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Review on Formulation and Evaluation of Herbal Tooth Powder

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Abstract : *Powders are among the oldest pharmaceutical solid dosage forms, extensively utilized in industrial manufacturing and clinical settings. They consist of finely divided medicinal agents and excipients designed for both internal and external administration. This review highlights the significance of tooth powders in the current oral care landscape, describing their composition, classifications, formulation techniques, and methods of evaluation. Increasing awareness regarding the drawbacks of synthetic dental products has driven a shift toward safer, nature-based alternatives. Herbal tooth powders integrate traditional therapeutic practices with modern pharmaceutical advancements, presenting an effective means of preserving oral hygiene. This paper also discusses recent scientific progress, regulatory frameworks, and prospective developments in the field. Establishing evidence-based validation of these formulations can help unite time-honored remedies with contemporary oral health practices..*

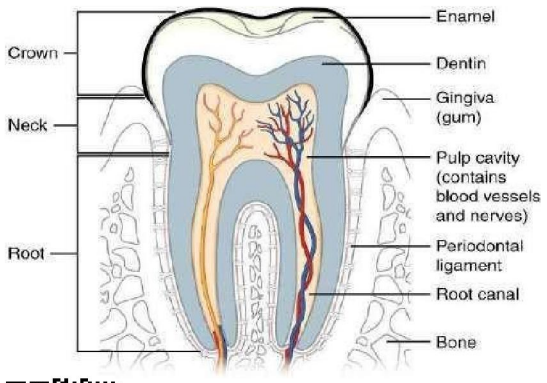
Keywords: Herbal tooth powder, bulk density, pycnometer, porosity, Carr's index, oral health.

I. INTRODUCTION

The jawbones contain hard, calcified structures called teeth. They are necessary for the initial stage of digestion, known as mastication, or chewing. Teeth not only help in breaking down food into smaller pieces but also assist in speech,integrity of the jawbone. A person's self-esteem and general health are greatly enhanced by having healthy teeth.[1]

Types and Functions of Teeth

1. **Incisors (8):** 4 in upper and 4 in lower jaw. Teeth with sharp edges designed for cutting and slicing food.
2. **Canines (4):** Pointed teeth, also known as cuspids, used for tearing food.
3. **Premolars (8):** Also called bicuspids; they have flat surfaces with ridges for crushing and grinding food.
4. **Molars (12):** Including 4 wisdom teeth, they are located at the back and are responsible for grinding food thoroughly.



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Importance of Teeth:

- Maintain Oral Hygiene
- Removes food particles and plaque between teeth.
- Mouthwash Helps kill bacteria and freshens breath.
- Avoid sugary and acidic foods that promote tooth decay.
- Regular Dental Check-ups[2]

Dental Problems

2 Cavities
3 Gingivitis
4 Periodontitis
5 Tooth Sensitivity[3]

Pharmaceutical solid dose forms known as powders are used in practically every facet of pharmacy, both in practice and business. A dry mixture of finely separated medications and chemicals intended for both internal and exterior usage is called a pharmaceutical powder. Drugs and other ingredients, when they occur in the solid state in the course of being processed into a dosage form, usually are in a finely divided condition. A powder whose state of subdivision is critical in determining its behavior both during processing and in the finished dosage form. Although the use of powders as a dosage form has declined, the properties and behavior of finely divided solid materials are of considerable importance in pharmacy. They are available in crystalline or amorphous forms. They are considered as the oldest and simplest dosage form.[4]

II. TOOTH POWDER

Powders are a solid pharmaceutical dosage form used to maintain cleanliness and enhance the polish of tooth enamel, thereby helping prevent dental caries. This effect is achieved through various dental care formulations. Historically, tooth powder dates back to Roman times, when it was employed to clean and whiten teeth, strengthen gums, fix loose teeth, and relieve toothache. Some preparations also incorporated honey, myrrh, salt, and hartshorn. In India, particularly in rural areas, the use of powdered substances like charcoal, brick powder, and salt for dental cleaning has been widespread.[6]

Mildly abrasive powders, when used with a toothbrush, help maintain oral hygiene. These abrasives — water-insoluble fine particles such as precipitated chalk, dicalcium phosphate dihydrate, calcium pyrophosphate, and alumina — mechanically scrub the enamel surface, loosening plaque without damaging the teeth or gums. Plaque buildup can lead to cavities, gingivitis, and eventual tooth loss.

