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Formulation and Evaluation of Herbal Anti-Acne Face Wash from Curry Leaves and Activated Charcoal.

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ABSTRACT:

This research paper explores the formulation of a herbal face wash utilizing curry leaves and charcoal powder, enriched with various natural ingredients known for their skincare benefits. The taxonomical classification and chemical constituents of curry leaves reveal their diverse therapeutic properties, including antioxidant protection, anti-inflammatory effects, and antimicrobial activity, contributing to healthier skin. Charcoal powder complements this by providing deep cleansing, exfoliation, and oil-balancing benefits, enhancing skin clarity. Through a systematic formulation method, incorporating additional excipients such as honey, glycerin, and xanthan gum, a stable and effective product is achieved, catering to sensory preferences.

Evaluation tests, including washability, foaming ability, and spreadability, attest to the efficacy and user-friendliness of the herbal face wash. Organoleptic evaluation confirms desirable characteristics such as color, odor, consistency, and homogeneity. This formulation represents a harmonious fusion of traditional botanical wisdom and modern cosmetic science, offering consumers a natural and effective skincare solution.

Further research and clinical studies may uncover additional benefits and applications of this herbal formulation, promising widespread adoption in the skincare industry.

Introduction:

In recent years, the cosmetic industry has witnessed a paradigm shift towards embracing natural ingredients for skincare formulations. This transition is not merely a trend but a reflection of a growing consciousness among consumers regarding the benefits of herbal remedies and their potential to enhance skin health. Among the plethora of botanical extracts gaining prominence, curry leaves and activated charcoal have emerged as potent contenders owing to their inherent therapeutic properties.

Curry leaves (Murraya koenigii) have been an integral part of traditional medicine systems such as Ayurveda for centuries. Renowned for their rich antioxidant content, curry leaves possess the ability to combat oxidative stress and mitigate the damage caused by free radicals, thereby promoting skin rejuvenation and vitality. Furthermore, their anti-inflammatory and antimicrobial properties make them an ideal candidate for addressing various dermatological concerns ranging from acne to premature aging.

Activated charcoal, derived from carbon-rich sources such as coconut shells or wood, has garnered widespread acclaim for its exceptional ability to absorb toxins and impurities from the skin. Its porous structure enables effective removal of excess sebum, pollutants, and other contaminants, making it a staple ingredient in skincare formulations targeting deep cleansing and detoxification. Moreover, activated charcoal's gentle exfoliating action helps unclog pores and refine skin texture, imparting a revitalized and luminous complexion.

The amalgamation of curry leaves and activated charcoal in the formulation of a herbal face wash represents a synergistic approach towards achieving comprehensive skincare benefits. By harnessing the complementary properties of these natural ingredients, it is envisaged to develop a formulation that not only cleanses the skin but also nourishes, rejuvenates, and protects it from environmental aggressors. Moreover, the utilization of herbal extracts aligns with the growing consumer preference for sustainable and eco-friendly skincare solutions, devoid of harsh chemicals and synthetic additives.

This research endeavors to explore the formulation of a herbal face wash incorporating curry leaves and activated charcoal, evaluating its efficacy in cleansing, purifying, and revitalizing the skin. Through meticulous experimentation and analysis, the aim is to elucidate the potential of this botanical blend in meeting the evolving demands of modern skincare, while also shedding light on the traditional wisdom that underpins its efficacy.

In essence, this study endeavors to bridge the realms of tradition and innovation, offering insights into the formulation of herbal skincare products that resonate with the ethos of holistic wellness and sustainability. As we delve deeper into the realm of natural remedies, the journey towards healthier, radiant skin is illuminated by the profound wisdom of nature's bounty.

Materials:

Curry plant:

Fig No.1: Curry plant (*murraya koenigii.)*

Taxonomical classification:

- **Kingdom**: *Plantae*
- **Order:** *Sapindales*
- **Family:** *Rutaceae*
- **Genus:** *Murraya*
- **Species:** *Murraya koenigii*

Biological source:

The leaves of trees belonging to the genus *murraya*, with the specie being *murraya koenigii*.

Chemical constituent:

The curry leaf plant contains various chemical constituents in different parts:

- **Leaves:** Alkaloids, carotenoids, flavonoids, essential oils (β-caryophyllene, α-pinene, limonene), triterpenes (lupeol).
- **Roots:** Carbazole alkaloids (girinimbine, mahanine), triterpenes (girinimbin, isomahanine), essential oils
- **Seeds:** Carbazole alkaloids, triterpenes, proteins.

Uses:

Curry leaves in herbal face wash provide antioxidant protection, soothe inflammation, combat acne-causing bacteria, nourish the skin, and offer a delightful aroma, enhancing both the formula's efficacy and user experience.

