

## MEDICATED HERBAL CHEWING GUM TO TREAT DENTAL CAVITY

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### ABSTRACT

Over time, there has been a sharp rise in the quantity of Dental care products available. People employ a range of dental care products in an effort to protect their teeth, stay away from smells, and develop appealing personalities. goods. The herbal plants such as Green tea, Tulasi, clove oil, etc. have the importance since ancient. Such plants are used and herbal chew gum has been prepared. We have prepare the herbal chew gum by such mentioned herbal plants. The evaluation of the product is done by the physical and chemical parameters as Ph, colour, elasticity, etc. For more evaluation some voluntre were selected to check of the product. The result was found to be that this Herbal chew gum to treat Dental cavity can be used in day to day life without any harmful effect.

**KEYWORD:** Herbal chewing gum, Dental cavity prevention, Anticariogenic activity, Oral health care, Natural dental care.

### INTRODUCTION

Herbal chewing gum is an innovative and natural solution designed to combat the harmful effects of dental cavities while supporting overall oral health. Made with a blend of traditional herbs known for their healing and antibacterial properties, herbal gum provides a natural alternative to synthetic gums that often contain harmful additives and artificial sweeteners.<sup>[1]</sup>

By incorporating ingredients such as neem, clove, mint, and green tea, herbal chewing gum helps reduce the build-up of harmful bacteria in the mouth, stimulates saliva production, and promotes enamel remineralization.<sup>[2]</sup> Saliva is essential for neutralizing acids and protecting teeth from decay, while the antibacterial properties of herbs actively fight plaque formation, a leading cause of cavities. Unlike conventional gums, herbal chewing gum offers a holistic approach to dental care—combining modern oral hygiene practices with the wisdom of nature.<sup>[1,2]</sup> Whether used as a post-meal refreshment or as a daily oral hygiene routine, herbal chewing gum provides a simple and natural way to maintain a cavity-free smile.<sup>[3]</sup>

## IMPORTANCE OF HERBAL CHEWING GUM

Herbal chewing gum offers a natural and effective way to combat dental cavities and promote overall oral hygiene. Cavities, caused by bacterial activity and acid buildup, can weaken tooth enamel and lead to decay.<sup>[2,3]</sup> Herbal chewing gum, with its selection of plant-based ingredients, provides several benefits that help protect against cavities in a more natural, holistic manner.<sup>[3]</sup>

## KEY WAY OF HERBAL CHEWING GUM HELPS TO PREVENT DENTAL CAVITIES

1. **Stimulates Saliva Production:** Herbal gums often contain ingredients like mint or fennel, which naturally stimulate saliva flow. Saliva is a key defense against cavities as it neutralizes acids in the mouth, helps remineralize tooth enamel, and washes away food particles and bacteria.<sup>[3,4]</sup>
2. **Natural Antibacterial Properties:** Certain herbs, such as neem and clove, have well-documented antibacterial effects. These herbs can help reduce harmful bacteria in the mouth that contribute to plaque buildup, which is a leading cause of cavities and tooth decay.<sup>[4]</sup>
3. **Prevents Plaque Build-up:** Regular chewing of herbal gum helps keep the teeth clean by removing debris and preventing plaque formation. Plaque is a sticky layer of bacteria that forms on teeth, and if left untreated, it can lead to cavities and gum disease.<sup>[4,5]</sup>
4. **Strengthens Enamel:** Some herbal ingredients, like green tea extract or licorice, contain antioxidants and minerals that may help strengthen tooth enamel. A stronger enamel layer is less prone to acid erosion, which is a common cause of cavities.<sup>[5]</sup>
5. **Reduces Sugar Cravings:** Herbal gums can help satisfy the need for sweet tastes, making them a great alternative to sugary gums that contribute to cavities. Many herbal gums use natural sweeteners like xylitol, which not only adds sweetness but may also help reduce cavity-causing bacteria in the mouth.<sup>[5,6]</sup>
6. **Holistic Oral Care:** With ingredients like tulsi (holy basil), which has antimicrobial and anti-inflammatory properties, herbal gum promotes overall oral health. The gum helps balance the mouth's microbiome, creating an environment that's less conducive to harmful bacteria that cause tooth decay.<sup>[7,8]</sup>
7. **Prevents Dry Mouth:** A dry mouth can increase the risk of cavities because it reduces saliva production, which is essential for washing away bacteria and neutralizing acids.<sup>[9]</sup> Chewing herbal gum can prevent this by maintaining moisture levels in the mouth, offering protection against cavities.<sup>[9,10]</sup>

## FORMULATION TABLE

Table No. 1.

