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A Review Paper on Green Tea Herbal Face Scrub

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Abstract: *The skin is continuously exposed to environmental factors such as dust, pollution, sunlight, and other external conditions, which may contribute to the accumulation of dirt, excess sebum, and dead skin cells on its surface. Regular cleansing and mild exfoliation are therefore important aspects of routine skincare. In recent years, herbal cosmetics have gained considerable attention due to the increasing preference for naturally derived ingredients and simple formulations. Face scrubs are topical preparations that provide mild mechanical exfoliation and help remove dead skin cells and surface impurities, resulting in a smoother and cleaner skin surface. The present review focuses on the development and evaluation of a green tea herbal face scrub prepared using selected natural ingredients, including green tea, Multani mitti, aloe vera gel, honey, glycerin, and rose water. Green tea (Camellia sinensis) was selected as the principal herbal ingredient because it contains biologically active constituents such as polyphenols and catechins, which are associated with antioxidant properties. The other selected ingredients provide complementary functions such as cleansing, moisture retention, skin conditioning, soothing effects, and improvement of the consistency and application characteristics of the formulation. The formulation can be developed by accurately weighing the selected ingredients and incorporating them in a suitable sequence to obtain a uniform and smooth preparation. Different trial formulations may be prepared by varying the proportions of ingredients and comparing their physical characteristics. The developed formulation can be evaluated for appearance, color, odour, texture, pH, spreadability, and washability to determine its basic quality and suitability for topical application. These evaluation parameters provide useful information regarding the physical stability, application properties, and overall acceptability of the preparation. The combination of green tea with other naturally derived ingredients provides a simple, economical, and herbal approach to facial cleansing and mild exfoliation. However, the herbal origin of ingredients alone does not establish product safety or efficacy; therefore, further investigations such as stability studies, microbial quality testing, and appropriate safety evaluation are necessary.* *[1,5,19,20].*

Keywords: Green tea, herbal face scrub, Camellia sinensis, exfoliation, skin care, antioxidants, polyphenols, catechins, natural cosmetics, herbal formulation, facial scrub, skin rejuvenation, anti-inflammatory, antimicrobial, dead skin removal, cosmeceuticals.

I. INTRODUCTION

Skin

It is the outer protective covering of the body and the largest organ of the human body. It protects us from germs, injury, and harmful environmental factors, and it also helps to regulate body temperature. [8,9]

Layers of skin:

Epidermis: Outer layer. Dermis: Middle layer. Hypodermis: Inner fatty layer.

1.1. Epidermis:

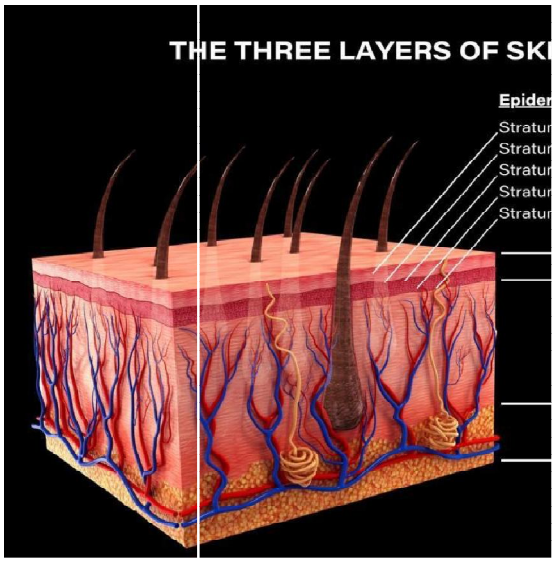
The epidermis is the outermost layer of the skin, the part we can see and touch. It works as the body's first protective barrier against germs, dust, sunlight, and other harmful things from outside. It also helps give skin its color because it contains melanin, the pigment responsible for skin tone. The epidermis does not have blood vessels, so it depends on

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the dermis for nutrients. It has five sublayers in thick skin: stratum basal, stratum spinosum, stratum granulosum, stratum lucidum, and stratum corneum.

