



Y Molars

**Incisor :-**

Your incisors are the most visible teeth in your mouth. Most people have four incisors on the upper jaw and four on the lower. These include your front two teeth and the teeth on either side of them. Each incisor has a single narrow edge, which helps cut into food when you bite.

**Canines:-**

Canine teeth get their name because they resemble a dog's fangs. They're pointier than other types of teeth. Most people have four canine teeth — one in each quadrant (upper right, upper left, lower right, lower left). Canine teeth help you tear into foods like meat and crunchy vegetables. Sometimes, people call canines "eye teeth" because of their position directly under your eyes.

**Premolars:-**

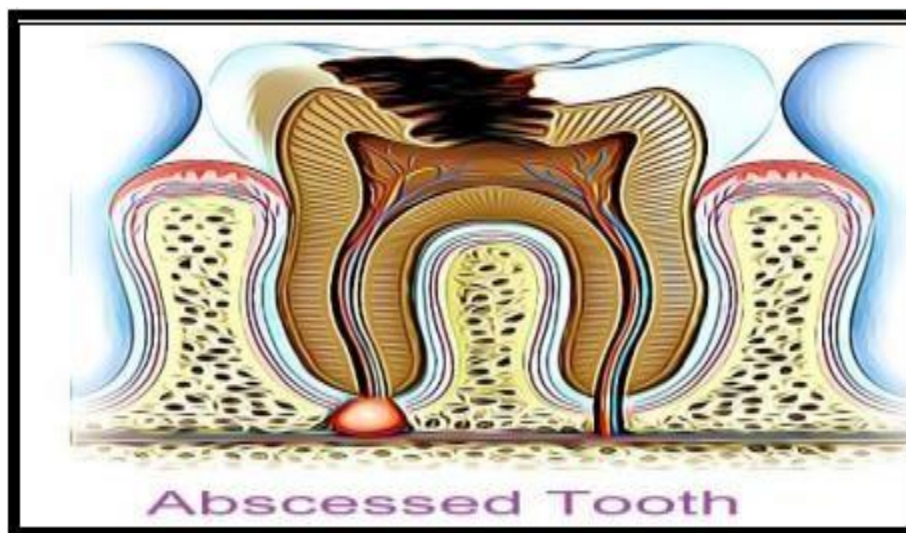
Also called bicuspids, premolars sit between your canines and your molars (the teeth in the back of your mouth). Premolar teeth have features of both canines and molars. They help you tear, crush and grind food into smaller pieces.

**Molars:-**

Your molar teeth are in the very back of your mouth. Most of your chewing — about 90% — takes place here. Most adults have 12 molar teeth — three in each quadrant. Molar teeth include wisdom teeth (third molars). So, if you've had your wisdom teeth removed, or if you were born without them, then you probably have eight molars altogether. Because molars are your main chewing teeth, they're good for crushing and grinding up your food.

**Common teeth problem: -Toothache:-**

**Sensitivity to heat, cold or sweets:** A toothache refers to pain in or around your tooth. Minor toothaches can occur from a temporary gum irritation that you can't treat at home.

**Sore, bleeding gums:**

Bleeding of the gums on gentle probing, or gingival bleeding tendency, and also bleeding in the eye, or retinal hemorrhaging, were associated with low vitamin C levels in the bloodstream .



**Some of the most common dental treatments include: -**

- Υ Dental fillings.
- Υ Dental crowns.
- Υ Dental bridges.
- Υ Dental bonding.
- Υ Teeth whitening.
- Υ Porcelain veneers.
- Υ Teeth braces.
- Υ Dental implants.
- Υ Dentures.

**Ingredients Of Herbal Toothpaste**

**Peepal Tree leaves: -**

The peepal tree is considered the mythical ‘Tree of Life’ or ‘World Tree’ of the Indian subcontinent. The peepal tree, also called *Ficus religiosa*, belonging to the family Moraceae, is a variation of the fig tree known as the bodhi tree. The word ‘Ficus’ in Latin refers to ‘fig’, the fruit of the tree and the word ‘Religiosa’ refers to ‘religion’, as it is sacred in both Buddhism and Hinduism. Also, for this reason, it is named ‘Sacred fig’. It is a huge tree often planted near holy places and temples Help to strengthen the gums and might help with toothache.it also helps to treat throat disease when boil with banyan tree.it also used for eye and hair problem The vernacular names of peepal trees are Pipal, Pipala in Hindi; Jari, Piplo, Pipalo, Piparo in Gujarati; Pimpal, Pipal, Pippal in Marathi; Ashud, Ashvattha, Asvattha in Bengali; Aswatha in Oriya; Ahant in Assamese; Pippal, Pipal in Punjabi; Ravichettu in Telugu; Arara, Arasu, Arasan, Ashwarthan, Arasamaram in Tamil; Ranji, Arlo, Basri, Ashwatha, Ashvatthanara, Aralegida, Aralimara, Basari, Ashvathamara, Ashvattha in Kannada; Arayal in Malayalam; Bad in Kashmiri.