Ingredient	F1	F2	F3
Acacia	1gm	1gm	1gm
Glycerine	1ml	2ml	1ml
Tulsi	0.07gm	0.09gm	0.1gm
Clove Oil	0.2ml	0.09	1ml
Honey	1ml	1ml	1ml
Green Tea	0.08gm	0.09gm	0.1gm
Elaichi	0.01gm	0.01gm	0.01gm

## METHOD OF PREPARATION

1. Firstly the fresh leaves of the Tulasi are taken and dried.
2. After the complete dry, the leaves are triturated till the uniform powder is form.
3. Then Pass the powder from the mesh sieve size 40.
4. Then after the green tea is taken and dried and triturated in motor pestal till become the fine powder.

5. After that Elaichi is also triturated till forms fine powder.
6. Then now pass all the powders through the sieve size 40.

#### PREPARATION OF HERBAL CHEWING GUM

1. Take accurately 1gm of accacia and 1ml of the Glycine and mix them well.
2. Add 0.1gm tulsi and mix it to uniform form.
3. The pinch of elaichi powder is add to the above mixture.
4. The drop of clove oil is add to mix the powder properly.
5. The 0.1gmGreen tea is added as solvent
6. After the proper formation the 1ml honey is added as essence and
7. Flavour preservative.

#### EVALUATION OF HERBAL CHEWING GUM

SR.NO.	PARAMETER	FORMULATION
1	Colour	Brown
2	Stickness	Sticky
3	Elasticity	Elastic
4	Wt. Variation	Within limit
5	Hardness	Within limit

#### ADVANTAGES OF HERBAL CHEWING GUM

1. Prolonged Contact with Oral Cavity
2. Saliva Stimulation
3. Antimicrobial Action
4. Reduced Plaque and Tartar Formation
5. Natural Analgesic and Anti-inflammatory Effect
6. Convenient and Portable
7. Non-invasive Approach
8. Dual Function
9. Improved Oral Hygiene Compliance
10. Holistic Benefits

#### INGREDIENTS

##### Acacia



Synonym- Gum Arabic Tree

Biological Source- The dried gummy exudates from the stems and branches of Acacia Senegal

Family- Leguminosae

Use- Texturing, Film forming agent

**Tulsi**

Synonym- Queen of herbs, Tulasi

Biological Source- fresh and dried leaves and aerial parts of *Ocimum Sanctum* Linn

Family-Lamiaceae

Chemical Constituents: Volatile oil, Flavanoids, Triterpenoids, Phenolic compounds.

Use- Reduce inflammation, Protect against bacterial inflammation.

**Clove**

Synonym- Clove

Biological Source- The dried, unopened flower buds of the tree *Syzygium aromaticum* L

Family- Myrtaceae

Chemical Constituents- Eugenol,

Eugenol acetate

Use- Natural Anesthetics, Anti inflammatory.

**Green Tea**

Synonym- Matcha

Biological Source- Evergreen Plant *Camellia sinesis*.

Family- Theaceae

Chemical Constituents- Catechin, Amino acid, Alkaloid

Use- Treat dental caries and periodontal diseases

**Honey**

Synonyms- Madh, Honey purified

Biological Source- Honeybee of the genus *Apis*

Family-Apiade

Chemical Constituents- Sugars, Acids, Enzymes, Vitamins and Minerals

Use- Kill bacteria, Reduce plaque, remove debris from tongue.

**Elaichi**

Synonym- Cardamon

Biological Source- *Electtaria Cardamomum*

Family- Zingiberaceae

Chemical Constituent- 1, 8-cineole, a-terpinyl acetate

Use- Flavoring and sweetning agent.

**RESULT**

The various parameter are used to evaluate the formulation. As the F3 was found to be useable. Hence, these are the results of F3 parameters.

**CONCLUSION**

Herbal chew gum contaning clove oil, green tea and Tulsi gives effect like antibacterial, freshening. Hence during formulation F1, F2 contain less amount of green tea and and Tulsi so, it shows the less effect as compaire to F3 because F3 contain the large amount of Green tea and Tulasi. Hence F3was found to be useable. F3 underwent evaluation tests for color, elasticity pH, wait variation, Thickness, and the findings were compatible.

Accordingly, the developed formulation can be utilized for dental Care in an effective manner, according to the investigations.

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