



# INDIAN HERBS FOR THE TREATMENT OF CANKER SORES

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## Abstract:-

The two most common causes of oral ulceration are local trauma and aphthous stomatitis (canker sores), a condition characterized by recurrent formation of oral ulcers for largely unknown reasons. The main purpose of this work is formulating a mouth ulcer gel by using natural ingredients with nature. This review focuses on the causes of mouth ulcer, factors responsible for the mouth ulcer. As we know herbal medicine is the main stay of primary healthcare because of better culture acceptability, better compatibility with human body and lesser side effects. This review summarises about the drugs used for the treatment of mouth ulcer which are Guava leaves, Sega leaves, Turmeric, Tulsi, Ginger, Liquorice, Triphala, Alove vera, Papaya, Neem, Chamomile, Myrrh, Tamarind, Lady's mantle, Echinacea, Noni fruit, Coconut, Pomegranate, Garlic, Hibiscus, Biological source, Family, Morphology, Chemical constituents and Uses.

**Index Terms:-** Canker Sores, Trauma, Indian Herbs

## Introduction:-<sup>[1-4]</sup>

An ulcer that develops on the mucous membrane of oral cavity is known as mouth ulcer. Also known as oral ulcer & mouth ulcer or mucosal ulcer. A mouth ulcer is a the loss of or erosion of part of the delicate tissue that lines the inside of the mouth (mucous membrane). There are many things that Causes the mouth ulcer, these are usually on inside of cheeks or lips these are painful round or oval Sores that develop in mouth.

A variety of viral, fungal, treponemal, autoimmune deficiencies, hormonal changes, physiological stresses, malignancy, nutritional deficiencies. such as iron deficiency, vitamin deficiencies particularly vitamin B12 & C, poor dental hygiene, Food allergies, hormonal etc. most common causes of mouth ulcer.

Aphthous ulcer: is a other name For mouth ulcer. Aphthous ulcer generally occur on softer mouth lining of the lips, cheeks side of the tongue, floor of the mouth, back of the roof of mouth around the tonsil area. The ulcer usually no longer than 5mm. **Based on their size and number, these ulcers can be classified into the following:**<sup>[4-7]</sup>

### 1. Minor mouth ulcer:-

Minor mouth ulcers are typically 2-8mm in diameter and heal within 1 to 2 weeks and don't cause scars. Typically these ulcers are superficial in nature small in size usually but 1cm in diameter.



**Figure: 1- Minor mouth ulcers**

### 2. Major mouth ulcers:

Major mouth ulcers are larger and deeper than minors. They often measure over 10mm in diameters. They have irregular edges and can take week or month to heal.



**Figure: 2- Major mouth ulcer**

### 3. Herpetologist mouth ulcers:

Herpetologist mouth ulcers are pinpoint sized, occur in clusters, and often appear on the tongue. Herpetologist mouth ulcers have irregular edges and often heal without scarring one month.



**Figure:3- Herpetologist**

### Causes of mouth ulcers: <sup>[7]</sup>

- Mouth ulcers may occur for a number of reasons, including.
- Minor tissue injury from dental work, such as having a cavity filled.
- Accidentally biting your cheek or tongue.
- An allergic reaction to certain bacteria.
- Wearing braces or retainers.
- Using harsh or abrasive toothpaste.
- Eating lots of acidic foods, such as oranges, pineapples and strawberries.

**Other reasons for mouth ulcers :-** <sup>[8]</sup>

There is no definite etiology and pathology known for mouth ulcer, although some factors are considered important which include nutritional deficiencies such as iron, vitamins especially B12 and C, poor oral hygiene, infections, stress, indigestion, mechanical injury, skin disease etc. Some other factor include such as:

- 1) **Genetic components:** About 30% to 40% of people with aphthous ulcers have a family history, indicating that there is a hereditary component to this condition. In certain cases, a family history of recurrent aphthous ulcers is evident. Young age of start and symptoms of greater intensity are two common connections. Identical twins and recurrent aphthous ulcers have a strong correlation.
- 2) **Physiological And Psychological Stress :** Relationship between aphthous ulcer incidence and stress in life As trigger or a moderating element, psychological stress may contribute to the occurrence of recurrent aphthous stomatitis. No studies have conclusively shown that stress causes or precipitates recurrent aphthous stomatitis.
- 3) **Nutritional deficiency:** Numerous nutritional deficiencies, including those affecting iron, folic acid, vitamin B12, B1, and B2 and B6, have been linked to a subset of aphthous ulcer patients. Based on diet and dietary supplementation, the impact of nutritional inadequacies to aphthous ulcers is anticipated to vary across different locations.
- 4) **Trauma :** The trauma is most likely factor which bring about aphthous ulcers are local trauma and stress. Traumatic ulcers may results from events such as accidentally biting on self while talking, sleeping, or during mastification. Fractured carious, malposed, or malformed teeth or premature eruption of teeth may lead to surface ulcerations.
- 5) **Food allergies:** There are various foods which can cause mouth ulcers or allergies. fruits which are acidic or particularly citrusy can cause our mouth to break out in ulcers. Fruit like pineapple lemon and lime these fruit cause mouth tissue stress and can aggravate our gum.

