Development of Herbal Soap for Effective Cleansing and Skin Moisturizing

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ABSTRACT

The growing demand for natural skincare products has spurred interest in developing herbal soaps that effectively cleanse and moisturize the skin. This study aimed to formulate and evaluate herbal soaps with these dual functionalities. The research explored the use of various carrier oils, known for their cleansing properties, alongside herbal extracts with established moisturizing and skin-soothing benefits. The formulation process likely involved a selection method, such as cold process or melt-and-pour, followed by the incorporation of chosen herbal ingredients. The evaluation then focused on the soap's physicochemical properties, including pH, moisture content, foaming ability, and lather stability. Additionally, the study might have assessed the cleansing efficacy through tests that measure soil removal or oil absorption. Skin moisturizing potential could be evaluated using corneometry, a technique that measures skin hydration. Furthermore, the research may have explored the in-vitro antimicrobial activity of the herbal soap against common skin pathogens. Finally, user trials could be conducted to assess subjective parameters like skin feel, comfort, and overall satisfaction with the herbal soap. By combining these formulation and evaluation techniques, the study aimed to develop an herbal soap that offers a gentle cleansing experience while promoting healthy, moisturized skin.

Keywords: Natural skincare products, Herbal soap, Moisturizing.

1. **INTRODUCTION**

Consumers are increasingly seeking natural and effective alternatives in the realm of skincare, leading to a growing interest in herbal soaps [1]. These botanical-based cleansers are formulated with plant-based ingredients, offering a potential advantage over conventional soaps that may contain harsh chemicals which can disrupt the skin's natural barrier [2]. This study explores the formulation and evaluation of herbal soap, specifically focusing on its ability to function as both an effective cleanser and a skin moisturizer. By incorporating specific herbs and botanical extracts with scientifically proven cleansing and moisturizing properties, the goal is to develop a soap that provides a gentle yet thorough cleaning experience while promoting healthy, hydrated skin [3, 4]. The evaluation process will assess various factors such as pH, foaming ability, and moisture content to ensure the formulated soap meets the desired criteria for user satisfaction and efficacy [5]. This research contributes to the growing body of knowledge on natural skincare options and aims to provide valuable insights into the potential of herbal soaps for maintaining clean and healthy skin.

1. **MATERIAL AND METHODS**

   1.1 **MATERIALS**

   The factory material which are used in the expression of the herbal cleaner were collect from ranch house at Bhilai, Chhattisgarh. Because natural products have a great medical value, they may be used to treat virtually any disease, including skin conditions. Herbal products have demonstrated their affordability, availability, and felicity for skin for colorful expression. The active constituents that give these medical benefits are separated and used to treat skin affiliated conditions as poultices, detergents, and ointments.

   1.2 **PHARMACOGNOSTICAL PROFILE OF ACTIVE INGREDIENTS**

Table no. 1: Pharmacognostical profile of active ingredients

S.N.	Name	Biological source	Chemical constituents	Uses	References
1	Tulsi	Ocimum tenuiflorum	Flavonoids, Volatile oils, Phenolic compounds	Boosts immunity, Stress and anxiety, Wound healing	[6]
2	Aloevera	dried latex of leaves of it, Curaçao aloe	Vitamins: A, C, E, B12, folic acid Minerals: calcium, Enzymes	Sunburns Minor cuts and scrapes Eczema Psoriasis Acne	[7]

3	Reetha	Sapindus mukorossi tree	flavonoids, alkaloids, and tannins.	natural surfactant, cleansing properties, detergent	[8]
4	Coconut oil	Cocos nucifera	Coconut meat, Coconut water, Coconut oil	Coconut oil is used in soaps, cosmetics, and biofuels.	[9]
5	Pepper mint	Pepper mint	(Mentha piperita L, limonene, cineole, and pulegone	Aromatherapy, Culinary,	[10]

2.3 SOAP BASE FORMULATION:

Table no 2: List of soap base ingredient

S. N.	Ingredients	Quantity	Activity
1.	Tulsi	9ml	Antibacterial,antiviral
2.	Aloevera	25gm	Moisturizing,soothing
3.	Reetha	5ml	Surfactant
4.	Coconut oil	70ml	Moderation
5.	Papar mint	5.5ml	Cooling Properties
6.	Sodium hydroxide	15gm	Lye
7.	Glycerin	20ml	Humectants
8.	Triethanolamine	9ml	Thick paste, transparency
9.	Stearic acid	1.8gm	Hardening
10.	Ethanol	2ml.	Solvent
11.	Soft praffine	0.8ml	Emollient
12.	Distilled water	q.s.	Solvent

COLD PROCESS METHOD

For soap base formulation, first take 75 ml coconut oil in 500ml beaker. Placed it on the water bath and maintain the temperature about 45-50C.

Then add this to NaOH (15.gm) for a lye and 100 ml water and continuously stirr for a10 min.

Then 20 ml glycerin as a humectant, 0.7 gm soft paraffin as a emollient, and 9ml Triethanolamine for a thick paste was added with continuously stir.

Solution with continuously agitation for 20-30 min molten mixture become homogeneous.

Then pour the solution into mold and kept it for cool. After the cool down, take out the soap base from the mold.

Fig 1 Herbal Soap

2.4 PROCEDURE FOR POLYHERBAL SOAP

Step 1:   The prepared basic glycerin soap base was broken down into small pieces and put into the pan and melted on the water bath below 60 o C.

Step 2:   To create a homogeneous liquid, the water phase elements were weight and combined while being stirred continuously at 75C.

Step 3:   All the herbal ingredients tulsi oil & reeath and, aloevera and   was taken and added to the mixture with continuously stir.

