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Formulation and Evaluation of Herbal Toothpaste

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Abstract: ***Neem, "the bitter gem" is one of the most valued trees with many medicinal applications. The scientific name of neem is Azadirachta indica and belongs to Meliaceae family. It is the world's most studied tree in the world and most promising one in the 21st century. Every part of the tree has medicinal value, such as flowers, leaves, neem cake, fruits and seed oil. Almost 300 different phytochemicals have been found in neem tree with versatile application. The aqueous and alcoholic leaf extract of neem is accounted for to have different pharmacological activities . In current situations oral dental care with use of herbal toothpaste containing natural ingredients are more acceptable in public belief than chemical based synthetic formulations due to their safety and efficacy in reducing dental caries, and preventing other dental issues to which this generation is prone to. In this formulation we utilizes clove oil, neem extract, peppermint oil, which are used in this research work. These extracts possess many activities like anti-ulcer, anti-caries, anti- bacterial, wound healing along with which it certain special additional properties like anti-fungal and anti – microbial . Important physical parameters i.e. pH, stability, spreadability, foamability, to make a successful more efficacious and stable formulation. This study that our herbal based toothpaste formulation having natural ingredients.***

Keywords: Neem, Clove, Herbal toothpaste, Teeth, antimicrobial activity , Stability, foaming power, Spredabilty,

I. INTRODUCTION



For millennia, the primary source of medicine has been the agents that are originating from natural sources especially the plant sources. Azadirachta indica, often known as Indian neem (Margosa tree) or Indian Lilac, is an evergreen tree that is widely planted throughout the Indian subcontinent. Since long back, Ayurveda has considered neem (A. indica) as a cure for many ailments, predominantly due to its superb antimicrobial activity.

Neem is widely utilised in ayurvedic and homoeopathic medicine, and it has become a modern medicine . The Sanskrit name for the neem tree is 'Arishtha,' which means 'Reliever of Sickness.' It is also known as 'Sarba-roga-nibarini'. The neem tree is still referred to as a "Village Dispensary" in India.

Every part of the neem tree has medical potential and can thus be profitably exploited. During the most recent fifty years, extensive advancement has been accomplished with respect to the biological and therapeutic utilizations of neem. The medicinal plant's therapeutic effectiveness is due to a bio-chemical ingredient that has a specific physiological effect on the human body. Herbal and Herbal based toothpaste has been used since many years ago in ancient life and is one of the main important components of oral health care .[1]

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The manufacturing and development of toothpaste formulations began in China and India, as 300-500 BC. During that period, squashed bone, pulverized egg and clam shells were utilized as abrasives as a part of tooth cleaning . Modern toothpaste formulations were developed in the 19th century. After the development in the field of medicines, chalk and soap were incorporated to those formulations. Immediately after the independence, several formulation advancements of different detergents had begun, sodium lauryl sulfate had been used as an emulsifying agent. In the modern era, the focus has shifted towards the release of active ingredients during formulation developments to prevent and treat oral illness . Toothpaste is a dentifrice used to clean, maintain and improve the health of teeth. Toothpaste is mainly used to promote oral cleanliness and also acts as an abrasive that helps to prevent the dental plaque and food particles from the teeth, aids in the removing and releases active ingredients such as fluoride to aid in preventing tooth and gum disease (eg. Gingivitis).[2]

The use of many herbal formulations are very effective as they contain active chemical ingredients such as polyphenols, gums, alkaloids, glycosides etc. These formulations have also been investigated to have different biological activities . This increases scope for formulating and evaluating new formulations of herbal toothpaste. Toothpaste is a dentifrice used to clean, maintain and improve the health of teeth. The use of many herbal formulations are very effective as they contain active chemical ingredients such as polyphenols, gums, alkaloids, glycosides etc. These formulations have also been investigated to have different biological activities This increases scope for formulating and evaluating new formulations of herbal toothpaste.[3] History of tooth attachment In ancient times Indians, Egyptians and The Romans used powderedashes, an egg shells and myrrh to clean their teeth. It was used by the Chinese and the Greeks crushed oysters and crab shells with crushed bones and horns of various kinds animals in the toothpaste of their teeth, in that time they reach abrasive abrasive action with built-in toothpaste. At the beginning of the 17th and 18th centuries it was made by humans toothpaste to make it easier for them every day use.[4] Although the first tooth powder was built by the Chinese and the Romans, in particular in its composition contains coal (or) bark powder, ginseng, mint and salt common ingredients. Yet they believe that toothpaste is helpful in repairing loose teeth, tightening of the gums as well whiten teeth and encourage relief from toothache. More than the first organic tooth paste was developed by a dentist named after Drs. Washington Wentworth Sheffield somewhere in the early 1850's. [5]

II. DESCRIPTION OF TOOTHPASTE

Toothpaste is a kind of solid dosage found in the attachment (or) of gel forms which havea strengthening effect in the end dental health and beauty effect by to find an act of injury to the teeth. It is also used to accomplish pressure actions such as toothache (dentalgia), Halitosis and Gingivitis (gum disease) in tooth decay and food particles from teeth. A modern statement on thetooth paste most of the cleaning action of teeth obtained by mechanical action toothpaste can be attached to the tooth. Yet in our daily activities we it cannot be separated from brushing teeth with toothbrush and toothpaste. Tooth brushing operations should be done 2-3 times a a day especially performed after each meal.[6]

III. MARKET TOOTHPASTE ARE MAINLY DIVIDED INTO TWO TYPES.

Organic toothpaste Herbal toothpaste

A. Organic Toothpaste



1) Organic Toothpaste

Organic tooth is oral hygiene products that mainly contain organic ingredientsintended to ensure dental hygiene and removal of plaque.