1.2. Dermis:

The dermis is the middle layer and is much thicker than the epidermis. It contains blood vessels, nerve endings, hair follicles, sweat glands, oil glands, collagen, and elastin. Because of these structures, the dermis helps the skin stay strong, flexible, and sensitive to touch, heat, and pain. It also helps nourish the epidermis and plays a major role in temperature control. [8,9]



1.3. Hypodermis:

The hypodermis is the deepest layer, also called the subcutaneous layer. It is mainly made of fat and connective tissue. This layer cushions the body, stores energy, and protects internal organs from shock. It also helps insulate the body, so it keeps us warm. [8,9]

Face Scrub:

A face scrub is a skincare product used to exfoliate the skin by gently removing dead skin cells, dirt, and excess oil from the surface. It usually contains small grainy particles or other exfoliating ingredients that help clear away buildup and make the skin feel smoother, fresher, and cleaner after use. By removing this surface buildup, a face scrub may also help improve skin texture and reduce the dull appearance caused by dead skin cells collecting on the skin. It is commonly used as part of a skincare routine, but it should be applied carefully so that the skin is not irritated by over-scrubbing.

Green tea is a natural ingredient that is widely used in skincare products because it contains antioxidants and other helpful plant compounds. In a green tea herbal face scrub, it is added to support cleansing and mild exfoliation while also giving the skin a fresh and refreshed feel. Green tea is often associated with benefits such as reducing dullness, controlling excess oil, and helping the skin look smoother and cleaner. Since a face scrub works mainly on the outer layer of the skin, green tea is used to improve the appearance of the skin surface in a gentle way.

Green tea is added to face scrub because its natural compounds may help reduce excess sebum, soothe redness, and improve the appearance of dull skin. Along with exfoliating the outer layer of the skin, it can also make the face feel fresher, cleaner, and smoother.

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Cosmetic products play an important role in maintaining personal hygiene and improving the appearance and condition of the skin. They are prepared using a variety of substances obtained from natural as well as synthetic sources. Depending on their intended use, cosmetics may be formulated for cleansing, moisturizing, protecting, exfoliating, or enhancing the appearance of different parts of the body.

The practice of using cosmetic preparations is not a recent development. Natural materials have been used for skin and personal care since ancient times. Different civilizations made use of substances such as oils, waxes, plant-derived materials, and aromatic preparations for maintaining the skin and improving personal appearance. With scientific and technological development, cosmetic formulations have gradually become more diverse and sophisticated. The skin, particularly facial skin, is continuously exposed to environmental conditions such as dust, impurities, sunlight, and pollution. These factors may contribute to the accumulation of unwanted material on the skin surface. Exfoliation is therefore an important part of skin care, as it assists in removing dead cells and surface impurities and leaves the skin feeling smoother. Facial scrubs are cosmetic preparations specifically developed to provide exfoliation through the incorporation of suitable abrasive or granular materials. When applied gently, these particles help loosen and remove dead cells from the outer surface of the skin. A properly formulated scrub should possess suitable consistency and particle characteristics so that it can provide effective cleansing without causing excessive irritation. In recent years, there has been an increasing interest in herbal and naturally derived cosmetic formulations. Plant-based ingredients are attractive for cosmetic applications because they contain naturally occurring compounds that may contribute to cleansing, conditioning, soothing, and antioxidant effects. Ingredients such as rice powder, sandalwood powder, rose water, and other herbal materials can be selected according to their individual properties and their compatibility with the intended formulation. An herbal facial scrub can thus be formulated by combining appropriate [8,9,20] natural ingredients to obtain a preparation that provides exfoliation along with additional skin-care benefits. However, the quality of the final product depends on several factors, including its appearance, odour, pH, consistency, spreadability, washability, viscosity, and skin compatibility. Evaluation of these characteristics is essential for determining the quality and acceptability of the formulation.

