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FORMULATION AND EVALUATION OF HALF ARECA NUT PASTE

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ABSTRACT:

A substantial proportion of the world's population is engaged in chewing areca nut and the habit is endemic throughout the Indian subcontinent, large parts of south Asia and Melanesia. A large variety of ingredients, including tobacco, may be used along with areca nut constituting a betel quid. But the composition and method of half Areca Nut in this research paper is useful for Supratrochlear nerve pain. This half Areca Nut grow with normal areca nut plant, but it is very rarely available in nature. And this has pharmacological effect. This is very old method used in 18th centuries in India. And proper use half Areca Nut does not have any side effects, and this is very important point.

KEY WORDS: Supratrochlear Nerve, Global market, Side effects prevention

INTRODUCTION

Trigeminal nerves are part of Central Nervous System, which consists of Brain and Spinal cord. It contains the sensory cell bodies of the 3 branches of the trigeminal nerve, the ophthalmic, mandibular, and maxillary divisions. The ophthalmic nerve is sensory nerve. Long, which passes forward along the lateral wall of the cavernous sinus, below the oculomotor and trochlear nerves; just before entering the orbit, through the superior orbital fissure, it divides into three branches, lacrimal, frontal, and nasociliary. The frontal nerve is the largest branch of ophthalmic nerve. And the two nerves consist by frontal nerves are Supratrochlear nerve and supraorbital nerve.

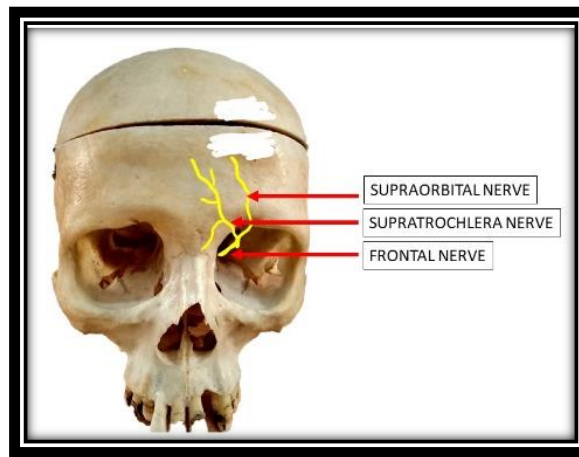


Fig No. 1 Supratrochlear Nerve

Supratrochlear nerve sensory innervation to the skin of the forehead and upper eyelid. The supratrochlear nerve branches from the frontal nerve midway between the base and apex of the orbit. It travels anteriorly above the levator palpebrae superioris and exits the orbit through the supratrochlear notch in the superomedial margin of the orbit. It then ascends onto the forehead beneath the corrugator supercilia and frontalis muscles. It then divides into sensory branches. supratrochlear nerve provides sensory innervation to the skin of the lateral forehead, upper eyelid and the conjunctiva.

A substantial proportion of the world's population is engaged in chewing areca nut and the habit is endemic throughout the Indian subcontinent, large parts of south Asia and Melanesia. A large variety of ingredients, including tobacco, may be used along with areca nut constituting a betel quid. But the composition and method of half Areca Nut in this research paper is useful for Supratrochlear nerve pain. This half Areca Nut grow with normal areca nut plant but it is very rarely available in nature. And this has pharmacological effect. This is very old method used in 18th centuries in India. And proper use half Areca Nut does not have any side effects and this is very important point.

ARECA NUT:

The areca nut is the seed of the areca palm (*Areca catechu*), which grows in much of the tropical Pacific (Melanesia and Micronesia), Southeast and South Asia, and parts of east Africa. It is commonly referred to as betel nut, not to be confused with betel (*Piper betle*) leaves that are often used to wrap it (a preparation known as paan).