Regular dental checkups help remove plaque deposits and protect the teeth.[7]

Plaque is a sticky yellowish-white film that forms when oral bacteria combine with sugary or starchy food particles. Tooth brushing and flossing remove plaque, while neglect allows it to harden into tartar. Plaque buildup can lead to cavities, gingivitis, and eventual tooth loss. Regular dental checkups help remove plaque deposits and protect the teeth.[8]

Tooth powders differ from toothpastes and are available in both fluoride and non-fluoride forms. Fluoride strengthens enamel by making it less soluble, while bacteriostatic agents and enzyme inhibitors suppress carbohydrate fermentation. Tooth powders can be prepared by simple, cost-effective methods.

The main dental diseases include plaque accumulation, caries, and pyorrhea. Proper dental care is essential to prevent tooth decay and periodontal conditions. In the Indian subcontinent, traditional remedies are still widely used for treating toothache, caries, and other dental ailments. The mouth naturally harbors non-pathogenic bacteria, but an imbalance in this flora can lead to infections and tooth decay. Streptococcus mutans is recognized as the primary species responsible for the development of dental caries.[9]

- **Characteristics of tooth powders:**
  - **It should be finely powdered.**

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- It should have cleansing action.
- It should possess good flavor.
- Helps in refreshing teeth.
- It provides healthier gums.
- It provides polishing effect.
- It shows binder property especially in toothpaste.
- It provides surfactant activity.
- It shows humectant activity.
- Compatible with sweetening and flavoring agents.
- It provides foaming effect.[10]

TYPES OF TOOTH POWDER:

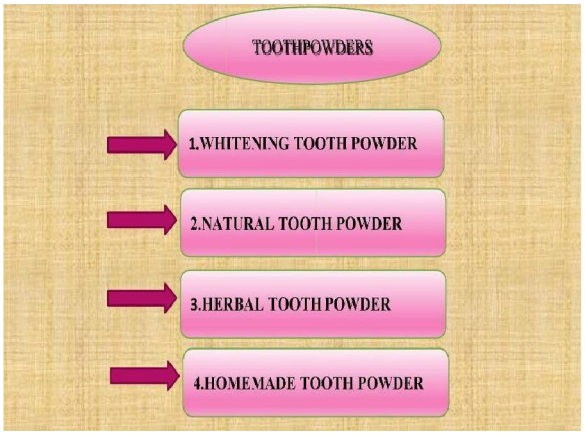


Figure1: Types of tooth powder

- **Whitening Tooth Powders**
  These formulations include specialized abrasives or natural whitening agents aimed at eliminating surface stains from teeth. When used appropriately, they enhance tooth brightness for cosmetic purposes without causing damage to the enamel.
- **Herbal or Natural Tooth Powders**
  Prepared from plant-derived ingredients such as neem, clove, mint, and other medicinal herbs, these powders offer antimicrobial and anti-inflammatory benefits. They appeal to consumers seeking chemical-free, safe, and environmentally friendly options for maintaining oral hygiene.
- **Medicated Tooth Powders**
  These are enriched with therapeutic agents that provide targeted benefits, such as reducing gum inflammation or preventing dental caries. Produced under stringent pharmaceutical standards, they are formulated to ensure consistent medicinal efficacy.
- **Homemade or Traditional Tooth Powders**
  Typically made from easily available natural substances like salt, charcoal, baking soda, or powdered herbs, these preparations represent indigenous knowledge and long-standing oral care practices passed down through generations.[11]

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❖ **TYPICAL FORMULA FOR TOOTH POWDER**

Table no.1: Typical Formula For tooth powder

R_x	QUANTITY
INGREDIENTS	
Dicalcium phosphate, Dihydrate	75.0 g
Precipitated calcium carbonates	22.0 g
Sodium lauryl sulphate	1.0g
Soluble saccharin	2.0g
Peppermint oil	0.4ml
Cinnamon oil	0.2ml

