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A Review on Areca Catechu

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Abstract: ***Areca catechu L.is a species of palm which grows much of tropical pacific, Asia & parts of Africa, The palm is believed to have originated in the philippines and is widely cultivated in several south Asian and Southeast Asian countries. In the present article, it Haa been describe about usefulness of Arecanut as an herbal drug and it's therapeutic application prospect Arecacatechu, commonly known as supari, consists of dried ripe nuts that came under Arecaceae family, which is cultivated in the tropical region of India and Southeast Asia. It is a prevalent traditional herbal medicine that is chewed to separate collected fluid in the alimentary canal and for killing worms. Areca catechu seed contains alkaloids (arecoline, arecaine, arecaidine, guvacoline, guvacine, and choline), tannin, gallic acid, gum, and various minerals such as copper, calcium, phosphorus, and iron. The chemical constituents of this plant have been used as antidiabetic, stomatitis, bleeding gums, gingivitis, conjunctivitis, glaucoma, leucorrhoea, urinary disorders, anorexia, diarrhea, blood pressure regulating activity, antiulcerogenic, antioxidant activity, anticonvulsant activity, central nervous system stimulant activity, antifertility, oxytocic activity, antiviral activity, anthelmintic, and making it more popular than chewing gum ,but not as popular as Tobacco.***

Keywords: Arecacatechu, antimalarial, pharmacological activities, morphology ,Unani Medicine, Anti HIV medicine, Supari, BetalNut.

I. INTRODUCTION

Traditional medicines have been used since ages. They are used not because of their therapeutic outcome, but because of the combination of belief, rituals, and experience of times and culture (Firenzuoli & Gori, 2007). The development of novel drugs depends purely on recent technologies appearing to accomplish something quite challenging in modern drug delivery system. In discovering new drugs, the first choice of the pharmaceutical industry is the selection of new lead compounds based on synthesis and combinatorial chemistry; however, the substantial efforts made during this have not resulted in the projected drug productivity (Ahsan et al., 2008).

Areca catechu Linn. is prominently used for treatment of Various aliments and in the form of various preparations especially powdered form . It is one of the crude material of Indian System of medicine, The plant is tall , slender, unbranched palm with a crown of leaves, Steam annulate , leaves pinnate with conspicuous sheath. Herbs are natural origin products. Depending on several factors, their chemical composition varies throughout the globe, from active decoctions to the use of natural herbal extracts following Western practices of mainstream medicine. These products turn out to be one of the most significant resources for evolving new lead compounds and frameworks for drug development. Natural products are experiencing an unusual demand, meeting the imperative need to develop novel effective drugs, and are playing an important role in the discovery of drugs to cure various human diseases (Yuan et al., 2016). The areca palm belongs to the genus Areca and family Palmae and is often called betel palm.

The tree grows straight and is about 20 m tall. Its habitat is tropical and it is mainly distributed in South East Asian countries like Pakistan, India, Malaysia, the Philippines, and Japan. The areca nut affects approximately 20% of the global population and is considered as the fourth most frequently used psychoactive substance in the world after tobacco, alcohol, and caffeine (Gupta & Warnakulasuriya, 2002). It is either consumed alone or more often in the form of betel quid (a mixture of betel leaf, lime, and areca nut commonly known as “paan”). The nut is biologically active and reported to possess various neurological actions, for example, it acts as an antidepressant (Dar & Khatoon, 2000; Dar, Khatoon, & Rahman, 1997) and a learning/memory enhancer (Nieschulz, 1967) Betal nut requires tropical ever-wet climates with evenly distributed rainfall of 1500 -5000 mm (60-200 in) and it prefers elevations of (0-900)m .(0-2950ft)

1) Although to an extensive range of soil types drainage and high moisture holding capacity.
2) The palm tree and nuts of A .Catechu have been shown in the above

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Fiigure (Fig 1.1)

II. BOTANICAL DESCRIPTIONS

A. Botanical Description

1) Preferred Scientific Name: Areca catechu Linnaeus

2) Family's: Arecaceae (Palmae), palm family Subfamily Arecoideae Non-preferred

3) Scientific Names: (synonyms)Areca cathecu Burman, Areca faufel Gaertner, Areca hortensis Loureiro, Areca himalayana H. Wendland, Areca nigra H. Wendland Common namesbetel nut, aarecor areca-nut palm (English)pugua (Guam)poc (Pohnpei)pu (Chuuk)

a) Height: The height of palm climbs and reaches upto maximum height 10-20 m (33-66 ft)

b) Flowers: Flowers have sexual characteristics having six peta l femal Flowers are bigger in size (1.2-2cm)along with 6 minor sterile stamens and overy having three cells carrying triangular stigma along with three different points at the apex

c) Fruits: fibrous, ovoid drup, 5-10×3-5cm , ranges from yellow To orange or it may be changes when the Fruit is riping stage it may red colour

d) Leaves: Eight to 12 leaves are are in the facicals , the leaves of the Catechu plant are top to the stem , the leaves are 1 3-2.7 m long , and the colour of the leaves are light green to Bright green.