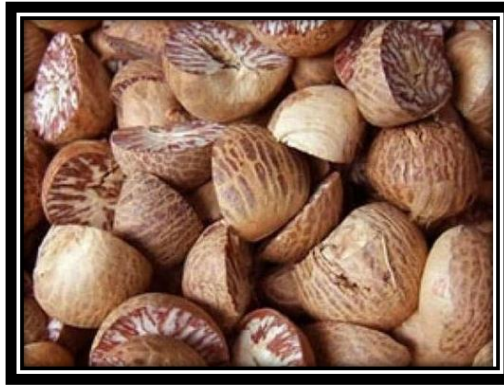


Fig No. 2 Normal Areca Nut

Systemic effects of Areca nut affect almost all organs of the human body, including the brain, heart, lungs, gastrointestinal tract and reproductive organs. It causes or aggravates 3 pre-existing conditions such as neuronal injury, myocardial infarction, cardiac arrhythmias, hepatotoxicity, asthma, central obesity, type II diabetes, hyperlipidemia, metabolic syndrome, etc. Areca nut affects the endocrine system, leading to hypothyroidism, prostate hyperplasia and infertility. It affects the immune system leading to suppression of T-cell activity and decreased release of cytokines. It has harmful effects on the fetus when used during pregnancy



Fig No. 3 Areca Nut Palm

Like the above-mentioned information, half Areca nut's structure and functions are same. Just difference is, half Areca nut is rarely available and rich in good effects. This medication is use by topical route for treatment of Supratrochlear nerve pain in very minimum amount, therefore it does not have any side effects.

Areca nut is produced from palm trees, majorly in Southeast Asian countries. This is mainly due to the dependency of areca nuts on the geographic and climatic conditions of the region. Therefore, the price fluctuations are majorly dependent on their production.



Fig No. 4 Half Areca Nut

The areca nuts market is segmented by geography (North America, Europe, Asia-Pacific, South America, [Grab your reader's attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.] and Africa). The report includes the production (volume), consumption (volume and value), import (volume and value), export (volume and value), and price trend analysis. The report offers the market size and forecasts in terms of value (USD million) and volume (metric ton) for all the above segments.

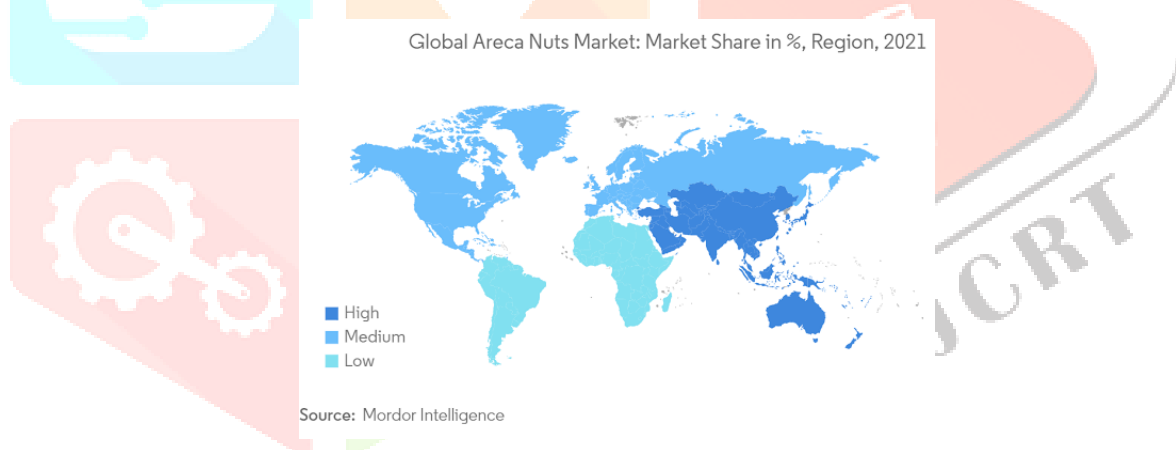


Fig No. 5 Global Market of Areca Nut

MIGRATION STUDY:

Studies of migrant populations have proved of considerable interest to epidemiologists working in the field of cancer research in suggesting the extent to which environmental exposures are important in the aetiology of specific cancers. Migrant studies on oral cancer risk have included Indians living in the Malay peninsula⁵ and Natal province in South Africa⁶ and several Asian groups who have migrated and settled in Britain. Examination of these risk habits among Asian migrants has shown that the use of areca nut alone or in the form of betel quid is prevalent in these communities and the patterns of use are closely similar to the local chewing customs prevalent in their countries of origin. Several population studies conducted among

Asian ethnic minority groups resident in the South Africa and in the United Kingdom are reviewed below.

