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"HERBAL MEDICAL PLANT USED IN TOOTH POWDER FOR ORAL CARE

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ABSTRACT :

Dental are the products used to keep teeth from decaying and to maintain oral hygiene, such as mouth freshness. It is possible to keep up oral hygiene throughout the day by employing several toothbrushes manufactured of synthetic and herbal components. This project was conducted in order to create a tooth powder that is utilized as a method to support good dental care and to overcome typical tooth's negative effects powder that serves as a method for appropriate oral cleanliness and to combat the adverse effects of the typical tooth powder composed with artificial components. Traditional herbal toothpowders are employed in a dental cleanser and are moreover utilized for a number of gum disease, tooth decay, and other oral diseases teeth pain and sensitivity this is your main goal.

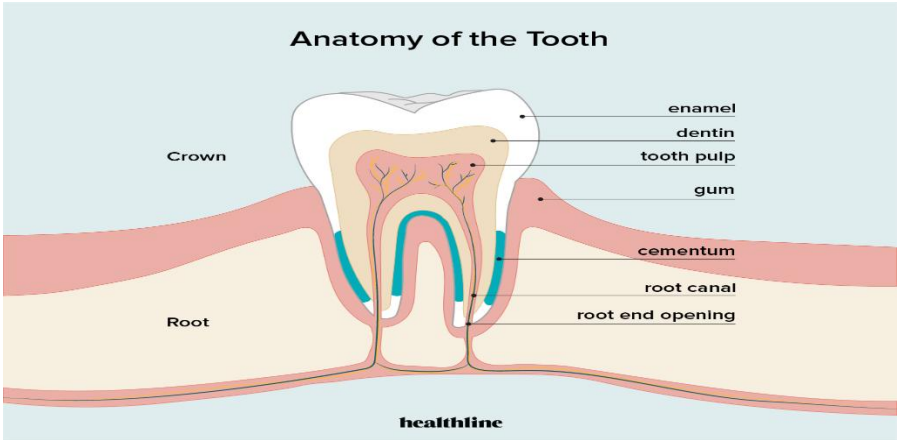
Keywords: Analgesic, anti-inflammatory, herbs, natures, Ayurveda, relive, charka Samhita, diseases, Indian medicine, and healthy life

1. INRODUCTION :

Since from ancient time we used an herbal medicine because of less side effect, less adverse effect, less effect etc.….India has a rich history of traditional system of medicine based upon six systems, out of which Ayurveda stands to be the most ancient, most widely accepted, practiced and flourished indigenous system of medicine.

The other allied systems of medicine in India are Unani, Siddha, Homeopathy, and Naturopathy. history. Archaeological evidence indicates that the use of medicinal plants dates back to the Paleolithic age, approximately 60,000 years ago. Written evidence of herbal remedies dates back over 5,000 years to the Sumerians, who from Ancient Period of Time, People Are Aware of the Use of Plants for the treatment

Herbal toothpowder are oral care products made from natural plant based on ingredient that are used to combat tooth decay-- have cleaner, sweeter breath, health gum,



Your teeth are an essential part of your digestive system. They help you bite, tear and grind food up before swallowing It. Human teeth are made of four types of tissue are as follows: -

- Enamel
- Dentin
- Cementum
- Pulp

- **Enamel**

The hard, visible layer that covers your teeth's front is called tooth enamel. Because enamel is transparent, it gives teeth their shine. Depending on how thick it is, the color of the inner dentine underneath the enamel can vary from light yellow to a gray or blue-like white.
Function

Enamel protects our tooth from damage. Specifically, it protects the innermost layers of your tooth the dentin and tooth pulp from: Tooth decay (cavities).

- **Dentine**

Dentine is the main supporting structure of the tooth and is the second hardest tissue in the body after enamel.

Function

Function is to support the structure of enamel.

- **Cementum**

A tough layer of tissue called cementum aids in the periodontal ligament's strong attachment to a tooth. Cementum is slowly formed throughout a lifetime by cementoblasts. The hard, calcified layer of tissue covering the tooth root is called cementum.

Function

The cementum's primary purpose is to act as an attachment point for the collagen fibers found in the periodontal ligament.

- Pulp

The tooth's innermost layer is called the pulp. It is made up of connective tissues, blood vessels, specialized cells, nerves, and other components that give your tooth nutrition.

Function

Your tooth's dental pulp, to put it simply, is what gives it life. Your tooth's pulp is protected from harm by the enamel and dentin on the exterior.

There are several common tooth problems :

Tooth decay: Also known as Cavity. Permanently damaged areas in teeth that develop into tiny holes. Causes include bacteria, snacking, sipping sugary drinks and poor teeth cleaning.