IIII. PRINCIPLE

Teeth cleansing of tooth powder is attributed to abrasive effect imparted dicalcium phosphate, precipitated calcium carbonate or other similar agents and surface tension lowering properties of surfactant like sodium lauryl sulphate. TThe abrasive agents, when pressure is applied, scrape away debris, while the surfactant aids in loosening the debris or plaque. In addition, powder contains sweeteners and flavoring agent.[12]

Properties of each ingredient:

Abrasive/polishing Agents: These are solid cleansing materials which primarily, act by removing debris and residual stain from the teeth by providing friction and secondarily by polishing the surface of the enamel. They generally comprise of 20-50% of the total formulation.[13]

Precipitated calcium carbonate or chalk were prepared by double decomposition of calcium chloride and sodium carbonate in an aqueous solution. These are low cost and are easily available in number of density grades, ranging from light to extra dense. Also has seen some Impurities and variations in abrasivity exist across different grades. Dicalcium phosphate anhydrous is highly abrasive and typically used in medium concentrations. Foaming, wetting, cleaning, and surface-active agents play a crucial role by penetrating and loosening surface deposits, emulsifying, and suspending debris, which tooth powders then remove from the tooth surface. These agents can be either surface-active agents or soaps that enhance the effectiveness of abrasives by lowering the surface tension on the teeth. Surface active agents are foaming agents employed at levels of 0.5-2% to provide necessary foaming action. Sodium lauryl sulphate most widely used other surfactants that used are sodium lauryl sarcosinate, sodium lauryl sulfoacetate. The soap should be completely saponified, should contain 2% moisture, not more than 0.3% free alkali.[14]

Sweetening Agents: Agents are added to mask the bitter tastes of ingredients specially produced foaming and flavoring agents. These are synthetic compounds like saccharine, aspartame, cyclamates are used between 0.05-0.25%.

Flavoring agents: Tooth powders flavors belongs not only to satisfy the requirements of the formula but for satisfying the consumers who is looking forward to freshen breath after brushing. Peppermint oil, clove oil, oil of winter green, eucalyptus oil helps to prepare product which have pleasant long-lasting effect and which preferably has medicinal and freshening impacts, used between 0.2-2% .[15]

IV. PROCEDURE

1. Sift the measured quantity of dicalcium phosphate and precipitated calcium carbonate through a No. 80 sieve.
2. Combine the flavoring agents with 1 gram of precipitated calcium carbonate, then add sodium lauryl sulfate and mix thoroughly.
3. Continue mixing using the principle of geometric dilution.

CONTAINERS:

Tooth powders should be packaged in metal or plastic containers with perforated lids.

DIRECTIONS:

Apply the powder to the surface of the teeth using a toothbrush.

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STORAGE:

Keep in a cool, dry place, ensuring protection from moisture.

PACKAGING OF POWDERS:

Powders are typically wrapped in paper or placed in wide-mouth containers.[16]

WRAPPING OF POWDERS:

White glazed paper is commonly used for wrapping. The wrapping process should be conducted on a clean tile or a large sheet of glazed paper to safeguard the product. Follow these steps for wrapping:

1. Cut the required number of powder papers to a suitable size (120mm x 100mm).
2. Align the papers with their long edges, folding up one long edge to about one-seventh of its width.
3. Weigh the powder and place it in the center of each paper.
4. Tuck the unfolded edge of the paper under the folded edge, ensuring it lies precisely within the first fold. Then, fold the first fold again to bring it to the center.
5. Finally, sharply bend one-fourth of each end to meet in the middle over the powder on the plain side.
6. Firmly crease the folds using a clean, flexible spatula, taking care not to apply excessive pressure that could cause the powder to cake.
7. Arrange the packets in pairs, flap to flap, and secure them with an elastic band.
8. If the number of powders is fewer than six, place them in an envelope. For larger quantities, use boxes.
9. Ensure that no powder is trapped within the flaps or folds of the wrapping.[17]

❖ COMMERCIAL BRANDS OF TOOTH POWDER AVAILABLE IN MARKET

Table no.2: List of commercial brands of tooth powder available in market.[18]

