ancient classical Ayurvedic textbooks like Bhojankutuhalam state that Consumption of betel splint is wholesome After inception of a mess to yimprove Digestion, reduces inordinate cough Accumulated in the mouth and maintains Weight, cleanses the throat.(2)

In Ayurveda, A betel splint with the addition of medicinal sauces is known as Tambul or Paan. Ayurveda describes the parcels of betel Leaf as it's pungent, sweet and bitter in Taste, alkaline, tangy and hot. It kills the Worms and kindles the fire of love as it's an Aphrodisiac in nature, and also increases Digestive fire. In exploration carried out in(2017), betel splint Contains phytocomponents which show Antioxidant,anti-inflammatory,anti-platelet, Antithrombotic, antibacterial and antifungal parcels. Phytocomponents set up in the Analysis of betel splint are hydroxyl chavicol(69.46), 4- Chromanol(24) and Eugenol(4.86), which has wide operations Including as agents. Traditionally, betel splint is used for numerous conditions and diseases. It contains analgesic And cooling parcels which are applied Over the painful area to get relief. The juice Of betel splint is diuretic in nature, so it's Used in the treatment of obstructive Urination. Betel leaves are an excellent Household remedy for the treatment of Cough and sore throat.(2)

The leaves soaked in Mustard oil painting can be applied to the casket area To relieve coughing and difficulty with Breathing. Betel leaves plays an important part in the treatment of whim-whams pains, whim-whams prostration and fragility. There are further than 90 kinds of betel Leaf set up each over the world of which 30 kinds are set up in West Bengal and 45 Are set up in India. Betel leaves are grown in Tropical and tropical regions. Leaves of The factory are used in the manufacturing of scents, germicides, canvases and beautifiers And used in the foods andspices.Ayurveda

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describes the ideal system for the Preparation of Tambul and its consumption. constituents used in the medication of Tambul have medicinal values. Major constituents are as Areca nut, Camphor, Cloves, Nutmeg, Cutch tree leaves, Tail Pepper and Lime greasepaint. Each and every component shows positive effect on the Body. Tambula confers physical beauty, Substance happiness and increases the Libido. The study has been accepted to portray The significance of consuming betel splint on Regular base in order to ameliorate health by Promoting good source of phytochemicals Which enhances the impunity by braking The growth of cancer cells, prevents DNA Damage and other conditions. This may produce mindfulness about consuming betel splint on Regular base for perfecting the impunity. Pharmacological exertion A large number of natural products are being used in the treatment of numerous conditions as traditional drug in several countries. Piper betel belongs to the family Piperaceae and has over 2000 species. The factory is indigenous to India. Piper betel leaves are shown to be effective against several mortal pathogens, although the mechanisms involved haven't been illustrated. Excerpts of Piper betel are used for the treatment of colorful affections since periods due to its essential parcels likeanti-oxidant,anti-cancer,anti-allergic,etc.(3)

Taxonomical Classification:

Kingdom : Plantae
Division : Magnoliophyta
Class : Magnolipsida
Order : Piperales
Family : Piperaceae
Genus: Piper Species Betel
Vernacular Names Sanskrit :Tambool, Mukhbhushan, VarnalataVarnalata
Hindi : Paan
English : Betel, Betel pepper, Betel- vine
Telugu: Nagballi, Tamalapaku
Tamil :Vetrilai
Gujarati: Nagarbael(4)

Varieties of Betel Leaf:

Plant Profile:

FIG. 1: LEAVES OF PIPER BETEL

kinds of Betel Leaf Grounded on the morphological characters and essential oil painting content, betel vine kinds are divided into five main groups viz, Bangla, Desawari, Kapoori, Sanchi, and Meetha.

Bangla is large thin leaves with nine main jitters and ovate lamella with cord

Leaf apex is pointed and short, not twisted. Petiolar sinus it's more prominent than other kinds.

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FIG. 2: SANCHI


FIG. 3: BANGLA

FIG. 4: KAPOORI


FIG. 5: DESAWARI

Desawari is large thin leaves and cordate lamella with seven to nine jitters. Leaf of Desawari is pinkish, and splint apex is short, acuminate, and twisted

Kapoori leaves are more elliptical, and lamella is thin with undulated periphery. Leaf apex of Kapoori is acuminate, and petiolar sinus is invisible.

Leaves of Meetha are large, and lamella is cordate to astronomically elliptical and thick. Meetha splint is moldable in texture with unheroic blotches and three to five main jitters. Leaf apex of Meetha ishort and refocused. It has a prominent joint in the petiole.