The present work is aimed at developing and evaluating a herbal facial scrub prepared using selected natural ingredients. The formulation is assessed through suitable physicochemical and sensory parameters to determine its stability, performance, skin compatibility, and overall suitability as a cosmetic preparation. [8,9,11]

A facial scrub is a cosmetic product used to cleanse and exfoliate the skin. Herbal ingredients are obtained from different parts of plants & may be used in either fresh A dried form for formulation. herbal facial scrub is topical Preparation a semisolid that help cleanse, moisturize & Smooth the Skin It effectively dead removes dirt, excess oil, & white Skin cells, blackheads, heads without causing pain or irritation Regular use enhances the Skin appearance by improving its texture by promoting the healthy glow hydrating ingredients gives moisturizing & radiance to the skin. It helps to maintain Skin softness. It is suitable for both oily & sensitive skin types help prevent pimples reduces dullness, excess sebum Production & naturally radiant [s8k,9i,n2.0]

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II. AIM & OBJECTIVES

Aim:

To formulate and evaluate a herbal face scrub containing green tea (Camellia sinensis) and selected natural ingredients for mild exfoliation, cleansing, and improving the overall appearance and feel of the skin.

Objectives:

1. To formulate a herbal face scrub containing green tea (Camellia sinensis) using selected natural ingredients.
2. To select suitable herbal and natural ingredients such as Multani mitti, aloe vera, honey, glycerin, and rose water for the formulation.
3. To utilize the antioxidant potential of green tea polyphenols and catechins in a cosmetic formulation.
4. To develop a formulation that provides mild mechanical exfoliation and helps remove dead skin cells and surface impurities.
5. To develop a smooth, uniform, and easily applicable facescrub with acceptable consistency.
6. To optimize the concentration and proportion of ingredients to obtain a satisfactory formulation.
7. To evaluate the formulation for appearance, colour, odour, texture, and consistency.
8. To determine the pH of the prepared formulation and assess its suitability for topical application.

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9. To evaluate the spreadability of the formulation to determine its ease of application over the skin.
10. To evaluate the washability of the prepared face scrub and determine its ease of removal.
11. To assess the overall physical acceptability of the prepared formulation.
12. To compare different trial formulations, where applicable, and select the best formulation based on evaluation parameters.
13. To study the potential of green tea and other natural ingredients in the development of herbal cosmetic preparations.
14. To develop a simple and economical herbal face scrub using easily available natural ingredients.
15. To provide a basis for further studies involving stability, microbial quality, and safety evaluation of the developed formulation. [9,11,20]

III. LITERATURE REVIEW

Green tea has been widely studied in skincare because its polyphenols, especially EGCG, are linked with antioxidant and anti-inflammatory activity. Research on cosmetic formulations containing green tea has shown that it may improve skin moisture, reduce roughness, and support a healthier skin surface over time. Studies also suggest that green tea-based products can help protect the skin from environmental stress and may support skin clarity and comfort. For herbal face scrubs, green tea is often included because it combines mild exfoliation with skin-supporting properties. A face scrub helps remove dead skin cells, surface impurities, and excess oil, which can make the skin look dull and rough if left unchecked . When green tea is added, the product is often described as more soothing and suitable for people who want a gentle exfoliating option.

However, the literature also shows that results depend on the formula and the way the scrub is used . Physical scrubs may irritate sensitive or inflamed skin if used too often or too harshly, so they should not be presented as treatments for active skin diseases. [1,2,5]

Herbal Scrub vs Chemical Scrub

Herbal scrub is made from natural ingredients such as herbs, plant extracts, fruit powders, or natural exfoliating particles. It usually works by physically removing dead skin cells from the surface of the skin, and many people prefer it because it feels more natural and gentle when used correctly.

Chemical scrubs use active ingredients such as alpha hydroxy acids, beta hydroxy acids, or enzymes. Instead of rubbing dead skin cells, it helps dissolve the bonds that hold dead cells together, so the skin sheds them more evenly.

IV. MATERIALS & M E T H O D S

Ingredients:

Turmeric, rice, moong dal, honey, rose water, glycerin, Multani mitti (Fuller's earth), aloe vera gel, orange peel powder, sandalwood powder, and green tea powder. This formulation combines mechanical exfoliation (rice, moong dal), adsorbent/clay base (Multani mitti), antioxidant/anti-inflammatory actives (green tea, turmeric, orange peel, sandalwood), and humectants/emollients (honey, glycerin, aloe vera, rose water).