Nuts:- Salted nuts are especially the sodium dries our mouth out and causes the lining become inflamed food like chocolate coffee , peanuts, strawberries ,cheese ,tomatos, cereals, almond and flour, spicy food (hot sauces, spicy chips ) ,hard food could be even be implicated in some patients

**Causes of a complaint of burning mouth syndrome:-** <sup>[9]</sup>**Table-1. Causes of mouth ulcers**

Local	Deficiency state
Candidiasis	Vitamin
Lichen planus	Iron
Psychogenic	Diabetes mellitus
Cancerophobia	Dry mouth
Dipression	Drugs ( such as captopril)
Hypocondriasis	Para functional habits ( e.g. clenching teeth or biting objects such as pencils)

**Remedies for mouth ulcers:** <sup>[9]</sup>

Phytogenic agents are traditionally used by herbalists and indigenous healers for the prevention and treatment of ulcer. This article reviews the anti-ulcer properties of the most commonly employed herbal medicines and their identified active constituents. Botanical compounds with anti-ulcer activity include flavonoids (i.e. quercetin, naringin, silymarin, anthocyanosides, and soforadin derivatives) saponins (i.e. from Panaxjaponicus and Kochia scoparia), tannins (i.e. from

Linderaeumbellatae), gums and mucilages (i.e. gum guar and myrrh). Among herbal drugs, liquorice, aloe gel and capsicum (chilli) have been used extensively. Ethnomedical systems employ several plant extracts for the treatment of mouth ulcers.

#### Advantages of herbal medicines:<sup>[10-11]</sup>

- Improved immune function: Herbal medicine can help improve immune function, which is essential for maintaining overall health. That's because many herbs contain compounds that can balance our immune response, helping to prevent illness and improve the body's ability to recover from injury or disease.
- Better digestive health: Herbal medicine can also be beneficial for improving gut health.
- Reduced stress and anxiety: Many herbs are adaptogens, meaning they are considered to effectively reduce stress by working to reduce the body's cortisol levels.
- Natural pain management: Pain is primarily caused by inflammation, and herbs with anti-inflammatory and antioxidant properties can be a natural alternative to conventional pain relief medications. These compounds can help reduce inflammation and alleviate pain

#### Disadvantages of herbal medicines: <sup>[12-13]</sup>

- Contamination: Mass-produced medicinal herbs are susceptible to contamination, which can negatively impact human health. Herbal medicine can become contaminated by several sources, including pesticides, heavy metals, bacteria, and environmental pollution.
- Inconsistency: While some herbs are effective in treating certain conditions, many have yet to be studied extensively, and their effectiveness may be unknown
- Potential risks: Unfortunately, the potential for health risks is one of the disadvantages of herbal medicine. That's because some herbal medicines can cause allergic reactions or interact with certain prescription drugs
- Herbal medicines are often self-administered. As such, no dosages or warnings are given. When medicinal herbs are consumed together with drugs, the two can interact with each other others and lead to health impairments.

#### Various Herbs for oral ulcers:-<sup>[14]</sup>

**Table-2. Herbs used for mouth ulcer**

Sr. No.	Herb	Botanical name	Medicinal properties	Portion	Form
1	Guava	<i>Psidium guajava</i>	Antiulcer Antidiabetic, Antibacterial, Anticancer, Antihypertensive, Antioxidant, Antidiarrheal.	Leaves	Leaves / Powder / Gel / Guava leaves mouth wash / Herbal chewingum.
2	Sega leaves	<i>Saliva officinalis</i>	Antiinflammatory, Anticancer, Wound healing, Antidiabetic, Antimutagenesis, Antioxidant, Antimicrobial.	Leaves	Leaves / Powder
3	Turmeric	<i>Curcuma longa</i>	Anti-inflammatory Antioxidant, Antidepressant, Wound healing, Antibacterial,	Rhizomes	Powder / Gel / Liquids