Sr. No.	BRAND NAME	MANFACTURER
1.	Colgate Super Rakshak tooth powder.	Colgate Palmolive India Limited
2.	Dabur Red Lal Dant Manjan-Ayurvedic tooth powder.	Dabur India Limited
3.	Clove, pudina Dabur Red tooth powder.	Dabur India Limited
4.	Vicco Vajradanti tooth powder.	Vicco Laboratories Private Limited
5.	Gopal tooth powder.	S.P.S Jayam and company
6.	Kajah special tooth powder	Rajah Ayurveda
7.	Star herbal tooth powder.	Hid Ayat Ayurvedic Gruh Udhyog
8.	K.P Namboodiri's tooth powder.	KP Namboodiri's Ayurvedics
9.	Urban Botanic Activated charcoal teeth whitening powder.	Urban botanic private limited
10.	Healthvit activated charcoal powder for Natural teeth whitening.	West Coast Pharmaceutical Works Limited
11.	Lordent tooth powder.	Lord's cosmetics
12.	Meghdoot dantusha tooth powder.	Meghdoot Gramodhyog Seva Sansthan
13.	Payorin tooth powder.	Unit of Dawakhana Tibbiya college
14.	Hamdard Manjan tooth powder.	Hamdard (Wakf) Laboratories
15.	Sitaram tooth powder	Sitaram Ayurveda Limited
16.	Ancient Living Organic tooth powder.	Ancient Living Product Private Limited
17.	Georganics tooth powder.	Georganics Limited
18.	Patanjali Divya Dant Manjan.	Patanjali ayurveda Limited

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V. EVALUATION METHODS:

Determination of pH

A 1%w/v dispersion of tooth powder is prepared in distilled water and shaken gently for 30 minutes for homogenous dispersion. The dispersion is filtered through Whatman filter paper at room temperature and the pH of the filtrate is measured by digital pH meter. The measurement of sample is performed in triplicate and the results is expressed as the mean of measured observations. The acceptable pH between 3.76-8.03.

Foaming Index

To create the foams, 10 ml of a 1% w/v dispersion of tooth powder is placed in a 100 ml measuring cylinder. The mixture is then stirred mechanically for 30 minutes.. When the maximum foams are produced, the volume occupied by the foams is recorded and the mean of the three respective observations is recorded. Result calculated by measuring the height of foam developed in the measuring cylinder.

Density of powder

The density of powders is measured using the liquid displacement method in a pycnometer, following this formula:

$$DP = \frac{W}{[(a+w)-b]\times SG}$$

where 'W' being the wt. of powder,' SG' is the specific gravity of the solvent used, 'a' is weight of bottle and solvent, and 'b' is the weight of bottle+solvent+powder. The result reflects the ratio of the untapped powder sample to its volume, accounting for the contribution of interparticulate void volume.



Figure 2:Pycnometer

- **Bulk Density**

The tooth powder is allowed to flow freely into a 100 ml measuring cylinder until it reaches the designated mark. A spatula is used to even out the upper surface of the powder. The volume occupied by the powder is recorded as the bulk volume, while the weight is noted as the bulk mass. The bulk density is then calculated using the following expression: The volume occupied by the powder is noted down and represented as bulk volume and the weight as bulk mass. The bulk density is determined by using following expression-

$$\text{Bulk density} = \frac{\text{Mass of powder}}{\text{Bulk volume occupied by powder}}$$

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As the bulk volume of the powder increases the bulk density increases.

- **Tapped Density**

It is measured using a tapped density test apparatus. The powder is placed in a 50 ml measuring cylinder of the apparatus and tapped in an up-and-down motion to a specified distance until it compresses to a constant volume. The open end of the measuring cylinder is covered with aluminum foil to prevent the loss of lines due to dusting at the time of tapping. The tapped density is determined by using following
Formula-

$$\text{Tapped density} = \frac{\text{Tapped mass of tooth powder}}{\text{Tapped volume of tooth powder}}$$

As the tapped volume increases density decreases.