Name of ingredient	F1	F2	F3
Turmeric	0.10 gm	0.02 gm	0.05 gm
Rice	1.5 gm	2 gm	2.5 gm
Masoor dal	1 gm	1.5 gm	2 gm
Honey	1 gm	1.5 gm	2 gm
Rose water	0.5	0.5	0.5
Glycerin	1 ml	2 ml	2.5 ml

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Multani mitti	1 gm	1.5 gm	2 gm
Aloe vera gel	1 gm	1.5 gm	2 gm
Orange peel powder	0.5 gm	0.1 gm	0.5 gm
Sandal wood powder	1 gm	1.5 gm	0.5 gm
Green tea powder	0.5 gm	0.10 gm	0.75 gm

1. Turmeric:

• Synonym: Curcuma longa
• Biological Source: It consists of dried rhizomes of Curcuma longa
• Family: Zingiberaceae
• Description: Colour-Yellow
Odour-Aromatic Taste-Bitter
• Chief chemical constituents: Curcumin, Curcuminoids
• Uses: Reduce acne, anti-inflammatory



2. Multani mitti:

• Synonym: Multan clay
• Biological Source: It consists of hydrous aluminum silicates (clay minerals)
• Description: Colour- White
Odour- Pleasant Taste- Pleasant
• Chief chemical constituents: Montmorillonite, Kaolinite, Attapulgite
• Uses- Nourishes skin, reduce oiliness, and remove blackheads.



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3. Sandalwood:

• Synonym: Sandalwood tree
• Biological Source: It consists of dried bark of Santalum album
• Family: Santalaceae
• Description: Colour- Brown
Odour- Aromatic Taste- Unpleasant
• Chief chemical Constituents: Santalol, Cedrol, Esters
• Uses: Soothe sunburn, remove suntan, Reduce signs of aging skin.



4. Orange peel:

• Synonym: Orange zest
• Biological Source: It consists of dried fruits of Citrus sinesis
• Family: Rutaceae
• Description: Colour- Dark orange, red
Odour- Aromatic Taste- Bitter
• Chief Chemical Constituents: Terpenes, Carotenoids, Flavonoids
• Uses: Reduce skin marks, skin spots, help to skin whitening, Treat pimples, acne.



5. Honey:

• Synonym: Shahad

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• Biological Source: It consists of saccharine liquid prepared from the nectar of the flowers by the Honey-bee Apis mellifera
• Family: Apidae
• Description: Colour - Yellow brown coloured liquid
Odour - Sweet Taste - Sweet
• Chief chemical constituents: Dextrose and laevulose (70-80%), Dextrin (0.06-1.25%), Proteins
• Uses: Good for wrinkles and aging, Prevent acne, Remove dirt from pores.



6. Aloe Vera:
• Synonym: aloe vera, burn plant
• Biological Source: dried latex of leaves of it also known as cape aloe
• Family: Liliaceae
• Description: Colour - clear to slightly yellow/translucent gold
Odour - similar like rotten garlic or onion Taste - Bitter
• Chemical Constituents: aloe emodin
• Uses: heals burns and clears acne



7. Masoor Dal :
• Synonym: Red lentil or orange lentil
• Biological Source: The plant Lens culinaris, a small, annual legume
• Family- Fabaceae

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• Description: Colour - Red or orange
Odour - Earthy, nutty aroma
• Chemical Constituents: Protein, carbohydrates, fiber, minerals, and vitamins
• Uses: Acting as a natural cleanser, exfoliator, and bleaching agent.



8. Glycerin :

• Uses: Glycerin is a versatile humectant used in skincare for its ability to hydrate and protect the skin. It helps the skin retain moisture, which can alleviate dryness, improve skin barrier function, and even aid in wound healing.



9. Rose water :

• Uses: Water can be a beneficial addition to face scrubs. It helps soothe skin, balances natural oils, and provides a gentle cleansing action without stripping away moisture.