**Scientific Classification:**

Domain	Eukaryota
Kingdom	Plantae
Subkingdom	Vridaeplantae
Phylum	Tracheophyta
Subphylum	Euphyllopsida
Class	Magnoliopsida
Subclass	Dilleniidae

**Peepal tree might have the following properties:-**

- Υ It may have antidiabetic property
- Υ It may have an anti-inflammatory potential

Y It might act as an antioxidant.

Y Anticaries.

**Botanical plant description of peepul tree:-**

Tree up to 30 metres (98 ft) tall and with a trunk diameter of up to 3 metres (9.8ft). The leaves are cordate in shape with a distinctive extended drip tip; they are 10–17 cm long and 8–12 cm broad, with a 6– 10 cm petiole. The fruits are small figs 1–1.5 cm in diameter, green ripening to purple. Ficus religiosa, commonly called Bodhi tree, peepul and sacred fig, is native to Southeast Asia, southwest China, India and the Himalayan foothills. It is a large broadleaf evergreen tree with wide-spreading branching that grows to 60-100' tall. Over time, the trunk may grow to as much as 9' in diameter.

**Chemical constituents:-**

S. No	Activity	Parts Used	Compounds Isolated
1	Anti-diabetic action and Insulin raising effect	Stem bark	3',5-dimethylether of leucocyanidin-3-O-P-D <sup>14</sup>
2	Insulin sparing action	Stem bark	3',5-dimethylether of leucocyanidin-3-O-P-D-galactosylcellobioside <sup>21</sup>
3	Hypolipidemic effect	Stem bark	5,7-dimethylether of leucopelargonidin-3-O-a-L-rhamnoside <sup>13</sup>
4	Antioxidant effect	Stem bark	5,7-dimethylether of leucopelargonidin-3-O-a-L-rhamnoside <sup>21</sup>
5	Effects on glucosesphosphate, Hexose kinase and HMGCo A reductase enzyme activity	Stem bark	3', 5 -dimethylether of leucocyanidin-3-O-P-D-galactosylcellobioside <sup>14</sup>
6	Anti-tumour	fruits	Not isolated
7	Anti-microbial	fruits	Not isolated
8	Anti-diarrhoeal	Hanging roots	Not isolated

**Marigold oil: -**

Effective in killing the bacteria which causes gingivitis to cavities.



Marigold, (genus Tagetes), genus of about 50 species of annual herbs of the aster family (Asteraceae), native to southwestern North America, tropical America, and South America. The name marigold also refers to the pot marigold (genus Calendula). It is unrelated plants of several families.

**Physical Description:**

Members of the genus Tagetes have attractive yellow, orange, or red composite flowers that are solitary on the stems or clustered. The leaves are arranged opposite each other on the stem and are usually finely cut. Characteristic bracts (leaflike structures) form a cup-shaped base below each flower head.

**Botanical plant description of marigold tree:-**

Marigold is a hardy annual herb native to Southern Europe and is also cultivated extensively in Asia, India, China and other countries with a tropical climate.

Marigold flowers have different fragrances and colors, in which the yellow color is most common. The marigold is an erect annual herb that grows up to a height of 180 cm. Marigold (Tagetes erecta Linn.) also belongs to Asteraceae family. It is an ornamental flower, commonly known as marigold. However, other names with the common name "marigold" are African marigold, American marigold, Aztec marigold, big marigold, Mexican marigold, saffron marigold, among others.

**Chemical constituents: -**

They are essential oils, carotenoids, flavonoids, terpenoids, thiophenes and phenolic compounds. the important phytochemical constituents present in the different part of the plants are lutein, quercetin, quercetagenin, a glucoside of quercetagenin, syringic acid, thienyl, terpinenes and phenolic compounds.

**Calcium carbonate: -**

Calcium carbonate is a mild abrasive which helps to safely remove plaque when brushing and gently polishes away surface stains.



**Camphor: -**

Camphor helps in managing toothache and gum diseases due to its antiinflammatory property.



**Sodium chloride:-**

sodium chloride, or table salt, as an active ingredient, salt toothpaste acts as a gentle abrasive, capable of removing stains from teeth.



**Distilled water: -** Used as vehicle in many pharmaceutical formulations.



**Procedure for formulation**

The people leaves powder are home made by shed drying.

All other materials are purchase from market and some are available in our laboratories. we had prepared three formulations in different quantities (sample formula) from those three formulations we selected one for final formulation.

**Step 1:-** The people leaves powder were passed through sieve shaker to obtain uniform size.

**Step 2:-** All required ingredients and powders for the preparation were accurately weight individually by using digital balance.