- **Porosity**

It is the void space that is occupied by the mass of the powder along with the entrapped air. It was determined as follows-

$$\text{Percentage porosity} = 1 - \frac{\text{Tapped volume}}{\text{bulk volume}} \times 100$$

Result shows that as the density of the powder increases porosity decreases.[19]

✓ Carr's Index (compressibility index) and Hausner's ratio

The utility of this simple ratio, known as Carr's index, lies in its ability to predict the flowability of powders based on the reduction in powder volume during tapping. A lower Carr's index signifies a more free-flowing powder, whereas a higher value is associated with greater adhesion and friction properties. Both Carr's index (compressibility index) and Hausner's ratio are determined using the formulas provided below:

$$\text{Carr's index} = \frac{100 \times (V_o - V)}{V_o}$$

$$\text{Hausner's ratio} = \frac{V_o}{V_f}$$

In this context, 'Vo' refers to the initial volume of the powder in the measuring cylinder, and 'Vf' indicates the final volume of the powder after tapping.

A Hausner's ratio exceeding 1.25 indicates good flow, while a ratio of 1.5 suggests poor flow. Regarding Carr's index, a value above 25 signifies poor flowability, while a value below 15 indicates good flowability.[20]

❖ **Abrasiveness**

This measurement assesses the fineness of the powder, which, when rubbed on the tooth surface, helps remove adhered food particles and maintain a shiny, smooth appearance. It is evaluated by rubbing a known amount of powder on a glass slide for 15 minutes using a fingertip, mimicking the action of brushing teeth. The slide's surface is then examined microscopically, and the scratches created by the powder are recorded. Results are expressed using positive and negative signs, with more positive signs indicating greater abrasiveness.[21]

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❖ **Angle Of Repose**

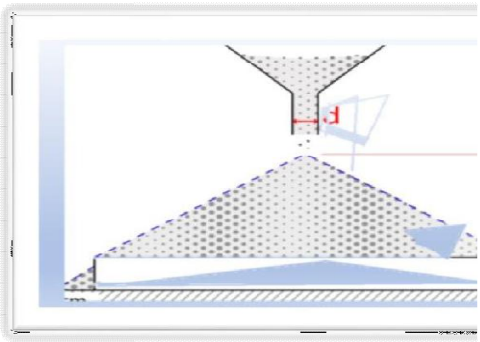


Figure 3: Angle of repose

It is determined using the heap method. In this process, the powder is poured through a glass funnel from a specific height onto a smooth horizontal surface until a conical heap of maximum height is formed. The diameter and height of the heap are measured, and the tangent of the angle is calculated using the expression below:

$$\text{Angle of repose } (\emptyset) = \tan\left(\frac{h}{r}\right)$$

Table no:3 Angle of repose

Angle Of Repose ( )	Types of flow
25	Excellent
25-30	Good
30-40	Passable
>40	Very poor

Where, 'h' is the height of heap and 'r' is the radius heap made by powder.

The table indicates the following: -

- Powders with an angle of repose of 25° display excellent flow characteristics.
- Powders with an angle of repose between 25° and 30° demonstrate good flow.
- Powders with an angle of repose ranging from 30° to 40° demonstrate passable flow characteristics.
- Powders with an angle of repose greater than 40° exhibit very poor flow.
- Determination of ethanol-soluble extractive

A 5.0 g sample of air-dried tooth powder is macerated with 100 ml of 95% v/v ethanol in a sealed flask for 24 hours.Determination of water-soluble extractive

A 5.0g of air-dried tooth powder is macerated with 100ml of chloroform water in a closed flask for 24 hours and shaken frequently during the first 6 hours and then allowed to stand for 18 hours. Thereafter, it is filtered rapidly taking precautions against loss of chloroform and then evaporated 25ml of the filtrate to dryness in a tare flat- bottomed shallow dish, dried at 105 C and weighed. The percentage of water-soluble extractive with reference to air dried tooth powder is calculated. Water-soluble extractive value should be 2.56%w/w.[22]

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- **Particle rearrangement behavior**

The rearrangement behavior of the powder particles is determined by following equation:

$$\left[\frac{(V-V_{\infty})}{(V_0-V_{\infty})}\right] = (1+kn)^{-0.25}$$

Where ‘ ’ indicates the initial volume of a powder sample, which is then shaken ‘n’ times, giving rise to a volume ‘V’ after ‘n’ taps. The final volume (corresponding to the mostly closely arranged packing) is ‘ ’ and ‘k’ is a rearrangement constant. Evaluation of particle rearrangement by under tapping and consolidation by deformation under applied pressure.