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10. Green tea:

• Synonym: Matcha

• Biological source:Green tea is derived from the leaves of the Camellia sinensis plant.

• Family: Theaceae

• Description: Colour - Bright green to yellow or even brown

Odour - fresh, grassy, and slightly sweet, with hints of floral or even seaweed notes depending on the type and processing

• Chemical Constituents: Polyphenols, particularly catechins like epigallocatechin-3 gallate (EGCG), along with caffeine, amino acids, and other compounds like theanine.



11. Rice :

• Synonym :cereal, cereal grass

• Biological source: Rice is a plant product, specifically the seed of the grass species Oryza sativa, also known as Asian rice

• Description: Colour - brown, red, black (or purple/dark blue), and white

Odour: Uncooked rice has a mild, slightly starchy smell, while cooked rice can have a more pronounced aroma, sometimes described as nutty, buttery, or even burnt.

• Chemical Constituents: Carbohydrates, specifically starch, making up a large portion of its chemical makeup. Other key constituents include protein, fat, fiber, and various minerals and vitamins.

• Uses: Helps to remove dead skin cells, improve skin texture, and brighten the complexion.



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V. REQUIREMENTS & PROCEDURE

Requirements:

- Clean mortar and pestle
- Weighing balance
- Measuring cylinder or micropipette
- Stainless-steel or glass spatula
- Fine sieve, preferably 60–120 mesh
- Clean glass or plastic container with a tight-fitting lid
- Labels and marker

Procedure:

1. Clean theequipment. Wash and dry the mortar, pestle, spatula, sieve, and storage container. The equipment must be completely dry before use.
2. Prepare the powders. Ensure that the rice, moong dal, green tea, orange peel, sandalwood, multani mitti, and turmeric powders are clean and dry.
3. Pass each powder separately through a fine sieve to remove coarse particles.
4. Mix the exfoliating powders. Place the accurately weighed rice powder and moong dal powder into the mortar. Add Multani mitti, green tea powder, orange peel powder, sandalwood powder, and turmeric powder according to the selected formulation.
5. Triturate the powder mixture. Mix and triturate the powders gently with the pestle until a uniform, smooth powder blend is obtained. Avoid excessive grinding because very fine particles may increase skin irritation and acceptable odour.
6. A similar preparation method involves sieving and homogenizing the powders before gradually adding aloe vera gel, glycerin, honey, and rose water.
7. Pack and label. Transfer the prepared scrub into a clean, airtight container. Label it with the formulation code, date of preparation, ingredient quantities, and storage instructions.
8. Prepare the liquid base in a separate clean container, mix the measured aloe vera gel, glycerin, honey, and rose water until the mixture becomes uniform.
9. Combine both phases. Add the liquid base gradually to the powder mixture while continuously mixing with the pestle or spatula.
10. Form the scrub paste. Triturate the mixture until a smooth, moderately thick paste is produced. If the paste is too thick, add rose water drop by drop; if it is too thin, add a small quantity of the powder blend.
11. Check the formulation. Examine the scrub for uniform colour, smooth consistency, absence of lumps and add rose water for fragnance.

Green Tea Herbal Face Scrub Procedure:

- A green tea herbal face scrub is typically prepared by combining green tea leaves (or powder) with a gentle exfoliant (such as sugar, bamboo powder, or oatmeal), a carrier oil or butter, and optional humectants like honey or glycerin.
- The mixture is then applied to cleansed skin using gentle circular motions for 1–2 minutes, left for 2–5 minutes if used as a mask, and rinsed thoroughly with lukewarm water.

Ingredient Selection: [9,18]

Common ingredients in green tea herbal face scrubs include:

- Green tea component: dried green tea leaves, matcha powder, or green tea extract (rich in polyphenols like EGCG, providing antioxidant and anti-inflammatory benefits).
- Exfoliant: fine sugar, bamboo powder, oatmeal, or rice flour,sandal wood powder,multani mitti,orange peel powder. (mechanical exfoliation to remove dead skin cells).
- Carrier/base: coconut oil, avocado butter, glycerin, or aloe vera gel,honey (for emollience and spreadability).
- Humectant/additives:honey, aloe vera, essential oils (optional; for hydration and fragrance).

