



CODEN [USA]: IAJPBB

ISSN : 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<https://doi.org/10.5281/zenodo.21964187>Available online at: <http://www.iajps.com>

Review Article

HERBAL COSMETICS - TOOTHPASTE

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Abstract:

Oral hygiene is an essential component of general health, and toothpaste plays a significant role in the prevention of dental diseases such as dental caries, gingivitis, plaque formation, and halitosis. In recent years, herbal toothpaste has gained considerable attention due to increasing consumer preference for natural, safe, and effective oral care products with fewer adverse effects than conventional chemical-based formulations. Herbal ingredients possess antimicrobial, anti-inflammatory, antioxidant, and astringent properties that contribute to maintaining oral health. This review focuses on the formulation and evaluation of herbal toothpaste prepared using natural ingredients such as Neem (Azadirachta indica), Babul (Acacia nilotica), Guava (Psidium guajava), and Kalmi (Cinnamomum verum), along with suitable excipients. The review summarizes the therapeutic importance of these medicinal plants, formulation methods, composition, and various evaluation parameters including physical appearance, pH, spreadability, foamability, abrasiveness, moisture content, homogeneity, stability, and antimicrobial activity. Previous studies have demonstrated that herbal toothpaste formulations exhibit satisfactory physicochemical characteristics, effective antimicrobial activity against common oral pathogens, and good storage stability. Overall, herbal toothpaste formulated with these natural ingredients represents a promising, safe, economical, and effective alternative to conventional toothpaste for maintaining oral hygiene and promoting oral health.

Keywords: Cosmetics, Herbal toothpaste, Oral hygiene, antimicrobial activity.

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Please cite this article in press Varsha Johnson et al., Herbal Cosmetics - Toothpaste. Indo Am. J. P. Sci, 2026; 13(08).

INTRODUCTION:

Cosmetics

Cosmetic is a very diverse product such as cream, perfumes, lotions, skin cleansing products, and decorative cosmetics sector.^[1] According to the Drug and Cosmetic Act, a “Cosmetic” is any article intended to be used by means of rubbing, sprinkling or sprayed on, introduced into, or otherwise applied to any part of the human body for cleansing, beautifying, promoting attractiveness, altering the appearance and for maintaining health of the skin and hair, provided that the action of the article on the human body is mild.^[2] The word “Cosmetic” derived from the Greek word “kosmtikos,” which means “to be able to arrange and decorate”.^[3] They concentrate on maintaining the appearance of the external body surfaces, such as the skin, hair, and teeth, as well as deodorizing or perfuming them to eliminate odors. Changing the appearance of these surfaces, safeguarding them, and maintaining their integrity or as in the other sense of ‘cosmos’, keeping things in good odor, is reflected in the definition of cosmetic.^[4]

In modern days cosmetics are considered to be essential commodities of life. Cosmetics not only adorn but they exercise psychological effect on users and especially on the skin. They keep the skin supple and help delay the onset of wrinkling. They are also helpful in skin infections and prevention of sunburns.^[5]

The cosmetics in general are external preparations and are meant to be applied to external parts of the body. In other words, they may be applied to skin, hair and nails for the purposes of covering, colouring, softening, cleansing, nourishing, waving, setting, modification, preservation, removal and protection.^[6]

Among these categories, oral hygiene cosmetics play an important role in maintaining the cleanliness and health of the teeth and oral cavity. Toothpaste is one of the most widely used oral hygiene cosmetic products and forms an essential part of daily dental care.^[7]

HISTORY OF COSMETICS

The history of cosmetics is present for at least 7000 years and it exists in almost every society around the world. The earliest form of human cosmetic rituals should be body art that includes cosmetics. Cosmetics were not welcome in Rome, but they were used it some aristocratic Romans of the time. It was found that some Romans invented cosmetics in ancient times for example, Kohl used to cover their eye lining. In 1888, a deodorant intended for cosmetic purposes was discovered anonymous American and was marketed trade name- “Mum”.