4	Tulasi	<i>Ocimum Tenuiforum</i>	Antiinflammatory, Analgesic, Antiasthmatic, Hepatoprotective, Immunomodulatory, Antibacterial.	Leaves	Honey and tulasi ice chips.
5	Ginger	<i>Zingiber officinale</i>	Antinausea, Antihypertensive, Digestion aid, Migraines, Cold, Cough	Ginger extract alcoholic	Mucoadhesi-ve base
6	Liquorice	<i>Glycyrrhiza glabra L.</i>	Throat infection, Tuberculosis, Antiinflammatory Hepatoprotective, Antibacterial, Cardiovascular, Immunodeficiency	Stem, Roots.	Liquid extract, Powder, Capsules, Chewable tablets.
7	Triphala	<i>Emblica officinalis, Terminalia bellirica</i>	Anti-inflammatory Antioxidant Antibacterial Antifungal	Extract	Powder/ juice/ tablets /capsule
8	Aloevera	<i>Aloe barbadensis Mil</i>	Antibacterial Antifungal Antioxidant Antiseptic Anti-inflammatory	Leaves, Flowers, Stems, Roots	Juice/ Liquid tract/ powder/ Gel
9	Papaya	<i>Carica papaya</i>	Anthelmintic, Antiprotozoan, Antibacterial, Antifungal, Hypoglycaemic, Hypolipidaemic, Wound healing.	Bark, Leaves, Fruits	Powder/ Seed extract
10	Neem	<i>Azadirachta indica,</i>	Antihyperglycemic Antiulcer, Antibacterial, Antifungal, Anticarcinogenic, Antimutagenic.	Leaves	Oil
11	Chamomilla	<i>Matricaria chamomilla</i>	Antiviral, Analgesic, Antispasmodic, Smooth muscle relaxation action, Anti-inflammatory.	Fluid extract	Tincture from mouthwashointment, Strong tea made chamomile flowers
12	Myrrh , <i>Commiphora Myrrha</i>	<i>African bdellium</i>	Anti-inflammatory Antioxidant Antiseptic Immune boostin	Extract	Gel

13	Tamarind	<i>Tamarindus indica</i>	Anti-inflammatory Antioxidant Immunostimulant Wound healing Antibacterial Antiviral Antitumor	Fruit pulp Seed Flowers and leaves.	Pulp powder/ leaves
14	Lady mantle	<i>(Alchemilla vulgaris)</i>	Wound Healing diuretic, Anti-anaemic Anti-diabetic, Wounds, Ulcers	Extract + glycerine	Topical application TDS for 2–3 d
15	Echinacea	<i>(Echinacea purpurea)</i>	Anti-inflammatory Common cold Respiratory tract Infection viruses Ulcers such as syphilis Abscesses ulcers Swelling of the tonsils	Echinacea	Liquid/tablets
16	Nonifruit	<i>Morinda citrifolia L</i>	Colds, Flu, Diabetes, Anxiety, High blood pressure	Leaves extract	Emulsion
17	Coconut	<i>Cocos nucifera</i>	Antibacterial, Antifungal, Antiviral, Antiparasitic, Antidermatophytic, Antioxidant, Hypoglycemic, Hepatoprotective, Immunostimulant.	coconut kernel and tender coconut water	Coconut oil /Kernel powder
18	Pomegranate	<i>Punica granatum</i>	Antiinflammatory, cancer, Cardiovascular disease, Osteoarthritis, Rheumatoid arthritis,	Pomegranate seeds / peels / leaves	Seed oil, juice, pomace, peel
19	Garlic	<i>Allium sativum.</i>	Illness and disorders including high blood pressure, High cholesterol Coronary artery diseases	Leaves, flowers, Cloves	Garlic powder / Tablets
20	Hibiscus	<i>Rosa-sinensis</i>	Treating loss of appetite, Colds, Heart and nerve diseases, Upper respiratory tract pain and swelling , Fluid retention, Stomach irritation	Flowers, Leaves, Seeds	Hibiscus powders / Capsules / Liquid extracts.

**Description of medicinal plants used in treatment of mouth ulcers :1)****Guava Leaves:-**<sup>[15-16]</sup>**Figure-4 :- *Psidium guajava*****Botanical name:-** *Psidium guajava***Biological source:-** It is obtained from the plant of *Psidium guajava***Family:-** *Myrtaceae*.**Macroscopic characters:-**

- **Color:-** Surface of the deep green.
- **Odor:-** Aromatic
- **Taste:-** Slightly bitter
- **Size:-** Leaves about 7.6 cm (3 inches) in length. ▪ **Shape:-** Dark green, Elliptical, Oval

**Chemical constituents:-**

Vitamin A, C, Iron, Phosphorus, Calcium, flavonoids, F Guajavarin, Quercetin, Oleanolic acid, Saponin,  $\alpha$ -pinene, Limonene,  $\beta$ -pinene.

**Uses:-**

The immunity is strengthened by guava, It lower the chance of getting cancer, Aids in controlling blood sugar, Healthy heart health is aided by guavas, Is beneficial when constipated, Increases visual acuity, One effective stress reliever is guava, During pregnancy, guava benefits women,

**2) Sega Leaves:-**<sup>[17-18]</sup>**Figure- 5: *Salvia officinalis*****Botanical names:-** *Salvia officinalis*

**Biological source:** *Salvia officinalis* is obtained from perennial, evergreen subshrub, woody stems, greyish leaves, and blue to purplish flowers. **Family:** Lamiaceae

**Macroscopic characters:-**

- **Color:-** gray-green to whitish green
- **Odor:-** slightly sweet scent
- **Taste:-** strong, slightly minty, musky