❖ **Compatibility and Cohesiveness of Tooth Powders**

Tooth powder is poured into 50 ml measuring cylinders of bulk density test apparatus through an angle of 45 and the heap of particles in the cylinder is labeled off horizontally with a thin
metallic spatula and the bulk volume ( ) is accurately measured.
The cylinder is then mechanically tapped and values for the volume of powder column (V) after a specific number of taps ‘N’ is determined. Three measurements taken and the contents of the linear equation is calculated using tapping numbers. The following Kawakita equation is applied to assess the value of compatibility and cohesiveness of powders.

$$\frac{N}{C} = \left[\frac{N}{a} + \frac{1}{ab}\right]$$

Here ‘a’ and ‘b’ are constants, ‘a’ describes the degree of volume reduction at the time limit of tapping and is called compactability. ‘1/b’ is considered to be a constant related to cohesion and is called cohesiveness. ‘C’ is the degree of volume reduction and is calculated from the initial ‘ ’ and tapped volume ‘V’.

$$C = \frac{(V_0 - V)}{V}$$

Here, ‘a’ and ‘b’ are constants whose values are obtained from the slope and intercept of the graph plotted between ‘N/C’ and number of taps ‘N’. As the cohesiveness increases flow property decreases also when compatibility increases flow property decreases.[23]

VI. DISCUSSION

The use of tooth powder is often regarded as beneficial for oral health, providing effective care for teeth. Powders are a common pharmaceutical solid dosage form found in various aspects of pharmacy, both in industry and practice. They consist of finely divided drugs and chemicals in a dry form, intended for both internal and external use. Tooth powders offer several advantages, including greater stability compared to liquid dosage forms, ease of handling and transport, and suitability for use in pediatrics and geriatrics. However, they also have some drawbacks, such as the potential for a bitter taste, less precise dosing, and a more time-consuming application process. Tooth powder helps maintain cleanliness and polish in tooth enamel, preventing dental caries. Historically, the Romans used tooth powders to clean and whiten teeth, stabilize loose teeth, and prevent toothaches. These powders were traditionally made from burnt and finely ground animal bones, hooves, and horns, as well as materials like oyster shells, crab shells, and eggshells. Some formulations also included honey, myrrh, and salt. Common abrasive agents in tooth powders include precipitated chalk, dicalcium phosphate, and alumina, which work by scraping the enamel surface to remove plaque. Plaque is a

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yellowish-white, sticky film that forms on teeth when food particles adhere to them, leading to potential issues like gingivitis and periodontal disease if left untreated. Many people in the Indian subcontinent rely on traditional remedies for treating toothaches, caries, and other dental issues. Tooth powders exhibit various characteristics, including cleansing action, refreshing properties, foaming ability, and polishing effects. There are different types of tooth powders available, such as whitening, natural, and homemade varieties. Each formulation typically includes various penetrating agents, abrasives, polishing agents, and flavoring agents. Proper storage conditions, packaging, and wrapping are crucial for maintaining quality. Numerous commercial brands of tooth powder are available in the market, allowing consumers to choose products that meet their specific needs. Various evaluation methods are utilized to assess tooth powders, including the determination of pH, foaming index, powder density, bulk density, tapped density, porosity, Carr's index, Hausner's ratio, abrasiveness, angle of repose, ethanol-soluble extractive, water-soluble extractive, particle rearrangement behavior, as well as the compatibility and cohesiveness of the powder.

VII. CONCLUSION

Powders are pharmaceutical solid dosage form which is applied to provide cleanliness and polishness in teeth to prevent dental caries. Tooth powders are widely used oral care products that help control plaque and other deposits on tooth surfaces, thereby reducing gingivitis. The current study concludes that tooth powder has demonstrated statistically superior effectiveness compared to toothpastes in managing dental plaque and gingivitis. The impact of toothpowder in the healthcare system can't be excluded. The evaluated tooth powder exhibits favorable organoleptic, phytochemical, physicochemical, and rheological properties, along with outstanding safety. Herbal toothpaste is generally considered safe for use twice a day and does not produce harmful effects. Instead, it provides a refreshing sensation and helps eliminate bad odors. Using herbal toothpaste offers a reliable, safe, and cost-effective method for maintaining oral hygiene.