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2. Preparation Procedure:

• Prepare green tea infusion or use dry leaves.
• Brew 1 green tea bag or 1 tsp loose green tea in ~50 mL hot water for 3 minutes.
• Allow to cool, then strain and retain the moist tea leaves.
• Alternatively use 1–2 g matcha powder directly.
• Combine exfoliant and green tea In a clean bowl, mix 1–2 tbsp fine sugar (or bamboo powder) with the green tea leaves/powder.
• Add carrier oil and humectant.
• Add 1 tsp coconut oil (or glycerin) and 1 tsp honey. Mix thoroughly until a thick, gritty paste forms.

3. Application Protocol:

• Cleanse skin with a mild facial cleanser and pat dry.
• Apply a thin layer of scrub to face and neck, avoiding the eye area.
• Massage gently in circular motions using fingertips (not palms) for 12 minutes.
• Optionalmask step: leave on for 2–5 minutes to allow antioxidant absorption.
• Rinse thoroughly with lukewarm water and pat dry.
• Follow with moisturizer or serum to lock in hydration. [8,9]

VI. EVALUATION PARAMETERS

Sr.No.	Parameters	Observation
1	Colour	Brown
2	Odour	Characteristic
3	Consistency	Good
4	pH	7.0
5	Viscosity	1.4580 poise
6	Spreadability	6.72g.cm/sec
7	Washability	Easily washable
8	Grittiness	Small gritty particles
9	Foam ability	Foam volume 100ml at 5 minutes
10	Irritability	Non-irritant

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VII. EFFECT OF GREEN TEA ON SKIN ALIMENTS



VIII. HOW TO USE?



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IX. RESULT



X. FORMULATION COMPARISON AND PURPOSE

Comparison	Purpose
F1 vs F2 vs F3	Identify the best balance of exfoliation and moisturization
Green-tea formulation formulation vs base	Determine the specific contribution of green tea
Herbal scrub vs commercial scrub	Compare sensory and physicochemical properties
Different green tea concentrations	Establish the optimum concentration
Different particle sizes	Determine the least irritating exfoliant size
Preserved formulation Vs non-preserved	Evaluate the effect of preservation on shelf life

XI. TEST PARAMETERS

1. Standardization:

• Convert all ingredients to percentages or weight/weight concentrations.
• Specify the exact unit of rose water.
• Use standardized green tea powder with known moisture content and polyphenol concentration.
• Define the particle size of rice, moong dal, orange peel, and sandalwood powders.
• Establish a fixed total batch size, such as 50 g or 100 g. [9,11]

2. Physicochemical Evaluation:

The selected formulations should be tested for:

• Appearance and colour
• Odour
• pH
• Homogeneity
• Spreadability
• Washability
• Viscosity
• Grittiness and particle size

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- Moisture content
- Phase separation
- Short-term and long-term stability

3. Green Tea Analysis:

Future studies may measure:

- Total polyphenol content
- Catechin content
- EGCG concentration
- Antioxidant activity
- Stability of green tea compounds during storage
- Effect of light, temperature, and pH on the formulation.

4. Safety Testing:

Before consumer use, the product should be evaluated through:

- Patch testing
- Skin-irritation testing
- Sensitization testing
- Microbial limit testing
- Preservative-efficacy testing
- Compatibility testing .