Sanchi consists of a cordate splint base with further elliptical lamella and long tapering apex. typically seven jitters are seen in Sanchi.(5)(6)

Chemical Constituents:

Leaves contain protein 3-3.5, carbohydrate0.5-6.10, minerals2.3-3.3, and tannins0.1 –1.3. It contains calcium, phosphorus, iron, iodine, potassium, vitamin B, vitamin C and vitamin A. It also contains some sweet composites and stable canvases like phenol and terpene. either, it contains eugenol, chavibetola-pinene, f pinene, 1, 8 cineole and hydroxychavicol. Major ingredients of common betel were set up to be safrole(48.7) and chavibetol acetate(15.5). The presence of allylpyrocatechol, caryophyllene, anethole, stearic acid, carvacrol, polyphenol, alkaloids, saponin, are also set up in Piper betel.(7)

Antibacterial Property of Betel Leaves

Antibacterial Property of Betel Leaves The excerpt, essential oil painting, medication, and insulated composites of betel leaves are effective against multitudinous Gram-negative and Gram-positive bacteria. The bacteria tested included foodborne pathogens and other bacteria, including multidrug- resistant(MDR) bacteria that beget severe contagious conditions in humans. utmost of the published exploration delved the antibacterial exertion of BLEs performing from detergents with different oppositeness similar as water, ethanol, ethyl acetate, acetone, and dichloromethane. Each excerpt contained different bioactive composites which may affect their antibacterial exertion. The antibacterial tests of betel leaves were varied in styles and results, complicating the comparison between studies. likewise, the current review showed that the study of antibacterial exertion of BLE was lesser than that of BLEO.

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Antifungal Properties of Betel Leaves

multitudinous styles have been applied to test the antifungal parcels of betel leaves including solid dilution, broth dilution,micro-dilution, well prolixity, and solid prolixity assays, performing in minimal inhibitory attention(MIC), minimal fungicidal attention(MFC), and inhibition zones. analogous to antibacterial exertion, recalculation of MIC and MFC, and dimension of MFC/ MIC rate to determine fungicidal and fungistatic goods, were also conducted. Candica albicans was the most screened fungal species with MIC ranging from0.01 to0.07 Minimumum inhibitory attention(MIC), minimal fungicidal attention(MFC), and inhibition zones. analogous to antibacterial exertion, recalculation of MIC and MFC, and dimension of MFC/ MIC rate to determine fungicidal and fungistatic goods, were also conducted. Candica albicans was the most screened fungal species with MIC ranging from0.01 to0.07. The fungicidal goods of BLE and BLEO against colorful fungal species including Aspergillus flavus, Aspergillus fumigatus, Aspergillus niger, Aspergillus parasiticus,C. albicans, Candida glabrata, Candida krusei, Candida neoformans, Candida parapsilosis, Candida tropicalis, Epidermophyton floccosum, Trichophyton mentagrophytes, Trichophyton rubrum, Microsporum canis, and Microsporum gypseum. Meanwhile, the fungistatic effect was only recorded from hexane and ethyl acetate excerpt of betel leaves againstC. albicans(30), and its insulate, hyroxychavicol, againstC. krusei(38). A many of these species can pollute food and spread aflatoxin, which is dangerous to humans(18,41). Other fungal species are clinically significant mortal pathogens that beget dental diseases and dermatophyte infections.(8)

Anticancer Activity

Globally,Breast cancer is the most common complaint in women with new cases prevalence of1.38 million per time(Eccles, etal., 2013). The high mortality rate is generally due to the late prognostic of the complaint, similar as lately detected in the metastasis phase. This phase is characterized by high expression of matrix metalloproteinases(MMPs), cell migration, irruption and other marvels associated with metastatic waterfall. These conditions can not be treated only with radiation remedy or by surgery, but rather need to be developed through chemotherapeutic medicines 10. Zulharini M etal., 2018 used methanolic excerpt of red betel splint to estimate the cytotoxic andanti-migration exertion towards metastatic bone cancer.(9)(13)

Gastroprotective Activity:

Majumdar B etal., 2003 studied the mending effect on treatment with ethanol excerpt ofP. betel at a cure of 150 mg/ kg body weight daily for 10 days, after induction of peptic ulcer by NSAID in albino rats. During the mending process, on treatment with excerpt of piper betel, antioxidant factor,e.g., superoxide dismutase and catalase exertion, mucus and total gastric towel sulphahydryl group were increased. Overall it can be suggested that the antioxidant or free radical scavenging exertion. thplant excerpt may be responsible for its mending property. farther exploration was carried out by Arawwawala LD etal., 2014 estimated the gastroprotective exertion of hot waterless excerpt(HAE) and cold ethanolic excerpt(CEE) ofP. betel against ethanol- convinced gastric ulcers in rats. The parameters estimated were(a) goods of HAE on mucus content clinging to the wall of the gastric mucosa,(b) acidity(aggregate and free)(c) volume and(d) pH of the gastric juice. Oral administration of HAE and CEE handed pronounced dependen0.97; CE = 0.96) and significant(P ≤0.05) than that of misoprostol, the reference medicine. The HAE significantly increased the mucus content clinging to the wall of gastric mucosa and inhibited the volume of gastric acid, and hence concluded both HAE and CEE of P (10).