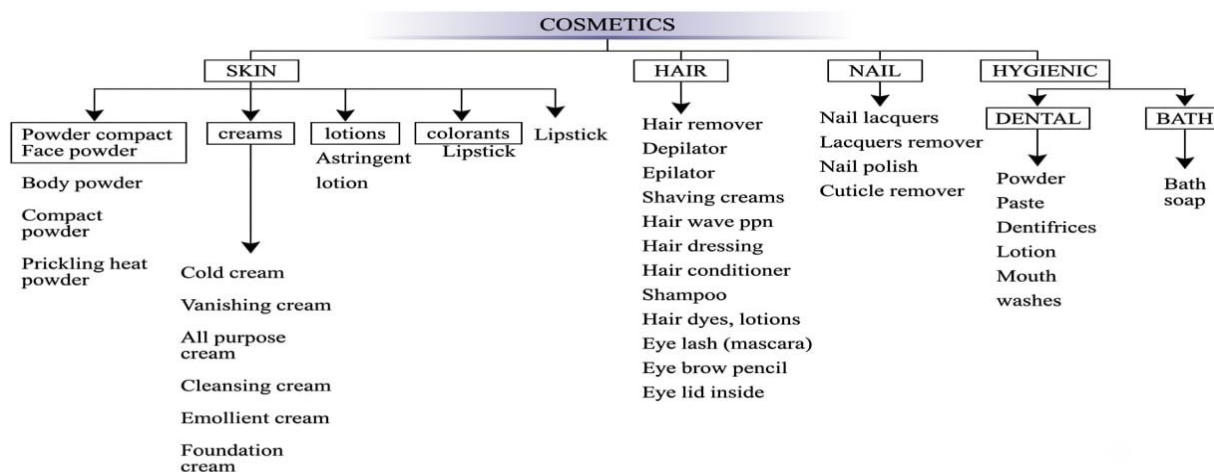
Below Even after 1900 AD, people did not accept cosmetics. Roll-on deodorant and aerosol deodorant were introduced to the market in 1952 and 1965. Russian ballet and colorful makeup were performed around the same time in 1910. It should be noted that the year was started by the current cosmetic manufacturer’s production around the beginning of the 20th century.^[8]

CLASSIFICATION OF COSMETICS^[9]

Cosmetics are classified according to their site of application,

- Cosmetic for Skin
- Cosmetic for Hair
- Cosmetic for Nail
- Cosmetic for Hygienic

Figure1: Classification of Cosmetics



Among these categories, oral hygiene cosmetics are widely used for maintaining oral cleanliness and preventing dental diseases. Toothpaste is the most commonly used oral hygiene product because it helps remove dental plaque, freshen breath, and maintain the health of teeth and gums. Due to its daily use and significant role in oral care, toothpaste has become one of the most important cosmetic products for maintaining oral hygiene.^[10]

COMMON DENTAL DISEASE

The oral cavity contains both beneficial and harmful bacteria. Poor oral hygiene and plaque accumulation can lead to several dental diseases. Toothpaste plays an important role in preventing these conditions by maintaining oral hygiene.

- a) **Periodontal (Gum) Disease**
Caused by plaque buildup and poor oral hygiene.
- b) **Tooth Decay and Cavities**
Caused by bacteria acting on sugary and acidic food residues.
- c) **Mouth Ulcers**
Painful sores inside the mouth that interfere with eating and speaking
- d) **Tooth Abscess**
A pus-filled bacterial infection caused by untreated tooth decay or injury.^[11]

TOOTH PASTE

Toothpaste is a paste or gel dentifrice used with a toothbrush to clean and maintain the aesthetics and health of teeth. Toothpaste is used to promote oral hygiene; it is an abrasive that aids in removing dental plaque and food from the teeth, assists in suppressing halitosis, and delivers active ingredients to help prevent tooth decay and gum disease (gingivitis).^[12]

Types of toothpaste:

a) Herbal toothpaste:

Herbal toothpaste is a toothpaste where no chemical preservatives are added; Instead, glycerin and common salt are added as natural preservatives. This toothpaste can cure various diseases of teeth like gingivitis, tooth decay, cavity, gum bleeding, bad breath and dental-caries as well as it has anti-smoking and anti-cancer properties.

b) Medicated toothpaste:

Medicated toothpaste is a type of toothpaste that applies a medicine to the teeth, gums and mouth. Some medicated toothpastes require specific application techniques or a set duration of contact with the teeth, gums and mouth in order to provide a medical benefit.^[13]

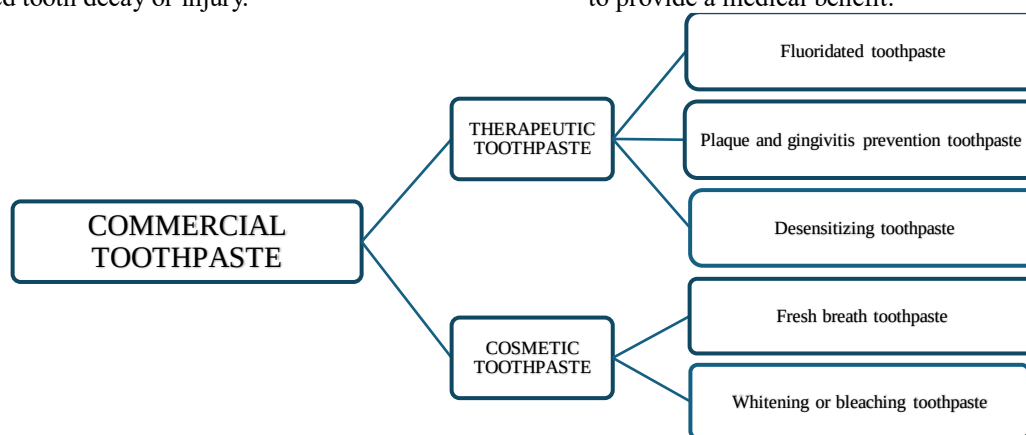


Figure 2: Commercial Toothpaste

Ideal properties of Toothpaste

- Non-toxic and non-irritant
- Good abrasive effect
- Inexpensive
- Readily available
- Keep the mouth fresh and clean long duration
- Does not cause staining on teeth.^[14]

Advantages of toothpaste

- Helps remove dental plaque and food debris from the teeth.

- Prevents dental caries (tooth decay), particularly when fluoride toothpaste is used.
- Strengthens and remineralizes tooth enamel.
- Reduces the growth of harmful oral bacteria.
- Helps prevent gingivitis and maintains healthy gums.
- Freshens breath by reducing odour-causing microorganisms.^[15]

Disadvantages of toothpaste

- Foaming agents often cause mouth ulcers.
- Certain chemicals irritate delicate gum tissues.

- Swallowing fluoridated paste causes dental fluorosis.
- Antimicrobials can trigger bacterial antibiotic resistance.^[16]

Herbal cosmetics

The term “herbal formulation” refers to a dosage form that contains one or more herbs or processed herbs in specific amounts to provide specific nutritional, cosmetic, and other benefits intended for use in the diagnosis, treatment, or mitigation of diseases in humans or animals, as well as to change the anatomy or physiology of humans or animals.

Historically, various plant materials, such as chewing sticks derived from specific trees or shrubs, were utilized for oral hygiene in societies where modern dental tools were not available. These practices often

relied on the natural fibrous texture of the plant or the presence of specific secondary metabolites.^[17]

In nowadays, herbal products are subject to ongoing scientific research to evaluate their bioactive components and potential physiological effects. While many people utilize herbal supplements, it is important to note that “natural” does not automatically mean a substance is free of side effects or drug interactions. Organizations like the World Health Organization (WHO) monitor the use of traditional medicine globally, emphasizing the need for quality control, standardized processing, and clinical evidence to ensure safety and efficacy. Individuals considering herbal formulations for health purposes should consult with qualified healthcare professionals to ensure these products are appropriate for their specific health needs and do not interfere with conventional treatment.^[18]