REFERENCES

1. Gaykar DB, Tambe BD. Formulation and evaluation of herbal tooth powder for oral care. Int. J Res Publ Rev. 2023 Jun;4(6):1057- 11061.
2. Edake VS. Formulation and evaluation of herbal tooth powder. Int. J Creat Res Thoughts. 2023 May;11(5):M346-M362.
3. Uchale PN, Kumbhar ST. Formulation and evaluation of herbal toothpowder. Int J Adv Res Sci Commun Technol. 2022 Jun;2(6):59- 71.
4. Robert E O Connor and Joseph B Schwartz. Powders: Introduction. Remington The Science and Practice of Pharmacy vol.10; 2000. page no.681.
5. Michael Bayba. Powders: Advantages and disadvantages. Asian Journal of Aesthetic Dentistry vol.9; 2022.page no.629-632.
6. MK Khan. Comparison of the plaque removing efficacy of tooth powder, Europe PMC, Journal of the International academy of periodontology vol.11; 2009.Page no. 147-150.
7. Janakiran, Chandrashekar. Comparison of plaque- removing efficacy of tooth powder in young adults in India: A Randomized controlled Clinical trial; Journal of the International Academy of periodontology US National Library of Medicine vol.1; 2018.Page no.203-215.
8. Muhammed, Khan Khalil. Evaluating the Clinical Efficacy of toothpowder on plaque-induced gingivitis: A randomized controlled trial. Journal of compendium of continuing Education in Dentistry, US National Library of Medicine vol.17; 1995.page no. 234-240.
9. Singh, Ramprakash. Comparative evaluation of tooth substance loss and its correlation with the abrasivity and chemical composition of different dentifrices. Research Gate, Indian journal of Dental Research vol.12 ;2016. Page no. 123-128.
10. Corey Whelan. Toothpowder: The surface effect of dentifrices Aust dent Journal vol.15; 2020. Page no.567-

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570.
11. Van der Weijden Slot DE. Oral hygiene in the prevention of Periodontal diseases; the evidence. Journal of the Periodontology vol.20; 2000. Page no.104-112.
12. Swaminathan DM, Addy JM. The efficacy of detergents on stain removal. Asian Journal of Aesthetic Dentistry vol.14; 1996. page no. 25-29.
13. Meyers IA. The surface effect of dentifrices Aust dent Journal vol.45; 2000. Page no. 118-124.
14. Yankell SL. Clinical study to assess the stain removal efficacy of tartar control dentifrices and a low abrasive dentifrice. Journal of clinical Dentistry vol.5; 1994.Page no.125-128.
15. Vipin Kumar, Bhaskar Mazumder, Prince Prashant Sharma.Anti-microbial and powder characterization of herbal dentifrices. Journal of the International Academy of Periodontology vol.16; 2013. Page no.101-116.
16. Mithal BM and Saha R.N. A Handbook of cosmetics vol.1; 2000. Page no. 203-215.
17. Sheikh Zayed. Clinical Effects of toothpowder on gingivitis vol. 18; 2013.Page no. 122-145.
18. Alaul Hasan Abad Farooqi, Srikant Sharma, Asifudilla khan, Raghubind Kumar, Sushil Kuma. Formulation useful as a natural herbal toothpowder. Journal of the International Academy of periodontology vol.1;2001. Page no. 98-200.
19. Bharathi, D. Rajalingam, Kausalya. Formulation and Evaluation of herbal toothpowder for Oral care. Journal of clinical Dentistry vol.22; 2020. Page no. 456-467.
20. Khan M.K, Ayyaz AK, Tasleem H. Comparison of the plaque removing efficacy of toothpowder. Journal of the International Academy of periodontology vol.92;2009. Page no. 147-150.
21. Ivan SP. Dental Caries and periodontal diseases. Journal of clinical Dentistry vol.11;1999. Page no. 29-36.
22. RM Mehta. Solid dosage forms. Dispensing Pharmacy vol.4;2008. Page no.110-118.
23. Ohrn k, Sanz. prevention and therapeutic approaches to antimicrobial and powder characterization of dentifrices. Journal of Clinical periodontology. Vol.10;2009. Page no.20-26.