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III. PHARMACOLOGICAL ACTIVITY OF THE CATECHU

1) *Blood Pressure Regulating Activity:* As genetic and Environmental Factors Determine the susceptibility and development of diseasesand no report has been published concerning the genetic interactionof metabolic effects in areca nut/betel quid (BQ) chewersitis proposed that the cardiovascul of chronic BQ usage can be the polymorphism of the angiotensin converting enzyme
2) *ANTI- HIV Activity:* Anti-HIV ActivityVarious active constituents like procyanidins, arecatanninB1 and extracts of seed showed HIV protease inhibition activity
3) *Central Nervous System Stimulant:* Betel nut may cause stimulant and euphoric effects. As aresult, it is sometimes used recreationally. However, the known toxicities of chewing betel nut likely outweigh any possible benefits 29. Asevere skin inflammatory reaction
4) *Oxytocic Activity and Anti-fertility Activity:* The ethanolic extract of nuts has shown remarkable oxytocic activity at a dose of 100 mg on isolated rat uterus. The oil obtainedfrom nuts, at a dose of 500 mg / kg exerted resorption of implants. Ata dose of 100 mg/ kg oil exerted 40% antifertility ACTIVITY.
5) *Digestive system Effects:* It has been confirm that arecoline can stimulant the sympathetic nerve , stimulate the choline m.receptors, and they promote the increase of human saliva secretion.
6) *Cardiovascular Effects:* Chewing the betal nut will cause accelerated heartbeat, temperature raising and heavy sweating within a certain period of time, the extracts of the betal nut has good hypotensive ACTIVITY.

IV. MEDICINE USES OF ARECA CATECHU

1) *Schizophrenia:* Early studies point to betel nuts as a potential treatment for schizophrenia. Some schizophrenia sufferers who consume betel nuts appear to have milder symptoms.
2) *Stroke:* According to a preliminary study, stroke survivors who take a solution containing betel nut extract may see an improvement in their speech, strength, and bladder function.

Helps with digestion, when had with betel or the Piper betle leaf.



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V. SIDE EFFECTS -ARECA CATECHU: SIDE EFFECTS

The short-term safety of ingesting betel nuts is not well understood. When consumed orally over an extended period of time or in large doses, betel nut is thought to be likely unsafe.some of the betel nut's chemical constituents have been linked to cancer. Your mouth, lips, and stool may turn red after chewing betel nut.

Like coffee and cigarette usage, it can have stimulant effects.

Additionally, it may result in more serious side effects such as heart attack, coma, death, vomiting, diarrhoea, gum issues, excessive salivation, low blood pressure, irregular heartbeats, shortness of breath, and fast breathing.Not enough is known about the safety of taking betel nut by mouth short-term. However, betel nut is considered LIKELY UNSAFE when taken by mouth long-term or in high doses. Some of the chemicals in betel nut have been associated with cancer. Other chemicals are poisonous.

A. Special Precaution and Warning

When taken by mouth: There isn't enough reliable information to know if betel nut is safe to take in small doses or for a short time. But betel nut is LIKELY UNSAFE when taken long-term or in high doses. Using betel nut has been associated with many difference cancers. Other chemicals in betel nut are poisonous. Eating 8-30 grams of betel nut can cause death.



Chewing betel nut can make your mouth, lips, and stool turn red. It can cause stimulant effects similar to caffeine and tobacco use. It can also cause more severe effects including vomiting, diarrhea, gum problems, increased saliva, kidney disease, liver disease, heart disease, chest pain, abnormal heart beat, low blood pressure, shortness of breath and rapid breathing, heart attack, coma, and death. It's LIKELY UNSAFE for anyone to take betel nut by mouth for more than a short time. But betel nut is especially dangerous for people with the following conditions: Pregnancy and breast-feeding: Taking betel nut by mouth is LIKELY UNSAFE. Betel nut can affect the central nervous system and this might endanger a pregnancy. Chemicals in betel nut might pass into breast milk and harm a nursing infant. Stay on the safe side and avoid using betel nut if you are pregnant or breast-feeding.