Step 4:   1.8gm stearic acid for hardening 2ml ethanol as a solvent, and pepper mint as per required for perfume was added to the mixture and stir continuously helped the soap achieve a consistent dispersion of the ingredients.

Step 5:   Then the soap foundation is poured into the appropriate soap mold, which is then kept at room temperature and assessed.
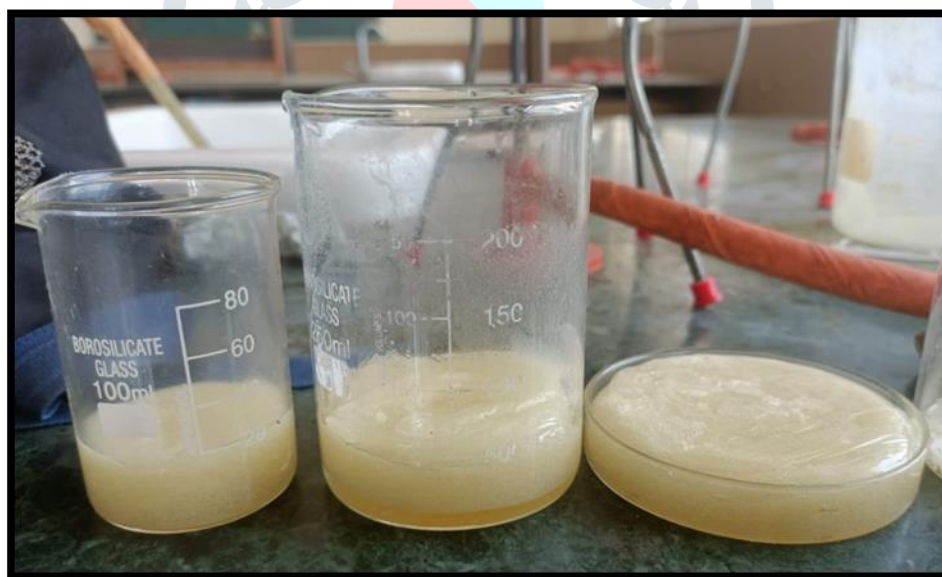

Fig - **2** Formulated herbal soap

3. EVALUATION

3.1 PHYSICAL PARAMETER -The prepared soap formulations were inspected visually for their color, odor and appearance

3.2 pH - The pH was measured of formulated herbal soap, using a digital pH meter.

Fig -3 Digital pH meter

3.3 Foam Height

0.5 gram of prepared soap were dissolved in 100 ml of distilled water, and the remaining 50 ml were added to the 100 ml measuring cylinder. measured the height of the foam using 25 strokes above the aqueous volume.
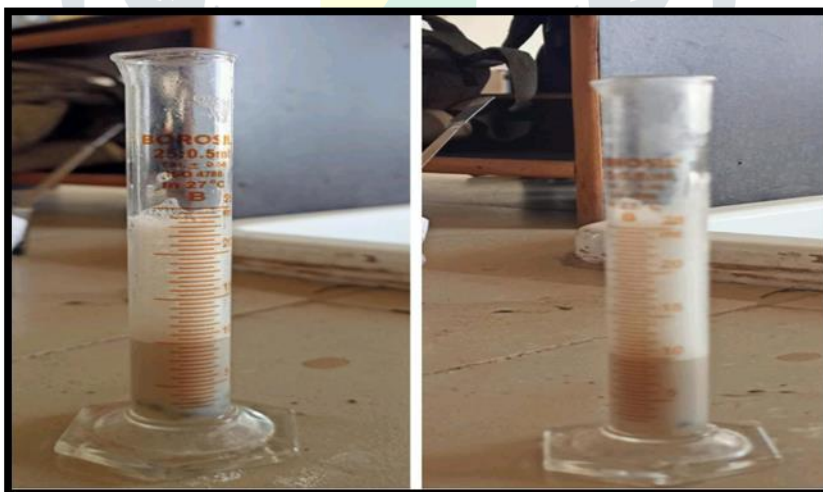

Fig.4- Foam height of formulated herbal soap

3.4 Solubility

Add 10 ml of solvent to 2 gm of soap, shake for 2 minutes, and observe the solubility result.

Fig 5 - Solubility

RESULT AND DISCUSSION

Table 3 Result parameter of formulated herbal soap

S. No.	Parameter	Result
1.	Color	White
2.	Odor	Aromatic
3.	Average weight	63 gm
4.	pH	9.32
5.	Solubility	Soluble
6.	Foam height	31cm
7.	Foam retention	5 minutes
8.	Irritation	Nil

The above given table describes the color, odor shape, pH, irritation, foam height and foam retention of the poly herbal soap. The color of all the f formulation were white. The odor of all the formulation was aromatic. The shape of all the formulation was oval. As per evaluation test formulation is may be the most standard formulation compared to other formulation because the pH of formulation is 9.23 which is likely close to skin pH and there is no irritation beside foam retention and foamability of Soap is may be much better than other formulations.

CONCLUSION

In conclusion, formulating herbal soap presents a unique opportunity to create a product that effectively cleanses while also offering moisturizing benefits. By incorporating various plant-based ingredients with cleansing and skin-nourishing properties, herbal soaps can potentially address the needs of those seeking a more natural approach to skincare. Evaluating these soaps for factors like pH, lather, and moisturizing ability is crucial for ensuring a pleasant and beneficial user experience. Further research on the optimal combinations of carrier oils, herbal extracts, and essential oils can lead to the development of even more effective and targeted herbal soap formulations for a wider range of skin types and concerns. As the demand for natural skincare products continues to rise, exploring and perfecting the art of herbal soap formulation holds great promise for the future of personalized and gentle cleansing routines.

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