Excipients and uses:

Sr. No.	**Ingredients**	**Uses**

1	Charcoal powder	Deeply cleanses pores, exfoliates gently, fights acne, balances oily skin, and enhances overall complexion, providing a clear, refreshed, and healthier appearance.
2	Honey	Hydrating humectant, fights acne-causing bacteria, gently exfoliates, provides antioxidant protection, and soothes inflammation, resulting in clearer, smoother, and healthier-looking skin.
3	Rose water	Vehicle
4	Sandalwood oil	Fragrance
5	Glycerin	Emulsifying agent
6	Xanthum gum	Thickening agent
7	Methyl paraben	Preservtive
8	Propyl paraben	Preservtive
9	SLS	Foaming agent
10	Carbopol	Moisturizing agent
11	Red lentil flour	gentle exfoliation, oil control, anti-inflammatory effects, nourishment, and brightening

Table No. 1: Excipients and their uses

Method:

a) Collection, identification and processing of plant:

The leaves of trees belonging to the genus *murraya*, with the main species being *Murraya koenigii* were collected from the medicinal plant garden of Shri amolak jain vidya prasarak mandal, kada. Leaves were cleaned & dried in the shade. Powdered drug material was sieved through the mesh. And the powder was subjected for further study.

b) Extraction:

The curry leaves powder was extracted with water by cold pressing. Then filter

c) Formulation of herbal face wash:

Procedure:

1) All the ingredients are sieved in sieve no.80 & weighed in above given quantity.
2) After that the curry and charcoal powder were added also with the addition of sandalwood oil.
3) Addition of honey & glycerine is done.
4) Atlast the rose water is added to make up quantity upto 50ml.
5) Afterwards the mixture is stirred in magnetic stirrer to obtain uniform mixing & of formulation

Formulation Table of herbal face wash:

Sr. No.	**Ingredients**	**Formulation 2 (ml)**	**uses**
1	Curry extract	2.5	antioxidant protection, soothe inflammation, combat acne-causing bacteria, nourish the skin, and offer a delightful aroma
2	Charcoal powder	1.25	Deeply cleanses pores, exfoliates gently, fights acne, balances oily skin, and enhances overall

			complexion, providing a clear, refreshed, and healthier appearance.
3	Honey	2.5	Hydrating humectant, fights acne-causing bacteria, gently exfoliates, provides antioxidant protection, and soothes inflammation, resulting in clearer, smoother, and healthier-looking skin.
4	Rose water	Q.S.	Vehicle
5	Sandalwood oil	0.2	Fragrance
6	Glycerin	5	Emulsifying agent
7	Xanthum gum	0.5	Thickening agent
8	Methyl paraben	0.05	Preservtive
9	Propyl paraben	0.03	Preservtive
10	SLS	1.05	Foaming agent
11	Carbopol	0.5	Moisturizing agent
12	Red lentil flour	1.5	gentle exfoliation, oil control, anti-inflammatory effects, nourishment, and brightening

Table No. 2:

Formulation Table of herbal face wash.

Evalution test:

Washablity:

To test the washability of a face wash, first, choose a clean, dry area of skin for the test. Apply a small amount of the face wash as directed on the product label and massage it into the skin gently for the recommended duration. Rinse the area thoroughly with lukewarm water, then assess for any residue or tightness on the skin. Check for any signs of irritation or redness. Repeat the process for each face wash being tested and compare the results to determine which product performs best in terms of washability and skin compatibility. Always discontinue use if any adverse reactions occur and seek advice from a dermatologist if needed.

Foaming ability:

To test the foaming ability of a face wash, wet your hands with lukewarm water and apply a small amount of the product. Rub your hands vigorously to create lather and assess the density, richness, and stability of the foam produced. Note how long the foam lasts and how well it spreads across the skin. Repeat the process for each face wash being tested and compare the results to determine which product meets your preferences. Keep in mind that foaming ability is just one aspect to consider, alongside cleansing efficacy, skin compatibility, and fragrance.

Spredability test:

To conduct a spreadability test for a face wash, dispense a small amount onto your fingertips and apply it evenly across a designated area of skin. Assess how easily and smoothly the product spreads, covering the intended surface area without excessive effort. Note any resistance or drag during application and evaluate the consistency of coverage. Repeat the process for each face wash being tested and compare results to determine which product offers the best spreadability. Remember to consider other factors such as cleansing efficacy, foaming ability, and skin compatibility when making your final decision.

Result:

Evaluation of Performance:

Types of evaluation	**Parameter**	**Observation**
Performance Evaluation	Washability	Washable
	Foamability	Foam appears
	Spreadabillity	Pass

Table No. 3: Evalution of performance

Organoleptic evaluation:

Table No. 4: Organoleptic evaluation.

Types of evaluation	Parameter	Observation
Organoleptic Evaluation	Colour	Blackish green
	Odour	Characteristic
	Consistency	Gel like consistency
	Homogeneity	Uniform

Conclusion:

The formulation of a herbal face wash containing curry leaves and charcoal powder presents a promising blend of natural ingredients with significant potential for skincare. The taxonomical classification and chemical constituents of curry leaves highlight their diverse therapeutic properties, including antioxidant protection, anti-inflammatory effects, and antimicrobial activity, all of which contribute to healthier and revitalized skin. Charcoal powder, on the other hand, offers deep cleansing, exfoliation, and oil-balancing benefits, enhancing the overall complexion and clarity of the skin. The formulation method, incorporating various excipients such as honey, glycerin, and xanthan gum, ensures a stable and effective product with desirable sensory characteristics.

Evaluation tests, including washability, foaming ability, and spreadability, demonstrate the efficacy and user-friendliness of the herbal face wash. Organoleptic evaluation confirms the desirable characteristics of the product, including its color, odor, consistency, and homogeneity.

Overall, the formulation of this herbal face wash represents a harmonious fusion of traditional botanical wisdom and modern cosmetic science, offering consumers a natural and effective solution for skincare needs. Further research and clinical studies may provide additional insights into the specific benefits and applications of this herbal formulation, paving the way for its widespread adoption in the skincare industry.

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