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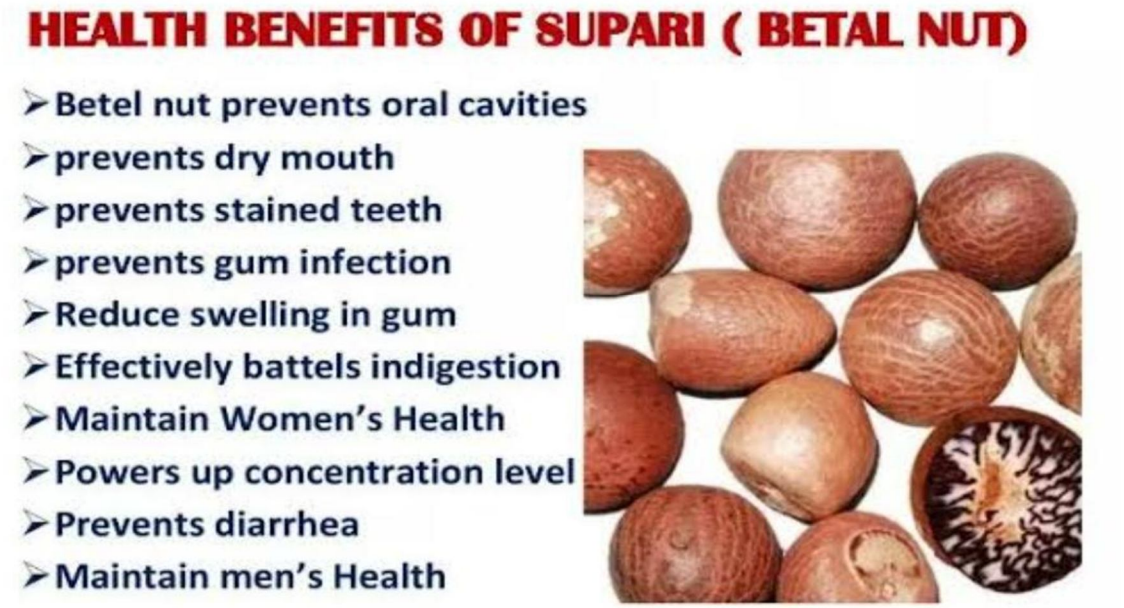
B. Asthma: Betel nut Might Make Asthma Worse

Eating 8-30 grams of betel nut can cause death. Chewing betel nut can make your mouth, lips, and stool turn red. It can cause stimulant effects similar to caffeine and tobacco use. It can also cause more severe effects including vomiting, diarrhea, gum problems, increased saliva, chest pain, abnormal heart beats, low blood pressure, shortness of breath and rapid breathing, heart attack, coma, and death.

VI. CULTIVATION AND COLLECTION

A. Propagation

The areca catechu plant is propagated by seed , and while they involved the requirement and the method dependent the number of palms desire , the large plantation of cathecu grown in India and affrica



#propogation by seed

1) *Seed Collection:* Areca nut plams are always propagated from the mature plants , the FRUITS are harvested when bright red or yellow to yellow orange.
2) *Seed Processing:* Mature seed of areca nut palm are sown as whole FRUITS, in some places the whole FRUITS is planted immediately after the harvesting, the DRIRD in sun for 1-3 days .
3) *Seed Storage:* The planting within 7 days after harvesting the FRUITS, the could store in open space at atmospheric temperature.

VII. PHYTOCHEMISTRY

They plant including number of constituents such as alkaloids, polyphenol, flavonoids, starch ,steroids AND Triterpenoids ., and the minerals content.

1) *Alkaloids:* The alkaloids including the active constituents in plant derived medication. The areca catechu plant is only herbal origin plant of family Arecaceae. And also they including the four most important alkaloids such as –(arecaidine, arecoline, guvacine, guvacoline)
2) *Polyphenol:* It must including THE 12%of leucocyanidine, epicatechin (2.5%)and catechin (10%)
3) *Flavonoids:* Flavonoids are common constituents of numerous plant world wide . they isolated from a catechu including THE isorhamnetin, chryroeriol, luteolin, quercetin,and jacareubin .
4) *Steroids and TRITERPENOIDS:* The catechu also contain TRITERPENOIDS compounds INCLUDING the isotic acid and it's derivative and The acetylursolic acid in betal nut. And the steroids compounds are sitosterol, cycloartenol and stigmata-4-en-3-one .

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5) *Mineral Content:* They including the mineral like calcium, phosphorus, and the iron ,it also contain the vitamin-C and The Vitamin -B6Fat Areca nut consists of numerous fatty acids consisting of 46.2% myristic acid, 19.5% lauric acid, 1.6% stearic acid, 12.7% palmitic acid, 6.2% oleic acid, 0.3% decanoic acid, 5.4% dodecenoic acid, 7.2% hexadecenoic acid, and 0.3% tetradecenoic acid (Pathak & Mathur, 1954).