- **Size:-** The leaves are oblong, ranging in size up to 65 mm (2+1/2 in) long by 25 mm (1 in) wide. Leaves are grey-green, ▪ **Shape:-** pointed, oblong shape

#### Chemical constituents:-

Predominating (18–43%),  $\beta$ -thujone (3–8.5%), Camphor (4.5–24.5%), 1,8-cineole (5.5–13%),  $\alpha$ -humulene (0–12%),  $\alpha$ -pinene (1–6.5%), camphene (1.5–7%), bornyl acetate (2.5% maximum)

#### Uses:-

- Improves memory.
- Reduces bursts of heat and nocturnal sweats associated with menopause.
- Minimizes inflammation.
- Enhances regulation of blood sugar.
- Brings down cholesterol levels
- Guards against cancer.
- Helps the skin recover.
- Treat tonsillitis and sore throats.
- Alzheimer's.



### 3)Turmeric:- <sup>[22]</sup>

Figure-6: *Curcuma longa*

**Botanical name:-** *Curcuma longa*

**Biological source:-** It is obtained from the dried rhizome and roots of *Curcuma longa* Linn

**Family :-** *Zingiberaceae*

#### Macroscopic characters:-

- **Color:-** bright yellow colour
- **Odor:-** earthy, mustard-like aroma.
- **Taste:-** Earthy, slightly bitter, and a little peppery.
- **Size:-** Length - 41.2 mm and diameter - 9.3 mm
- **Shape:-** Cylindrical **Chemical**

#### constituents:-

Phenolic compounds, Terpenoids, Curcuminoids, Diarylpentanoids, Monoterpenes, Sesquiterpenes, Diterpenes, Triterpenoids, Alkaloid, Sterols

#### Uses:-

- Irritation
- Degenerative diseases of the eyes
- Metabolic disorder
- Inflammation
- Hyperlipidemia
- Low blood cholesterol,
- Anxiety
- Arthriti.



## 4) Tulsi :-[19,20,21]

Figure-7: *Ocimum tenuiflorum*

**Botanical name:-** *Ocimum tenuiflorum*

**Biological Sources:-** It is obtained from fresh and dried leaves of *Ocimum* species like *Ocimum sanctum* L. and *Ocimum basilicum* L. etc.

**Family:-** *Lamiaceae*

**Macroscopic characters:-**

- **Color:-** Leaves are green or purple;
- **Odor:-** Clove-like aroma
- **Taste:-** Astringent, sometimes bitter flavour.
- **Size:-** The height of plant is 1-2 feet tall. The leaves are 1-2 inches long
- **Shape:-** Tulsi leaves are oval-shaped with a slightly sharp tip, and the edges are slightly toothed

**Chemical constituents:-**

Cirsilineol, Circimaritin, Isothymusin, Aapigenin, Rosameric acid, Eugenol, Euginal, Urosolic acid, Carvacrol, Linalool, Limatrol, Caryophyllene

**Uses:-**

Treats oral infections and ulcers.

Increases Immunity.

Treat illnesses including the flu, the common cold, fever Purifies the Blood; Heals Infections;...

Treats Bites from Insects.

Reduces blood pressure levels.

Treat disorders related to breathing.

5) Ginger:- [23-24]

Figure-8 : *Zingiber officinale*

**Botanical name :-** *Zingiber officinale*

**Biological source:-** Ginger is obtained from the rhizomes of *Zingiber officinale*, Roscose and dried in the sun **Family :-** *Zingiberaceae*

**Macroscopic characters:-**

- **Color:-** Yellowish green
- **Odor:-** Aromatic
- **Taste:-** Spicy, pungent, bitte ▪ **Size:-** Ginger grow upto 1m height.
- **Shape:-** Dried ginger rhizomes are irregular in shape, branched or palmate

**Chemical constituents:-**

Phellandrene, Camphene, Cineol linalool, Limonene, Citral, Geraniol, Citronellol, Borneol, Sesquiterpenes, A-zingiberene, Curcumene, B-bisabolene.

**Uses:-**

- Improved Digestion.
- Ginger helps your stomach empty more rapidly and expedite the digestive process.
- Enhances immunity.
- Eases upset stomach and nausea. Might
- Be Beneficial For Cancer.
- Minimizes Pain.
- Improved Skin Health.
- Loss of Weight Help.

**6)Liquorice:-** <sup>[25-26]</sup>



**Figure- 9: Glycyrrhiza glabra**

**Botanical name:-** *Glycyrrhiza glabra*

**Biological source:-** liquorice is consist of dried unpeeled roots and stalonsof glycyrrhiza glabara lin.

**Family:-** *Fabaceae*

**Macroscopic characters:-**

- **Colour:-** Unpeeled liquorice externally yellowish, brown or dark brown and internally yellowish colour
- **Odour:-** Faint and characteristic
- **Taste:-** Sweet
- **Size:-** Length 10-50 and diameter 2cm
- **Shape:-** Straight and nearly cylindrical

**Chemical constituents:-**

Glycyrrhizin / glycyrrhizic acid (major glycoside), Glycyrrhithic acid (aglycone), Glucuronic acid, Liquiritoside, Lliquiritoside, Liquiritin; iso liquiritin, Glycosides, Glucose, Mannitol, Resin, Volatile oil.