Periodontal diseases: A serious gum infection that damages gums and can destroy the jawbone. Periodontitis is common but fairly preventable. The cause is usually poor oral hygiene. Periodontitis can lead to tooth loss. It's a risk factor for heart and lung disease

Gum Disease: This is the leading reason for tooth loss. It's one of the world's main causes of tooth loss, the researchers note. Men were more likely than women to have a tooth removed.

Tooth Loss: Gum (periodontal) disease was the leading reason for tooth loss.

Gingivitis: Most children have signs of some inflammation of the gingival tissue at the necks of the teeth; among adults, the initial stage of gum disease is prevalent. This condition is termed gingivitis and is characterized by redness of the gum margins, swelling and bleeding on brushing

Periodontitis: When periodontal disease affects the bone and supporting tissue, it is termed periodontitis and is characterized by the formation of pockets or spaces between the tooth and gums. This may progress and cause chronic periodontal destruction leading to loosening or loss of teeth.

Teeth Sensitivity: Teeth sensitivity can occur when you consume hot, cold, sweet or sour foods and drinks, or even by breathing cold air. Pain can be sharp, sudden and shoot deep into tooth nerve endings

METHODOLOGY

1 Neem powder:

Synonyms: Nimtree, Indian Lilac and Azadirachta indica

Biological source: Neem is known for its immeasurable medicinal properties and is used as a main ingredient in many home remedies, Commending the medicinal properties of neem, numerous Sanskrit names have been coined by our Ayurda charyas

Family: Meliaceae.

Chemical constituents: Seeds of the neem tree contain the highest concentration of Azadirachtin, apart from Azadirachtin, solanine, gedunin, azardirone, nimbin, nimbidine, nimbicidine, nimbinol, etc are other important liminoids of neem.

Condition:

- used for leprosy,
- eye disorders,
- bloody nose, intestinal worms,
- stomach upset,
- loss of appetite,
- skin ulcers,
- gum diseases,
- diseases of the heart and blood vessels,
- fever,
- diabetes
- liver problems.

Physical properties

1.Colour: Greenish yellow.
2.Molecular weight: 720.7 g/mol.
3.Melting point: 205°C
4. pH:6
5.Odour: garlic/Sulfur smell.
6.Taste: Bitter taste.
7. Neem is alkaline

2 Clove powder:

Synonyms: Clove buds, clove flowers, Syzygium aromaticum

Biological source: Clove consists of the dried flower buds of Eugenia caryophyllus Thumb.

Family: Myrtaceae

Chemical constituents: Eugenol, Acetyl Eugenol, Volatile Oil, alpha, Beta- Caryopyllene, Tannins

Conditions:

- Antibacterial properties
- anti-inflammatory properties,
- Cloves are packed with fiber
- Help regulate blood sugar levels,
- Help alleviate tooth pain,
- help protect against aging,
- used as a cough suppressant

Physical properties:

1.Colour: Dark brown in hue with a reddish tinge.
2.Molecular weight: 205.64 g/mol.
3.Melting point: 251°C
4.pH: 3.8
5.Clove is highly acidic in nature
6.Odour: sweet, clean clove spicy, Eugenol, woody, with cooling phenolic nuances.
7.Taste: Strong, warm, somewhat spicy taste.

3 Tulsi

Synonyms: Ocimum sanctum, Ocimum tomentosm

Biological source: Tulsi consists of the fresh and dried leaves of Ocimum species like Ocimum sanctum L. and Ocimum basilicum L. etc.

Family Name: Lamiaceae (Labiatae).

Chemical constituents: Tulsi leaves contain height, yellow coloured and pleasant volatile oil, the oil content of the drug varies depending upon the type, the place of cultivation and season of its collection. The oil is collected by steam distillation method from the leaves and flowering tops.

Conditions:

- Rich loam to poor laterite
- Saline and alkaline to moderately acidic soil are well suited for the cultivation.
- Well drained soil helps better vegetative growth.
- The plant can be grown under partially shaded conditions but with low oil content.

Physical properties:

1.Colour: bright green leaves.
2. Odour: Aromatic
3.Taste: Astringent, pungent, warm and sweet
4. Tulsi is acidic in nature

4 Alum

Synonyms: Potash Alum potassium aluminium sulfate

Biological source: Alums occur naturally in various minerals. Potassium alum, for example, is found in the minerals kalinite, alunite, and leucite, which can be treated with sulfuric acid to obtain crystals of the alum

Chemical constituents: Alum is basically a hydrated double sulphate salt of aluminium. The general chemical formula for alum is XA1(SO4)2.12H2O.

Conditions:

- It has antiseptic properties that help to fight against tooth decay.
- This further prevents cavities and strengthen the gums.
- Alum is an effective remedies for teeth and gums related problems.