Immunomodulatory Activity:

Kanjwani DG etal., 2008 estimated immmunomodulatory exertion of methanolic excerpt of Piper betel. The MPb comported of a admixture of phenols, flavonoids, tannins, and polysaccharides. Both in- vitro as well as in- vivo evaluation were carried out. The goods of MPB on lymphocyte proliferation, interferon- γ receptors and the product of nitric oxide were measured in- vitro.(10)(12).

Anti-diabetic Activity:

Arambewela LS etal., 2005 delved theanti-diabetic conditioning of waterless and ethanolic excerpts of Piper betel leaves in rats. This was tested in normoglycaemic and streptozotocin(STZ)- convinced diabetic rats using oral

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administration of hot water excerpt(HWE) and cold ethanolic excerpt(CEE). In normoglycaemic rats, both HWE and CEE significantly lowered the blood glucose position in a cure-dependent manner. In glucose forbearance test, both excerpts markedly reduced the external glucose cargo. Theanti-diabetic exertion of HWE is similar to that of CEE. also, HWE failed to inhibit the glucose immersion from the small intestine of rats. Both excerpts were set up to benon-toxic and well- permitted after following habitual oral administration(no overt signs of toxin, hepato- toxin or renotoxicity). still, the weight of the spleen had increased in treated groups conceivably indicating lymphoproliferative exertion.(11)(14)

Diabetic activity:

Anti-halitosis exertionAnti-halitosis exertion ofPiper betel was done by Ramji N etal.,(2002). Piper betelL.(Piperaceae) leaves which aretraditionally used in India and China in the forestallment of oral malodor was examined bybioassay- guided separation to yield allyl- pyrocatechol(APC) as the major active principlewhich showed promising exertion against obligate oral anaerobes responsible for halitosis.(15)

Ayurvedic uses:

Scanty or Obstructed Urination :Betel splint juice is credited with diuretic parcels. Its juice, mixed with dilute milk and candied slightly, helps in easing the passage of urine.

Weakness of nerves:Betel leaves are salutary in the treatment of nervous diseases. The juice of a many betel leaves, with a tablespoon of honey, serves as a good alcohol. A tablespoon of this admixture can be taken twice a day.

Headaches: The betel splint has analgesic and cooling parcels. It can be applied to relieve violent headaches.

Respiratory diseases :Betel leaves are useful in pulmonary afflictions suffered in nonage and old age. The leaves, soaked in mustard oil painting and warmed, may be applied to the casket to relieve a cough or difficulty in breathing.

Constipation :In the case of constipation in children, a suppository made of the stalk of betel splint dipped in castor oil painting can be introduced in the rectum. This incontinently relieves constipation.

Sore Throats :Original operation of the leaves is effective in treating sore throat. The crushed fruit or berry should be mixed with honey and taken to relieve an prickly cough.

Injuries Betel leaves can be used to heal injuries. :The juice of a many leaves should be uprooted and applied to the crack. also a betel splint should be wrapped over it and swathed. The crack will heal with just a single operation within two days. Boils The condiment is also an effective remedy for boils.(14)(16)

Chemical constituents:

Leaves contain protein 3-3.5, carbohydrate0.5-6.10, minerals2.3-3.3, and tannins0.1 –1.3. It contains calcium, phosphorus, iron, iodine, potassium, vitamin B, vitamin C and vitamin A. It also contains some sweet composites and stable canvases like phenol and terpene. either, it contains eugenol, chavibetola-pinene, f pinene, 1, 8 cineole and hydroxychavicol. Major ingredients of common betel were set up to be safrole(48.7) and chavibetol acetate(15.5). The presence of allylpyrocatechol, caryophyllene, anethole, stearic acid, carvacrol, polyphenol, alkaloids, saponin, are also set up in Piper betel.(18)(19)

II. CONCLUSION

The antibacterial and antifungal parcels and safety biographies of betel leaves forcefully support their operation in the development of colorful products, especially in the food and medicinal diligence. The application of betel leaves in producing ultramodern- marketable goods could increase the frugality of original growers, specifically in Asia. A good agrarian process should be applied to the ranch to yield standardized raw material and should be followed by a good manufacturing process in diligence to form high- quality final products. also, clinical studies should be conducted to support the use of betel leaves in medical fields. Experimenter, government, and manufacturer collaboration could grease this necessary task.(20)

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