XII. FUTURE SCOPES

Future research can improve this work by developing a standardized formulation, evaluating its physical and chemical properties, and comparing the three batches using controlled laboratory and user studies. Future work should describe the scope and limitations clearly because these guide researchers toward practical and non-repetitive studies. The future scope of herbal green tea–based facial scrubs is strong and multidimensional, spanning market growth, formulation innovation, sustainability, and clinical validation. Driven by rising demand for natural, eco-friendly skincare and the well-documented antioxidant and anti-inflammatory properties of green tea (Camellia sinensis), these products are positioned for continued research, product development, and commercial expansion. [19,20]

1. Market and Consumer Trends
2. Research and Clinical Validation Needs
3. Sustainability and Regulatory Scope
4. Commercial and Entrepreneurial Opportunities
5. Safety and Irritation Profiling
6. Advanced Delivery Systems
7. Stability and Shelf-life Research
8. In-vitro and In-vivo Efficacy Studies
9. Multifunctional Scrub Formulation

XIII. INFERENCES DRAWN

Based on the formulation table and preparation procedure, the following inferences can be made:

1. The herbal green tea face scrub combines physical exfoliants, botanical ingredients, humectants, clay, and gel-based materials in one formulation. Rice powder and moong dal powder are the main exfoliating ingredients. Their quantities increase from F1 to F3, indicating that F3 is expected to provide stronger exfoliation.

2. Green tea powder is highest in F3 at 0.75 g. Therefore, F3 may provide a greater contribution from green-tea-derived antioxidant compounds, although this must be confirmed through laboratory testing.

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3. Honey, glycerin, and aloe vera gel increase progressively from F1 to F3. This suggests that F3 may have greater moisturizing potential and a softer paste consistency.
4. Multani mitti also increases from F1 to F3, so F3 may have greater oilabsorbing capacity.
However, it may feel drying on dry or sensitive skin. F2 contains the highest amount of sandalwood powder but the lowest amount of green tea and orange peel powder. I t may therefore offer stronger fragrance and a more balanced intermediate formulation.
5. F1 contains lower quantities of most ingredients and may be less viscous and less abrasive than F3.
6. The formulations are suitable for preliminary cosmetic investigation, but the table alone
cannot prove effectiveness, safety, anti-ageing activity, acne treatment, or skin-lightening effects.
7. The measured quantities use both grams and millilitres. Therefore, the ingredients cannot be accurately totalled unless their densities are known. Rose water is recorded only as "0.5" in the supplied table. Its unit must be specified to ensure reproducibility.
8. Scientific inference should be limited to the population, conditions, and measurements used in the study; observed formulation differences alone do not establish causation or clinical effectiveness. [8,9,11]

XIV. CONCLUSION

This review shows that herbal green tea facial scrubs are a promising, science-backed alternative to harsh synthetic exfoliants. Studies on green tea and herbal scrub formulations suggest that these products can gently remove dead skin cells while also providing antioxidant, anti-inflammatory, and oil-controlling benefits, mainly due to catechins like EGCG. Users often report cleaner, less oily skin, fewer blackheads, and a fresher look, with good tolerance across normal, oily, and dry skin when the product is well formulated.
At the same time, the existing research has clear limitations. Many studies are small, short -term, or use different methods, making it hard to compare results. There is still limited strong clinical evidence directly linking the antioxidant action of green tea in scrubs to long-term anti-aging or acne control. Key questions remain about how stable catechins are in these products, what extract concentrations work best, how exfoliant particle size and shape affect safety, and how green tea interacts with other active ingredients. More advanced delivery systems may be needed to help these compounds penetrate the skin effectively and stay active over time.
Overall, herbal green tea scrubs fit well into today's trend toward natural, multifunctional, and environmentally friendly skincare. To move from traditional or preliminary evidence to truly evidence-based products, future work should focus on better-designed lab and clinical studies, thorough stability and safety testing, and smarter formulations that maximize benefits while minimizing irritation. Filling these gaps will strengthen the scientific foundation for green tea–based scrubs and support their development as safe, effective options for a wide range of skin types. [1,2,5,17,18]