Physical properties:

1. Colour: colourless, clear.
2. molecular weight: 474.39 g/mol
3. Melting point: 92.5°C
4. Odour: odour less
5. Taste: astringent and acid taste
6. Alum is acidic in nature.

Synonyms: Mentha piperita ucalyptus amygdalina, eucalyptus,

Biological source: Mentha piperade is a strongly scented perennial herb belonging to family Labiata

Family Name: Mint,

Chemical constituents: The essential oil from peppermint (Mentha x piperita L.) was analyzed by GC/FID and GC-MS. The main constituents were menthol (40.7%) and menthone (23.4%).

Conditions:

- Strengthening teeth and gums
- Keep your mouth moist and fresh
- Its natural anti-inflammatory and anti-bacterial
- Freshen breath

Physical properties:

1.Colour: light, vibrant shade of green
2. Molecular weight: 965.5 g/mol
3.Melting point: 43°C.
4.PH: 6.45.
5.Odour: fresh , cool, and refreshing aroma.
6.Taste: sweet and lingering cool and menthol.
7. Mint is alkaline in nature.

6 Turmeric

Synonyms: haldi , Curcuma; Rhizome curcuma; Saffron Indian, haridra .

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

Family Name: Ginger family

Chemical constituents: 60–70% carbohydrates, 6–13% water, 6–8% protein, 5–10% fat, 3–7% dietary minerals, 3–7% essential oils, 2–7% dietary fiber, and 1–6% curcuminoids

Conditions:

- Turmeric makes gums and teeth strong,
- It can be used for relief from dental problems
- It can be used for relief pain and swelling
- It can be used for relief gingivitis and periodontitis.

Physical properties:

1.Colour: Deep-orange-yellow powder.
2. Molecular weight: 368.38 g/mol
3.Melting point: 175-180 °C
4.pH: 5.90
5.Odour: Warm, bitter mustard-like aroma.
6.Taste: earthy essence with a touch of sweetness, accompanied by notes of ginger and pepper
7.Turmeric is acidic in nature

7 Charcoal

Synonyms: Carbon, Ash, Char, residues

Biological source: biochar, form of charcoal made from animal wastes and plant residues

Family Name: Hydrous potassium, aluminium sulfate

Chemical constituents: Charcoal contains varying amount of hydrogen and oxygen as well as Ash and other impurities.

Conditions:

- Removes superficial stains
- Make the teeth appear whiter.

Physical properties:

1.Colour: deep gray with the undertone of blue.
2. Molecular weight: 12 g/mol.
3.Melting point: 3550°C.
4.Odour: Odour less
5.Taste: earthy and smoky taste.
6.Charloal is alkaline.
7.pH: 9-11

8 Muster oil

Synonyms: Carbon, Ash, Char, residues.

Biological source: biochar, form of charcoal made from animal wastes and plant residues

Family Name: Hydrous potassium, aluminium sulfate

Chemical constituents Mustard oil has 60% mono unsaturated fatty acids, it has about 21% polyunsaturated fast, and it has about 12% saturated fats.:

Conditions:

- Mustard oil helps to strengthen your gums
- Make it easier to remove the plaque.

Physical properties:

1.Colour: reddish brown or Amber in colour.
2.Molecular weight: 99.15 g/mol
3.pH: close to 7.0.
4. Odour: strong and pungent sharp flavor.
5.Taste: pungent peppery taste
6.mustard oil is medium acidic.

9 Aegle marmelos (Bael)

Synonyms Beal

Biological source: Aegle marmelos parts of plant leaves

Family Name: Rutaceae

Chemical constituents: Coumarin, Xanthonoids, imperatorin, Angeline and marceline these compounds can provide anti diabetic, anti cancerous, anti fertility, antimicrobial, etc.

Conditions:

- Treating tuberculosis,
- Hepatitis,
- Ulcers and digestive problems.
- Helps to reduce blood sugar level and also helps to reduce swelling(inflammation).

Physical properties:

1.Colour: Greenish grey.
2.Odour: istic floral terpene like aroma.
3.Taste: sweet aromatic pleasant although tangy and slightly astringent in some varieties.
4. Bael is alkaline in nature

CONCLUSION:

The study came to the conclusion that dental research should prioritize and allow the use of herbal tooth powder. In addition, it has fewer adverse effects and is safer than synthetic medicines. The tooth powder's formulation has antibacterial action against infections and helps to preserve dental and oral hygiene. Future studies on herbal medicines and enhancing oral health in the general public might benefit greatly from the formulation of the herbal tooth powder. One important source of bacterial pathogen control is natural plant compounds. As a consequence, a herbal tooth powder was created for the current study and tested for antibacterial activity, yielding remarkable results. Based on their ability to preserve oral hygiene and their antibacterial action, the substances utilized in this work were vetted and chosen.

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