2) Application

a) Fluoride present in organic matter Brushing teeth helps prevent it holes through mineralrecovery function which means the conversion of its enamel and bones
b) Treatment of Halitosis.
c) It facilitates oral hygiene nature and fresh air. Attachments of live infected teeth are good
d) The work of killing for what it is helpful in the treatment of Dentalgia also Gingivitis.
e) An existing source of calcium in organic tooth paste gives a good feeling sterile and mouth-watering the occurrence of freshening.
f) Organic toothpaste is strong material due to glycerin and pH More than most living teeth.
g) SLS is present in organic tooth paste causes drying of existing tissues in the mouth and finally SLS dealing with oral cancer. If more the amount of organic tooth paste was swallowed, causing harmful effects as a cleansing agent for stomach upset and in some cases it causes courage damage. An organic fluoride source present in organic brushing teeth may be mandatory fluorosis and overdose lead to conjunctivitis (dental disease), cancer, kidney disease(or) kidney failure etc.[7]

B. Herbal Toothpaste



1) Herbal Toothpaste

Herbal tooth paste is an oral hygiene products that maintain dental health, containing mainly plant products (or) plant alternatives intended to protect the teeth gums from bacteria and are useful in tightening teeth without causing any kind of irritation and harmful consequences teeth. Basically herbal tooth paste is such very safe for everyday use.[8]

2) Application

a) Herbal tooth pastes are not toxic either not naturally irritating.
b) Herbal products guarantee the highest quality of this purity and everyday use.
c) Herbal tooth paste is a recreational area disinfection and dental analgesic properties.
d) For this reason helps prevent dentalgia, gingivitis and halitosis. More about these herbal products
e) Recent research has concluded that herbal tooth paste are also used in acne treatment.
f) Yet most herbal tooth free pastes in SLS, parabens, fluoride (NaF) and chlorine (Triclosan)source. And free from production sweetener sodium saccharin.[9]

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IV. TAXONOMY OF NEEM PLANT



FIG: Neem Plant

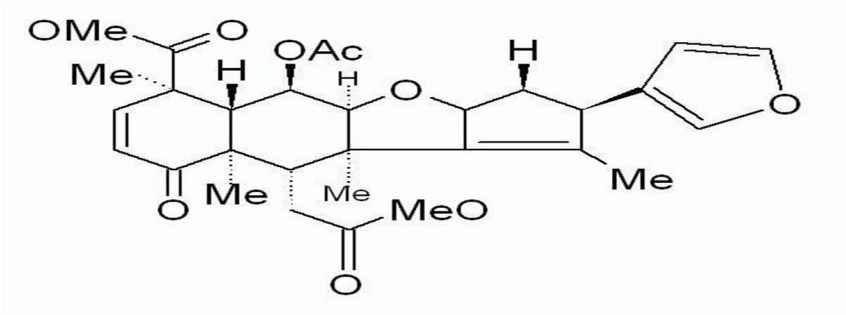
- Order - Rutales Suborder - Rutinae
- Family -Meliaceae (Mahogany family) Subfamily -Melioideae
- Nation- Melieae
- Genus - Azadirachta
- Species – Indica
- Neem Chemistry

Neem can be called the “repository” of a number of phytochemical chemicals. More than 300 The two most important phytochemicals it contains divided into different components of neem are isoprenoids, and non-isoprenoids. Many A well-known isoprenoid includes diterpenoids, vilasinins, triterpenoids, limonoids, C-secomeliacins while proteins, carbohydrates (polysaccharides), sulfur compounds, tannins, polyphenolics such as flavonoids and their glycosides, dihydrochalcone, coumarin and aliphatic compounds, phenolic acids fall under non- isoprenoids .[10]

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1) Chemical Constituents

Nimbin



Structure Of Nimbin

It is the first combination to be studied. Some of the phytochemicals found in neem are nimbolide, azadirachtin, azadiradione, gedunin and azadirone Complex structure of phytochemicals has made a huge difference. The chemical structure of the various phytochemicals present in the neem tree.[11]

2) Neem as a Medicinal Plant

Medicinal plants were now part of human society to fight disease from the beginning of civilization. For more than 2000 years, in India and its neighboring nations, neemis one of highly flexible medicinal plants with a wide range of organisms. All parts of neem viz tree. leaves, flowers, fruits, seeds, roots and bark have great healing properties amount and traditionally used to treat colds, skin diseases, inflammation, diseases and dental disorders. Some drug prices for a different section of the neem tree is given below Seeds: Neem oil found in neem seeds.