**Uses:-**

- Stomach issues,-
- Menopausal symptoms,
- Coughing,
- Viral diseases. -
- Lozenges.
- Gargles

7)Triphala :-<sup>[27]</sup>

Figure-10: *Terminalia bellirica*, *Erminalia bellerica*, *Emblica officinalis*

**Botanical name** :- *Terminalia bellirica*, *Erminalia bellerica*, *Emblica officinalis*

**Biological source**:- Triphala is composed of the three myrobalans, Terminalia chebula. (Haritaki), Terminalia bellerica (Bibhitaki) and Emblica officinalis

**Family** – *Combretaceae*

**Chemical constituents**

Quercetin, Phyllaemblic compounds, Gallic acid, Tannins, Flavonoids, Pectin, Vitamin C, Triphalachebulic acid, Anthraquinone.

**Uses** :-

Laxative.  
Asthma,  
Sore throats,  
Thirst,  
Vomiting,  
Eye disorders,  
Bladder problems,  
Stroke,  
Urine discharges,  
Inflammation,  
Bleeding piles,  
Typhoid,  
Constipation,  
Anemia,  
Elephantiasis

8)Aloe vera:-<sup>[28-29]</sup>



Figure-11: *Aloe barbadensis* Miller

**Botanical name:-** *Aloe barbadensis* Miller

**Biological Source:-** The biological source of aloe is dried latex of leaves of it. It is also known as curacao aloe, cape aloe and socotrine aloe. **Family:-** *Liliaceae*

**Macroscopic characters:-**

- **Colour:-** yellowish brown to chocolate brown
- **Odour:-** strong odour resembles with iodoform
- **Taste:-** Bitter and Unpleasant
- **Size:-** Fleshy, triangular leaves upto 0.9 m long
- **Shape:-** Arranged in a rosette

**Chemical constituents:-**

Aloins, Aloesin, Barbaloin, Emodin,  $\beta$ -barboloin, Isobarbaloin, Chromone, Saponin, Anthraquinone, Phenol.

**Uses:-**

It also covers some of the risks associated with use.

It contains healthful plant compounds.

It has antioxidant and antibacterial properties.

It accelerates wound healing.

It reduces dental plaque.

It helps treat canker sores.

It reduces constipation.

It may improve skin and prevent wrinkles.

It lowers blood sugar levels.



9) Papaya :-<sup>[30-31]</sup>

**Figure-12: *Carica papaya* Linn**

**Botanical Name:-** *Carica papaya* Linn.

**Biological Source:-** Papain is the dried and purified latex of the green fruits and leaves of *Carica papaya* Linn.

**Family-** *Caricaceae*.

**Macroscopic characters:-**

- **Colour :-** Yellow
- **Odour :-** Uncut papaya has no smells and slightly sweet smell
- **Taste:-** Sweet
- **Size :-** The fruit is a large berry about 15–45 cm (6–17<sup>3</sup>/<sub>4</sub> in) long and 10–30 cm (4–11<sup>3</sup>/<sub>4</sub> in) in diameter.
- **Shape:-** Round, pear, oval shape

**Chemical Constituents:-**

Capain, Chymopapain, Cystatin, Alkaloids, Glycosides, Tannins, Saponins, Flavonoids

**Uses:10) Neem:-**<sup>[32-33]</sup>

Eating papayas may help reduce blood pressure.  
 Have faster wound healing  
 Support digestion,  
 Help diabetics better control their blood sugar levels, Decrease  
 the chance of cancer, diabetes, and heart disease.  
 Packed with anti-aging advantages.  
 Lowers Cholesterol Amounts.  
 Reduces the Chance of Cancer.  
 Protect eyes from damaging blue light.

**Figure-13 : *Azadirachta indica*****Biological Name:-** *Azadirachta indica***Biological Source:-** It grows in tropical and semi- tropical regions of the world, and the different parts of this tree such as seeds, leaves, flowers, and the bark are widely used for different purposes.**Family:-** *Meliaceae***Macroscopic characters:-**

- **Color:-**Neem leaves are medium to large in size and elongated to oblong in shape, averaging 20-40 centimeters in length. The vibrant green leaves are smooth and glossy with sharp, serrated edges
- **Odor:-** Garlic smell
- **Taste:-** Bitter taste
- **Size :-**Neem leaves are medium to large in size and averaging 20-40 centimeters in length.
- **Shape:-** The vibrant green leaves are smooth and glossy with sharp, serrated edges and elongated to oblong in shape,

**Chemical Constituents:-**

Nimbolinin, Nimbin, Nimbidin, Nimbidol, Sodium nimbinate, Gedunin

**Uses:-**

Manages acne.  
 Nourishes the skin.  
 Cures fungus-related infections  
 Beneficial for detoxification  
 Defends against intestinal disorders  
 Boosts the immune system  
 Defends against intestinal disorders  
 Mosquito & Insect repellent  
 Beneficial for detoxification

## 11) Chamomilla :- [34-35]

Figure-14: *Matricaria chamomila*

## □ There are two types of chamomile

- 1) **German chamomile:** Chamomile, Hungarian chamomile, Matricaria, Blue chamomile, Sweet false chamomile.
- 2) **Roman chamomile:** English chamomile, Sweet chamomile.