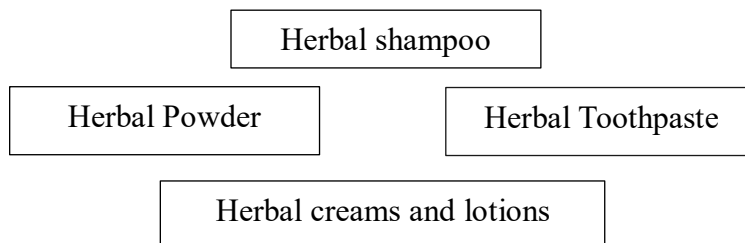


Figure 3: Classification of herbal cosmetics

HERBAL TOOTHPASTE

Herbal toothpaste is a toothpaste where no chemical preservatives are added; instead, glycerin and common salt are added as natural preservatives. This toothpaste can cure various diseases of teeth like gingivitis, tooth decay, cavity, gum bleeding, bad breath and dental-caries as well as it may help maintain oral hygiene and reduce plaque, bad breath, and dental caries due to the presence of bioactive phytochemicals.^[19]

Formulation containing natural ingredients is more acceptable in the belief that they are safer than synthetic drugs because it contains fewer synthetic chemicals and is associated with a lower risk of adverse effects.

Herbal toothpaste containing natural ingredients like:

- Guava leaves
- Turmeric
- Clove
- Camphor
- Neem
- Tulsi
- Babul

Which possess antimicrobial, anti-inflammatory, antioxidant, and analgesic properties. Which were traditionally used for tooth cleaning.^[20]

Benefits of Herbal Toothpaste:

Bacteria in your mouth can cause gum disease and other dental issues. Using natural toothpastes, you can get rid of your oral bacteria without using harmful chemicals. To clean your breath, natural toothpastes use natural ingredients like mint and herbs.

- Cleans your teeth safely.
- Effectively refreshes your breath.
- Prevents and calms gum pain.
- Stain Remover
- Safe for children^[21]

Action of herbal toothpaste:

Herbal dentifrices can be used in the control of plaque and gingivitis. Dental plaque deposit on teeth is a concern for both cosmetic and its pathogenic nature. Presence of plaque may contribute to dental caries, gingivitis, periodontal problems, and halitosis. Many mechanical aids are used worldwide to remove or control plaque, including toothbrushes, dental floss, mouth rinses, and dentifrices. Mechanical plaque removal is one of the most accepted methods of controlling plaque and gingivitis.

However, several chemical preventive agents have also shown beneficial effects in the control of plaque. Hence, various chemical formulations were tried in dentifrices. Chemicals, such as triclosan and

chlorhexidine, have been added in mouth rinses and dentifrices to prevent plaque and gingivitis. But some of these substances show undesirable side effects such as tooth staining and altered taste. This has led to increased attention on using natural ingredients in herbal dentifrices. Herbal ingredients have several properties; for example, turmeric is often cited for its antimicrobial properties, camphor for its cooling effects, peppermint oil for its refreshing taste, and clove for its traditional use in oral care.^[22]

Ideal Properties of herbal toothpaste

- Pleasant taste and odour.
- Non-toxic and non-irritant
- Long-lasting impact
- Controlled ablativity.
- Good spreadability and foamability.
- Stable during storage and antimicrobial efficacy.^[23]

Advantages of herbal toothpaste

- Fights bacteria naturally.
- Uses neem to stop cavities.
- Soothes tooth pain.
- Freshens breath.
- Protects enamel.
- Safe if swallowed.^[24]

Disadvantages of herbal toothpaste

- Lack of fluoride.
- Increases risk of dental cavities.
- Slower therapeutic results.
- Variable ingredient quality.
- Short shelf life.^[25]

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