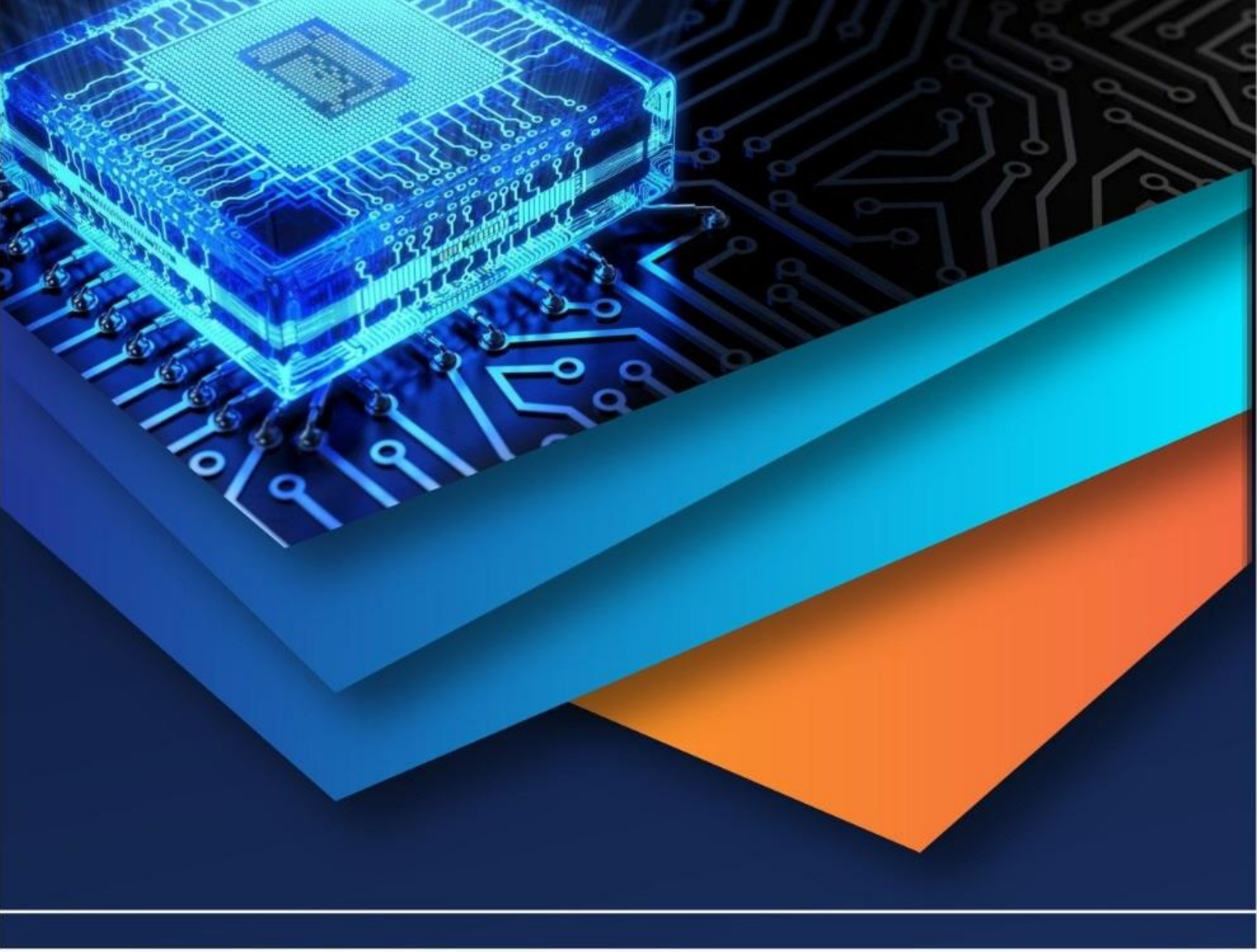
6) *Tannins:* Tannins are one more distinctive constituent of A. catechu, and the foremost types that are found in areca are condensed tannins also termed as proanthocyanidins (Ma et al., 2014). The important types of tannins in A. catechu are the catechins and epicatechin. The specific tannin compounds of A. catechu include procyanidin B1, procyanidin A1, procyanidin B2, areca tannin B1, areca tannin A1, areca tannin A2, areca tannin C1, areca tannin B2, and areca tannin A3 (Nonaka et al., 1981;

VIII. CONCLUSION

The extensive survey of literature revealed that areca is An important and has been widely studied for their various PHARMACOLOGICAL activities. It is necessary to develop adjuvant therapeutic drugs for betal nut withdrawal syndrome of potential Bqd cessation drugs. The increased investment in research of betal nut EFFECTS is but al for future word and betal nut will play a more positive role in pharmacological and medical field's throughout the guidance and supervision rather than becoming an unregulated addictive substance. The review aim to highlight the main medicinal Properties of areca catechu .

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