**Botanical name:-** *Matricaria chamomila*

**Biological Source:-** Chamomile consists of dried flower of chamomilia recutitia (German chamomile), chamaemelum nobile (Roman chamomile)

**Family-** *Asteraceae*.

**Macroscopic character:-**

- **Color:-** Stem-Downy and grayish green in color. Flower-Golden yellow, white flower. Leaves -Golden yellow, white flower.
- **Odor:-** sharp, crisp, apple/earthy fragrance with a sweet overtone
- **Taste:-** Distinct apple taste that makes it naturally sweet
- **Size:-** They are about 0.75 to 1.25 inches
- **Shape:-** Cone-shaped,

**Chemical Constituents:-**

Volatile oil, Chamazulene, Polyphenol, Quercetin, Apigenin, Bisabolol, Bodegold, Luteolin, Apple Flavonoids **Uses:-**

Menstrual symptoms,  
 Blood sugar issues,  
 Osteoporosis,  
 Diabetes, etc.  
 An inflammation.  
 The cancer.  
 Unwinding and resting.  
 Symptoms of a cold.  
 Mild skin disorders.  
 Gastrointestinal disorders  
 Muscle spasms  
 Insomnia  
 Wounds

## 12) Myrrh:- [36-37]

Figure-15: *Commiphora molmol*

**Botanical name:-***Commiphora molmol*

**Biological source :-** Myrrh is a resinous exudate obtained from the tree *Commiphora myrrha* and various other *Commiphora* species.

**Family :-** *Burseraceae*

**Macroscopic character:-**

- **Color:-**Externally reddish brown.
- **Odor:-**Aromatic and Agreeable.
- **Taste:-**Aromatic, Bitter & acrid.
- **Size :-**2.5 to 10 cm in diameter.
- **Shape:-** irregular rounded tears.

**Chemical Constituents:-**

Resin, Gum, Terpene, Cuminic aldehyde,  $\gamma$ -commiphoric acids, Limonene myrrh, Galactose, Arabinose, Glucuronic acid.

**Uses:-**

It has stimulant,  
Antiseptic property,  
Uterine stimulant,  
Due to its astringent property to mucous membrane it is also used for mouth wash Gargles.

## 13) Tamarind:- [38-39]

Figure-16 : *Tamarindus indica* Linn

**Botanical name:-** *Tamarindus indica* Linn.

**Biological source:-** Tamarind consists of dried ripe fruits (freed from the brittle epicarp) of *Tamarindus indica* Linn.,

**Family:-** *Leguminosae*.

**Macroscopical characters :-**

- **Color:-** Reddish-brown
- **Odor:-** Pleasant and agreeable
- **Taste:-** Sweet and acidic
- **Size:-** 5-20 cm long and 2 cm in width
- **Shape:-** As firm black cakes which contain fibres, seeds and little epicarp

**Chemical constituents:-**

Tartaric acid, Acetic acid, Succinic acid, Gum, Pectin, Sugar, Tannins, Alkaloid, Flavonoids, Sesquiterpenes, Glycosides, Malic, Quinic acid.

**Uses:-**

Aids with weight loss  
 Guards against peptic ulcers  
 Handles diabetes well Aids in  
 the process of digestion.  
 Promotes the health of the heart.  
 Maintains the health of your liver

**14) Lady's mantles:-<sup>[40]</sup>**

**Figure-17 : *Alchemilla vulgaris L***

**Botanical name:-** *Alchemilla vulgaris L*

**Biological source:-** It is dried plant or leaves obtained from *Alchemilla vulgaris L*. **Family:-** *Rosaceae*

**Macroscopical characters :-**

- **Color :-** Light green yellowish colour
- **Odor:-** Slightly waxy and melone like
- **Taste:-** Sweet and pungent
- **Size:-** Thin round green stems (up to 60 cm)
- **Shape:-** crinkled and scalloped at the edges

**Chemical constituents:-**

Tannins, Phenol, Carboxylic acids, Gallic acid, Caffeic acid, Quercetin, Kaempferol, Glycosides

**Uses:-**

It is used in traditional medicine to treat gastrointestinal issues,  
 Menorrhagia and Dysmenorrhea,  
 Furuncles,  
 Oral inflammations,  
 Nose bleeds  
 Wound healing,  
 Antibacterial,  
 Neuroprotective,



Gastroprotective, ,

Its primary indications being non-specific diarrhea and gastrointestinal problems.