REFERENCES

1. I..Katiyar SK, Ahmad N, Mukhtar H. Green tea and skin. Archives of Dermatology. 2000;136(8):989–994. doi:10.1001/archderm.136.8.989.
2. Katiyar SK. Skin photoprotection by green tea: antioxidant and immunomodulatory effects. Current Drug Targets—Immune, Endocrine & Metabolic Disorders. 2003;3(3):234–242. doi:10.2174/1568008033340171. Green tea polyphenols have been studied for antioxidant, anti-inflammatory, and UV-protective effects on skin.
3. Elmets CA, Singh D, Tubesing K, Matsui M, Katiyar S, Mukhtar H. Cutaneous photoprotection from ultraviolet injury by green tea polyphenols. Journal of the American Academy of Dermatology. 2001;44(3):425–432. doi:10.1067/mjd.2001.112919.
4. Katiyar SK, Matsui MS, Mukhtar H. Kinetics of chemopreventive effects of green tea polyphenols on UVB-induced inflammatory responses of SKH-1 hairless mouse skin. Carcinogenesis. 2000;21(3):433–438. doi:10.1093/carcin/21.3.433.

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5. Hsu S. Green tea and the skin. Journal of the American Academy of Dermatology. 2005;52(6):1049–1059. doi:10.1016/j.jaad.2004.12.044.
6. Chiu AE, Chan JL, Hamilton T, et al. Vitamin C esterified to a protein significantly improves skin appearance in a randomized, double-blind, placebo-controlled study. Journal of Drugs in Dermatology. 2005;4(4):449–454.
7. Draelos ZD. The science behind skin care: moisturizers. Journal of Cosmetic Dermatology. 2018;17(2):138–144. doi:10.1111/jocd.12490.
8. Draelos ZD. Cosmetic dermatology: products and procedures. 2nd ed. Chichester: Wiley-Blackwell; 2016.
9. Barel AO, Paye M, Maibach HI, editors. Handbook of Cosmetic Science and Technology.
4th ed. Boca Raton: CRC Press; 2014.
10. Harry RG. Harry's Cosmeticology. 8th ed. New York: Chemical Publishing Company; 2000.
11. Sharma PP. Cosmetics—Formulation, Manufacturing and Quality Control. 4th ed. New Delhi: Vandana Publications; 2008.
12. Draelos ZD. Cosmetic dermatology: products and procedures. In: cosmetic formulation and skin-care product evaluation. New York: Wiley; relevant edition should be cited according to the copy consulted.
13. Katiyar SK, Mantena SK, Meeran SM. Tea polyphenols in the prevention of UVB-induced skin cancer. International Journal of Oncology. 2008;33(5):927–936.
14. Nichols JA, Katiyar SK. Skin photoprotection by natural polyphenols: anti-inflammatory, antioxidant and DNA repair mechanisms. Archives of Dermatological Research. 2010;302(2):71–83. doi:10.1007/s00403-009-1001-3. Natural polyphenols, including
green-tea constituents, have been investigated for reducing oxidative and UV-related skin damage. □
15. Camouse MM, Counil MP, Caesar H, et al. Repetitive exposure to suberythemal doses of solar simulated radiation induces a protective effect against UV-induced erythema. Photochemistry and Photobiology. 2009;85(3):829–835.
16. Ahmad N, Mukhtar H. Green tea polyphenols and cancer: biological mechanisms and practical implications. Nutrition Reviews. 1999;57(3):78–83.
17. Rasool S, Ahmad M, Masood S, et al. Green tea catechins and skin health: current evidence and future perspectives. Nutrients. 2024;16(24):4218. Green tea catechins, especially EGCG, are associated with antioxidant and potential photoprotective activity in skin research. □
18. Aleksandar N, Stojanović S, et al. Great green tea ingredient? A narrative literature review on epigallocatechin gallate and its biophysical properties for topical use in dermatology. Phytotherapy Research. 2020. doi:10.1002/ptr.6572. This review discusses EGCG stability, cosmetic compatibility, and topical dermatological applications.
19. Działo M, Mierziak J, Korzun U, Preisner M, Szopa J, Kulma A. The potential of plant phenolics in skin care and cosmetology. International Journal of Molecular Sciences. 2016;17(2):160. doi:10.3390/ijms17020160.
20. Ribeiro AS, Estanqueiro M, Oliveira MB, Lobo JMS. Main benefits and applicability of plant extracts in skin care products. Industrial Crops and Products. 2015;77:827–844. doi:10.1016/j.indcrop.2015.09.058