INGREDIENTS:

1. Half areca nut
2. Sodium benzoate
3. Rose Water

DESCRIPTION OF INGREDIENTS:

ROSE WATER:

Rose water is a flavoured water made by steeping rose petals in water. Additionally, it is the hydrosol portion of the distillate of rose petals, a by-product of the production of rose oil for use in perfume. Rose syrup (not to be confused with rose hip syrup) is a syrup made from rose water, with sugar added. Gulkand in South Asia is a syrupy mashed rose mixture. Since ancient times, roses have been used medicinally, nutritionally, and as a source of perfume.



Fig No.6 Rose water

Rose perfumes are made from rose oil, also called attar of roses, which is a mixture of volatile essential oils obtained by steam-distilling the crushed petals of roses. Rose water is a by-product of this process. The cultivation of various fragrant flowers for obtaining perfumes, including rose water, may have originated in Persia, where it was known as gulāb, from gul. Fig.12 Rose Water 16 The term was adopted into Medieval Greek as zoulápin. The process of creating rose water through steam distillation was refined by Persian chemists in the medieval Islamic world which led to more efficient and economic uses for perfumery industries.

Rose water and dry rose flowers are used in traditional Indian medicines, and they are also used as food adjuvants (1). Under the Indian System of Medicine, various rose preparations are being used as an astringent, tonic (2-4), mild laxative, antibacterial and in treatment of sore throat, enlarged tonsils, cardiac troubles, eye diseases, gall stones, cooling effect and as vehicle for other medicines (5). A literature survey revealed that no chemical investigation has been carried out on Indian rose water although some references on the qualitative chemical

composition of European rose water were found (6-14). In addition, rose oil prepared by different methods from Bulgarian, Turkish, Indian and other rose species have been the subject of numerous investigations (15-39). Rose water is a liquid preparation obtained by hydro distillation of fresh rose flowers (ex. *Rosa damascena*). Alternatively, at some places air-dried rose flowers (ex. *Rosa damascena*) and air-dried/fresh flowers of other cultivated *Rosa* species are also being employed for the preparation of Rose water. Some industrial houses also use rose oil for the preparation of rose water (40). In this procedure, rose oil (0.02-0.05%) is simply diluted with distilled water and some preservative is added. The quantitative composition of a liquid-liquid solvent extraction of rose water volatiles is quite different from rose oil as revealed from the present study.

SODIUM BENZOATE:

Sodium Benzoate is used as a preservative to prevent food from molding. It helps keep our products shelf-stable for at least two years from the date of purchase and is used in concentrations of less than 0.5% by volume. The effects of sodium benzoate preservative on micronucleus induction, chromosome break, and Ala40Thr superoxide dismutase gene mutation in lymphocytes were studied. Sodium benzoate concentrations of 0.5, 1.0, 1.5, and 2.0 mg/mL were treated in lymphocyte cell line for 24 and 48 hrs, respectively. Micronucleus test, standard chromosome culture technique, PCR, and automated sequencing technique were done to detect micronucleus, chromosome break, and gene mutation. The results showed that, at 24- and 48-hour. incubation time, sodium benzoate concentrations of 1.0, 1.5, and 2.0 mg/mL increased 6 micronucleus formation when comparing with the control group ($P < 0.05$). At 24- and 48-hour. incubation time, sodium benzoate concentrations of 2.0 mg/mL increased chromosome break when comparing with the control group ($P < 0.05$). It is absorbed, metabolized and excreted rapidly after ingestion. Sodium benzoate is not a toxin or carcinogen on its own, and large amounts of it would have to be consumed, not applied topically, for any adverse effects to be seen.

USE OF SODIUM BENZOATE:

- In food industry for prevent the harmful bacteria.
- It is used as a preservative in soft drinks to increase the acidity flavour and as a preservative to extend the shelf life.
- cosmetics also need preservatives to prevent the growth of bacteria.
- It can be used as an anti-corrosive and preservative in a large variety of personal care products.
- It can also be used in pharmaceutical products for its antimicrobial properties.