3) Uses

Neem oil is used as an Analgesic, Antihelminthic, Anticholinergic, Antihistaminic, Antipyretic, Antiviral.[12]

V. TAXONOMY OF CLOVE



Fig: Clove

- *Scientific Name:* Syzygium aromaticum
- *Family:* Myrtaceae
- *Order:* Myrtales
- *Kingdom:* Plantae

1) Uses

The clove parts of the toothpaste can protect teeth and gums from infection and ensure strong teeth and gums. Therefore, you will be able to protect your teeth from the holes to some degree. Mixing ground cloves with a pinch of salt makes a fine powder that will be used to whiten teeth.[13]

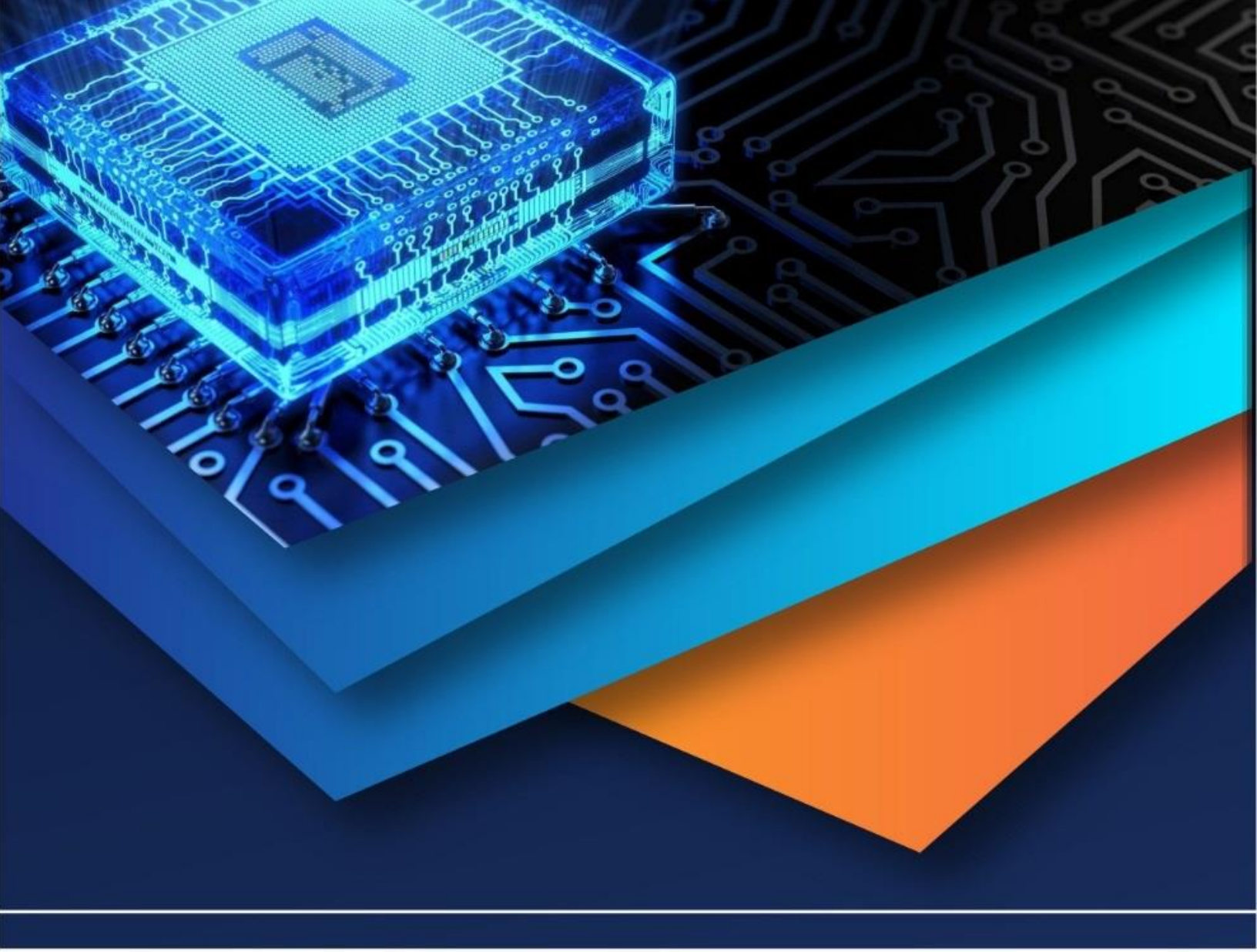
VI. AIM

"Formulation and evaluation of herbal toothpaste"

VII. OBJECTIVES

1) To prevent the microbial growth in teeth .
2) To useful in toothache and cleaning of teeth.
3) The aim of this study was to evaluate the antimicrobial potential of herbal toothpaste against various oral microorganisms.
4) The neem has been antimicrobial activity is has evaluated from the ancient times. It has been use to prevent the astringent, antiseptic, insecticidal, anti ulcer and for cleaning the teeth and other dental disease.
5) The herbal toothpaste formulated which can satisfy all the required condition to keep the mouth fresh and prevent tooth decay by bacteria.
6) Toothpaste is used to promote oral hygiene .

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