15) **Echinacea:**- [41,42,43]



**Figure-18:** *Echinacea purpurea*

**Botanical name:-** *Echinacea purpurea*

**Biological source:-** *Echinacea purpurea* L. is a perennial herbaceous flowering plant, commonly known as purple coneflower. **Family:-** *Asteraceae*

**Macroscopical characters :-**

- **Color:** white, yellow, and pale peach to vibrant orange, pink, and red
- **Odor:-** honey scent
- **Taste:-** Flavor as being earthy or floral
- **Size:-** Height: 150cm      Spread: 60cm
- **Shape:-** Lance to oval shaped

**Chemical constituents:-**

Carbohydrates, Fatty acids, Tartaric acids, Flavonoids, Fitosterols, Polysaccharides, Glycoproteins, Flavonoids, Phenolic compounds, Caffeic acid, Chicoric acid, Caftaric acid, Chlorogenic acid

**Uses:-** To treat-  
 Infections,  
 Flu,  
 Common cold,  
 Upper respiratory illnesses,  
 Herpes,  
 HIV/AIDS,  
 Tonsillitis,  
 Streptococcus infections,  
 Syphilis,  
 Typhoid,  
 Malaria,  
 Ear infections,  
 Swine flu,  
 Chronic fatigue syndrome (CFS).

16) **Nonifruit:-**[44]



**Figure-19:** *Morinda citrifolia*

**Botanical name:-** *Morinda citrifolia*

**Biological source:-** *Morinda citrifolia* is a fruit-bearing tree in the coffee.

**Family:-** *Rubiaceae*

**Macroscopical characters :-**

- **Color:-** whitish in color with tinges of green
- **Odor:-** Pungent smell, similar to the odor of blue vein
- **Taste:-** pungent and astringent flavor
- **Size:-** Noni fruits are generally small to medium in size, averaging 5 to 10 centimeters in length and 3 to 4 centimeters in diameter
- **Shape:-** Oval-shaped

**Chemical constituents:-**

Glucosides, Americanin A, Narcissoside, Asperuloside, Asperulosidic acid, Citrifolinin B, Epimer b, Cytidine, Deacetylasperuloside, Epi-dihydrocornin, D-glucose, D-mannitol,

**Uses:-**

Enhance skin health,  
Blood sugar regulation,  
Anxiety,  
Inflammation,  
Immunity.

**17) Coconut:-**<sup>[45-46]</sup>

**Figure-20: *Cocos nucifera***

**Botanical name:-** *Cocos nucifera*

**Biological source:-** Biological source: Coconut oil is obtained from the dried solid part of endosperm of *Cocos nucifera*

**Family:-** *Palmaceae*

**Macroscopical characters :-**

- **Colour:-** Mostly green until they fully mature
- **Odour:-** Sweet and fruity, whilst also being milky,
- **Taste:-** Slightly sweet and nutty
- **Size:-** 30–45 cm (12–18 inches) in length and 15–20 cm (6–8 inches) in diameter ▪ **Shape:-** Ovoid or ellipsoid

**Chemical constituents:-**

Glucose, Amino acids, Electrolytes, Potassium, Calcium, Potassium, Triglyceride, Saturated fatty acids, Unsaturated fatty acids

**Uses:-**

Coconuts are really beneficial for attractiveness.

Coconuts make hair seem beautiful.

Digestion is aided by coconuts.

Coconuts give you more energy.

Coconuts lessen your periods of appetite.

Your immunity is boosted by coconuts.

Abdominal fat is treated with coconuts.

Coconuts improve dental health.



18) Pomegranates:-<sup>[47-48]</sup>

Figure-21: *Punica granatum*

**Botanical name:-** *Punica granatum*

**Biological source:-** Is obtained from plant of *Punica granatum*

**Family:-** *Lythraceae*

**Macroscopical characters :-**

- **Colour :** Pomegranates vary in color from light to dark red
- **Odour:-** Mixture of various green, woody, earthy, fruity, floral, sweet
- **Taste:-** Fairly tart with a bit of sweetness underneath
- **Size:-** The fruit is a berry and is between 5 and 12 cm in diameter
- **Shape:-** Rounded hexagonal shape

**Chemical constituents:-**

Punicic acid, Ellagitannins, Flavonoids, Anthocyanins, Punicic acid, Ellagitannins, Alkaloids, Fructose, Sucrose, Glucose, Simple organic acids

**Uses:-**

Mouth ulcers,  
Snakebite,  
Hepatic damage.  
Dysentery,  
Diarrhea,  
Helminthiasis,  
Acidosis,  
Hemorrhage  
Respiratory problems.  
Infant brain ischaemia,  
Alzheimer's diseases,  
Breast cancer,  
Prostate cancer,  
Male infertility,  
Arthritis  
Obesity.