**Step 3:-** people leaves powder and other ingredients were triturated in a mortar and pastle to form uniform

mixture except methyl paraben which is used as preservatives.

**Step 4:-** mix well to form a paste with optimum thickness as like other marketed tooth pastes.

**Step 5:-** methyl paraben add at last and prepared herbal toothpaste was packed into the toothpaste tube, labeled and used for further studies.

From all three formulations we selected second formula from sample formula for final formulation..

### Performed various evaluation tests for toothpaste

Evaluation tests

#### 1. Physical Examination:

**Color:-** Formulated toothpaste was evaluated for its color. The visually color was checked and it found to be faint green.

**Odour:-** Odour was found by smelling the product, smell slightly camphor smell **Taste:-** Taste was checked manually by tasting the formulation and it was found to be sweet.

Both taste are done for physical examination

#### 2. Abrasiveness: -

Extrude the content 15-20 cm long on the butter paper, repeat the same process for at least ten collapsible tubes. Press with the contents of the entire length with fingertip for the presence of sharp- and hard-edged abrasive particles. Toothpaste shall not contain such particles.

#### 3. Determination of spread ability: -

In this method slip and drag characteristic of paste involve. Formulated paste (2g) placed on the ground slide under study. The formulated paste placed like sandwich between this slide and another glass slides for 5min to expel air and to provide a uniform film of the paste between slides. Excess of the paste was scrapped off from the edges. The top plate was then subjected to pull of 80g with the help of string attached to the hook and time (sec) required by the top slide to cover a distance of 7.5cm was noted. A short interval indicated better spread ability

#### 4. Homogeneity: -

The toothpaste shall extrude a homogenous mass from the collapsible tube or any suitable container by applying of normal force at  $27 \pm 20^\circ\text{C}$ . in addition bulk of contents shall extrude from the crimp of container and then rolled it gradually.

#### 5. Stability: -

The stability study was performed as per ICH guideline. The formulated paste was filled in collapsible tube and stored at different temperature and humidity conditions,  $25^\circ\text{C} \pm 2^\circ\text{C} / 60\% \pm 5\% \text{RH}$ ,  $30^\circ\text{C} \pm 2^\circ\text{C} / 65\% \pm 5\% \text{RH}$ ,  $40^\circ\text{C} \pm 2^\circ\text{C} / 75\% \pm 5\% \text{RH}$  for the period of three months and studied for appearance, pH and spread ability

#### 6. Moisture content Toothpaste:-

(10 gm) weighted in a Porcelain dish and dried it in the oven at  $105^\circ\text{C}$ . It was cooled in a desiccator. The loss of weight is recorded as percentage moisture content and calculated by the given formula. % Moisture =  $\frac{\text{Original sample weight} - \text{dry sample weight}}{\text{Original sample weight}}$

#### 7. Foaming character: -

1 gm of tooth paste was poured into stoppered test tube (height 16 cm. diameter 6 mm) and volume of the liquid was adjusted with the water up to 10 ml. Tube was stoppered and Shaked length wise, motion for 16 second, two shake/second. Allowed to stand for 15 minutes and height of the foam produced was measured. 2) 10% solution of tooth paste was prepared. 4ml of this solution was added to 146 ml of water at  $30^\circ\text{C}$ . The solution was agitated for 10 seconds. The foam was poured in to a 100 ml graduated cylinder to overflowing. A rubber stopper was gently dropped in to the foam. The time for the rubber stopper to pass two points (40ml/80ml) was measured. Longer time of fall indicates the denser and more stable foam.

#### 8. Organoleptic evaluation: -

Organoleptic evaluation (color, taste) was done by sensory and visual inspection.

**9. Fragrance test: -**

It was based on individual observation for its acceptability. 5 people were asked for acceptability of fragrance and their opinion was taken. And fragrance was evaluated based on the below-described criteria;

- A) The fragrance was good, as good as the fragrance of reference toothpaste
- B) The fragrance was not so good but comparable to the reference toothpaste
- C) The fragrance of the toothpaste was poor than the reference toothpaste

**10. pH test: -**

pH was tested by dissolving 1 gm product in to 9 ml of water and Shaked vigorously then aqueous solution and pH is observed by pH meter.

The standard method of toothpaste pH measurement is either to directly measure the toothpaste or to make toothpaste slurry by diluting it with water and performing pH measurement by a pH electrode

**II. CONCLUSION**

Herbal toothpaste shows the good action to maintaining the dental caries and oral hygiene. The herbal toothpaste shows the safer minimum side effects. They are low cost and available easily. They have less side effects. The formulated herbal toothpastes are evaluated by different tests like Physical Examination, pH determination, Homogeneity, Sharp and edge abrasive particles, Determination of moisture and volatile matter, Spread ability, Stability study, Extrudability etc. We prepare it with less ingredient

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