MATERIALS:

1. SPEWING STONE:

Soapstone is an ancient stone that has been used widely by our ancestors. From a very long time, the soapstone has been used for various purposes such as kitchenware, religious tools and also a medium for carving. Soapstone Sandal Rubbing Stone is a tool used to rub the sandalwood intended to make a paste out of it. Sprinkling water on the surface, the soapstone Chandan Pata is rubbed to get the paste. Made of soft stones, these rubbing stones are used in houses or places where pooja is performed. The product is perfectly finished with an appropriate base for a perfect grip and balance. It is very strong and usually lasts for generations. You can now buy this classic and traditional Soapstone Sandal Rubbing Stone online from Tredy Foods and get it delivered to your doorstep. Two Sandalwood Sticks and a Rubbing Stone (also known as Chakla) for making Chandan paste out of the stick. The sandalwood paste produces a gentle fragrance and has a cooling effect and is perfect for applying to your beloved Deities particularly in the warmer months. Weight of sandalwood sticks is approx. 80g (2 x 40g) depending upon the stick size and cutting. Please Note: This is sandalwood however now they are only taking branches from the sandalwood trees, not the whole tree like before, so the scent is not as strong as you may have experienced in the past.



Fig No.7 Spewing Stone

That very strong sandalwood is now not available, if available it is extremely expensive. So this is real sandalwood at a reasonable price but scent is less strong. These Sandalwood Chandan sticks come from the sandalwood trees in South India. The Chandan Paste can be included in the charanamrta (water left after bathing the deities) The Rubbing Stone (Chakla) is provided for rubbing the sticks and extracting the paste. The stone is a little delicate and breakable, so please handle it with care. Directions for Use: 1. Take the stone and add a few drops of water on it to make the surface wet. 2. Take the sticks and start rubbing on the surface with a little pressure. 3. The paste extracted henceforth is ready for applying.

2. SPATULA

3. WEIGHING MACHINE

FORMULATION OF PASTE:

To carry out process of areca nut paste formation we followed following steps:

1. Collecting the material and ingredients.
2. Weighing 0.3g of sodium benzoate by using weighing machine.
3. Take few drops of rose water on spewing stone.
4. Start spewing the half areca nut on spewing stone.
5. After the formation of thick paste or semi solid paste of half areca nut, sodium benzoate powder is added in it.
6. Mix the mixture properly.
7. Store this mixture or final product in container, & store in refrigerator.
8. After the completion of formulation physical and chemical tests are taken.

PHYSICOCHEMICAL PROPERTIES OF PASTE:

Sr.No.	Tests	Observation
1.	Appearance	Thick Paste
2.	Colour	Reddish Brown
3.	Odour	Sweet
4.	Taste	Bitter
5.	Sensation after applying	Cool
6	Solubility	Soluble in Water
7.	Storage Condition	In Refrigerator Avoid from sunlight before applying
8.	Validity	Approximately 3 to 4 days

RESULT:

The Areca Nut has so many adverse effect when we take it orally. As per Ayurvedic tradition of India, there was verities of medicines which was used in 18th centuries, & that was very useful without any side effects. Now just because evolution, changes in behaviours, routines, works, environment etc. the mental health is also disturbing and we want that medicine which have minimum of less side effects. We just have to follow our traditional ayurvedic medicines which have less side effects. We just want to know more about herbal drugs or home remedies. There are clearly many differences in the way areca nut is consumed, on its own or often in combination with many other ingredients, including tobacco. In India alone, Pindborg et al., 34 in the 1960s, described 38 different combinations of areca nut and tobacco use according person's recipe.

In some populations the chewing of areca nut begins at a young age and their first experience of areca use is during elementary school years.³⁵ During the last two decades, with the availability of commercially available products, the pattern of use of areca has changed rapidly and the practice of chewing Areca nut has received a boost. More precision is required in defining what is chewed³⁶ and the risk of carcinogenicity of the betel quid may well relate to the type, duration and frequency of the habit. This review identifies some ethnic groups, mainly in Melanesia, that do not use tobacco in areca/betel quid chewing and there are thus good opportunities for further research into the carcinogenicity of areca nut in these populations. While in some countries such as Thailand areca chewing is declining, there is new evidence that areca usage is increasing in other countries, notably in India and Taiwan, thus increasing the risk of these populations to develop oral sub- mucous fibrosis and oral cancer.

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