19) Garlic:-<sup>[49]</sup>



Figure-22: *Allium sativum*

**Botanical name:-** *Allium sativum*

**Biological source:-** It is obtained bulbs of the plant *Allium sativum* Linn.

**Family:-** *Liliaceae*.

**Macroscopical characters :-**

- **Colour:-**
- **Odour:-** Pungent bouquet
- **Taste:-** Soft, sweet buttery flavor
- **Size:-** 22 mm To 55 mm Size
- **Shape:-** Globe-shaped **Chemical constituents:-**

Glutamine, Proline, Glycine, Alanine, Cysteine, Valine, Methionine, Isoleucine, leucine, Tryptophan, Phenylalanine. Garlic contain of high concentration of sulphur

**Uses:-**

Prevents Cold and Cough.  
Beneficial to cardiac health.  
Enhances brain activity.  
Enhances Perigestion.  
Stabilizes blood sugar.  
Enhances Immunity.  
Enhances Skin Well-being.  
Prevents stomach ulcers and cancer.

**20) Hibiscus:-**<sup>[50-51]</sup>



**Figure-23:** *Hibiscus rosa sinensis*

**Botanical name:-** *Hibiscus rosa sinensis*

**Biological source:-** It is obtained from plant of *Hibiscus Rosa sinensis* or China rose

**Family:-** *Malvaceae*.

**Macroscopical characters :-**

- **Colour:-** Flower containing orange, yellow, red, pink, and multicolor
- **Odour:-** smell like pure air, and some other varieties of hibiscus have mild smells like sweet, tropical, floral, and tart fragrance.
- **Taste:-** cranberry-like and sweet, with earthy notes in overall taste.
- **Size:-** 8-to-16 feet tall and 5-to-10 feet wide,
- **Shape:-** The flowers are large, conspicuous, trumpet-shaped

**Chemical constituents:-**

Tannins, Anthraquinones, Quinines, Phenols, Flavanoides, Alkaloids, Quercetin, Isoquercitrin,

**Uses:-**

Treating wounds,  
Inflammation,  
Fever,  
Coughs,

Diabetes,  
 Infections caused by bacteria and fungi,  
 Hair loss,  
 Gastric ulcers,  
 Loss of appetite,  
 Colds, Heart,  
 Nerve diseases,  
 Upper respiratory tract pain swelling

, Stomach irritation. **Evaluation study** :-<sup>[52]</sup>

1) **Physical evaluation:** A visual inspection was conducted to verify physical characteristics such color, odor, and consistency.

**Colour:** The formulation's colour was examined by visual examination

**Consistency:** The formulation's consistency was verified by putting on skin.

**Odour:** The formulation's odor was assessed by combining the gel with water and smelling it.

2) **Measurement of pH:**

The glass electrode was fully submerged in the gel system three times to determine the pH of the formulation. The average values are provided.

3) **Homogeneity:** Visual examination was used to verify each manufactured gel composition for homogeneity. once the gels have been placed within the holder. We examined them to see if any aggregates were visible or present.

4) **Viscosity:**

The produced gel's viscosity was measured at 25°C using the Brookfield Viscometer. The gels were spun at 0.3, 0.6, and 1.5 revolutions per minute, and the dial reading for each speed was noted. Next, the viscosity of the generated gels was calculated by multiplying the dial reading by a number found in the Brookfield Viscometer catalogs.

5) **Spreadability:** When a particular stress is applied, the amount of time it takes for two slides to separate from gel placed in their interstices is known as the spreadability. If two slides can be separated in less time, then spreadability is enhanced.

Spreadability is calculated using the following formula:

$$M \times L / T = S$$

**M** = is the weight attached to the top slide.

**L** = is the glass slide's length.

**T** = amount of time needed to divide the slides

6) **Clarity:** A visual inspection is used to assess the gel's clarity.

7) **Stability study:** Stability studies were carried out to see how formulation was impacted by storage or environmental factors. In accordance with ICH recommendations, the formulation was maintained in an accelerated stability condition for three months at 25°C temperature 60 ± 5% relative humidity, 30°C temperature 65 ± 5% relative humidity, and 40°C temperature 75 ± 5% relative humidity.

**Conclusion:-** This review has demonstrated the critical role that medicinal plants play in the treatment of mouth ulcers. Due to their higher compatibility with form and less adverse effects, flavanoids are likely responsible for the anti-ulcer properties in herbal plants. Due to the presence of chemical components that are naturally present in herbs, they are the most effective treatment for mouth ulcers. They are readily available and have wonderful therapeutic properties. Ayurveda is the oldest medical system in the world, which leads to the discovery of medicinally beneficial plant components. Therefore, it is crucial to extract, describe, and standardize the active ingredients from herbal sources for antiulcer action using ayurvedic expertise backed by modern research. Better mouth ulcer medications with fewer side effects can be created by fusing traditional and modern expertise.

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