

Formulation and Evaluation of Poly-Herbal Body wash

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Abstract—This abstract presents the formulation and evaluation of a poly-herbal body wash designed to enhance personal hygiene using natural ingredients. The formulation utilizes extracts of dragon fruit, neem, and aloe vera, known for their antimicrobial, antioxidant, and skin-soothing properties. Additional components like castile soap and glycerin ensure effective cleansing and moisturization. The body wash was evaluated for its physicochemical properties, stability, foamability, and skin irritation potential. The results confirmed the product's safety and effectiveness for daily skincare.

Keywords—Dragon fruit, Neem, Aloe vera, Herbal Body Wash, Natural cosmetics, Antioxidants, Antimicrobial.

I. INTRODUCTION

Skin is the largest organ of the body, essential for protection, regulation, and sensation. With rising

Composition of 50 ml Herbal Body Wash

Sr. No.	Ingredient	Quantity	Role
1	Dragon Fruit Extract	5 ml	Antioxidant, skin protection
2	Aloe Vera Extract	1 ml	Soothing, antimicrobial
3	Neem Extract	1 ml	Healing, anti-inflammatory
4	Castile Soap	10 ml	Natural surfactant, cleansing
5	Cocamidopropyl Betaine	15 ml	Foaming, skin conditioning
6	Glycerin	5 ml	Moisturizing agent
7	Orange Oil	0.5 ml	Fragrance
8	Xanthan Gum	0.5 g	Thickening agent
9	Citric Acid	0.3 g	pH adjuster
10	Sodium Benzoate	0.5 g	Preservative
11	Food Color	1 drop	Aesthetic
12	Purified Water	q.s.	Vehicle

Preparation Method:

- In 55 ml of purified water, 0.5 g xanthan gum was dispersed and stirred.
- Glycerin, surfactants (Castile soap, cocamidopropyl betaine), and extracts were added sequentially.
- Orange oil and food color were added for fragrance and appearance.

awareness around harmful effects of synthetic skincare products, the preference for herbal and natural cosmetics has significantly increased. Body wash, an essential hygiene product, when formulated with herbal ingredients, offers dual benefits of cleansing and skin nourishment. This study focuses on formulating a gentle, effective, and eco-friendly body wash using natural plant-based ingredients like dragon fruit, neem, and aloe vera.

II. EXPERIMENTAL METHOD

Dragon fruit pulp was chopped and boiled in water for 10–15 minutes, cooled, and filtered. Dried leaves of neem and aloe vera were powdered and macerated in a water-rose water mixture for 5 days. All extracts were filtered and used in formulation.

III. FORMULATION METHOD

- Citric acid adjusted the pH; sodium benzoate preserved the formulation.
- Mixture was kept at room temperature to stabilize.

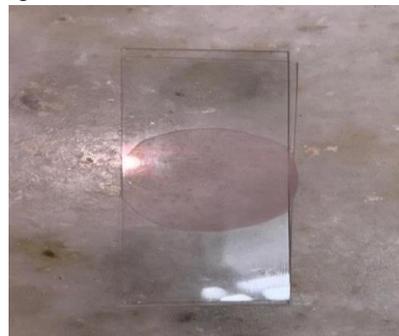
IV. EVALUATION PARAMETERS

Physical Evaluation:

- In this test body wash was observed for colour, odour, texture, etc.
- Color: pink
- Odour: pleasant
- Texture: smooth
- pH- 5.06



- Where m= weight applied to the upper slide(100)
- o l= length moved on the slide(3cm)
- o t= time taken (30sec)
- o $S = m \times l/t$
- o $= 100 \times 3/30$
- o $= 10 \text{g.cm/s}$



Viscosity test:

- Viscosity of gel was determined using Brookfield viscometer.



Foam height :

- A small quality of gel wash added to water in a measuring cylinder. After recording the total volume of the foam content after 1 minute shaking were recorded.



Spreadability test-

- The test of spreadability involved of applying the product (at room temperature) repeatedly onto a glass slide to visually observe the uniformity in the formation of the protective layer. $S = m \times l/t$

Formulation of body wash:

No	Ingredient	Formulation		
		F1	F2	F3
1	Dragon fruit	0.10ml	5ml	10ml
2	Aloe vera	0.20ml	1ml	2ml
3	Neem	0.25ml	1ml	2ml
4	Cocamidopropyl betain	3.75ml	15ml	20ml
5	Castile soap liquid	2.5ml	10ml	20ml
6	Glycerin	1.25ml	5ml	10ml
7	Purified Water	10ml	50ml	110ml
8	Orange oil	0.125ml	0.5ml	1ml
9	Xanthan gum	0.3gm	0.5gm	0.8gm
10	Citric acid	0.06gm	0.3gm	0.4gm
11	Sodium benzoate	0.125gm	0.5gm	1gm
12	Food color	1 drop	1 drop	1drop



The body wash was evaluated using several tests including physical characteristics, viscosity, spreadability, stability, foamability, and skin irritation.

Sr. No.	Parameter	Result
1	Colour	Carnation Pink
2	Odour	Pleasant
3	Texture	Smooth
4	State	Liquid
5	pH	6.03
6	Skin Irritation	No irritation
7	Foamability	Good

Viscosity: Evaluated using Brookfield viscometer.

Spreadability: $S = m \times l / t = 10 \text{ g-cm/s}$

Stability: No phase separation or color change observed after 1 week.

Foam Height: Maintained stability after shaking.



V. RESULT AND DISCUSSION

The formulated poly-herbal body wash demonstrated excellent physical characteristics such as pleasant aroma, appealing pink color, and smooth texture. The pH was within the skin-friendly range of 5–6.5, indicating its compatibility for frequent use. Dragon fruit's antioxidant activity, combined with the antibacterial and healing effects of neem and aloe vera, provided effective skin protection and cleansing. The product did not cause any irritation and retained its consistency and performance under normal storage conditions. This confirms the

formulation's suitability for commercial application as a natural body wash.

VI. CONCLUSION

This study successfully developed and evaluated a poly-herbal body wash utilizing dragon fruit, neem, and aloe vera extracts. The formulation was designed with mild surfactants and natural ingredients to ensure skin safety, moisturization, and effective cleansing. Its natural pink color and pleasant aroma enhance user appeal. The results confirm that the herbal body wash is safe for routine use and aligns with consumer demand for natural, chemical-free personal care products.

REFERENCES

- [1] Pandey G. et al., Effect of Extraction on Beetroot Antioxidant, Plant Archives, 2018.
- [2] Maheshwari R. et al., Invigorating efficacy of Cucumis sativus, Int. J. Chem. Pharmaceut. Sci., 2014.
- [3] Falbe J., Surfactants in Consumer Products: Theory Technology and Application, Springer Science, 2012.
- [4] Simpson E. et al., Safety and Tolerability of a Body Wash in Infants, Pediatric Dermatology, 2012.
- [5] S. C. Dasilva, R. P. Sahu, R. L. Konger, S. M. Perkins, M. H. Kaplan, J. B. Travers. Arch. Dermatol. Res.304, 65 (2012).
- [6] J. Falbe, Surfactants in Consumer Products: Theory Technology and Application, Springer Science & Business Media, Berlin, Germany, 2012
- [7] Feng L., Hawkins S., Lipid-rich Moisturizing Body Wash, J Clin Aesthet Dermatol, 2011.
- [8] The European Cosmetic, Toiletry and Perfumery Association (Colipa). Guidelines on stability testing of cosmetic products. (2007).
- [9] T. Kalantar, C. Tucker, A. Zalusky, T. Boomgaard, B. Wilson, M. Ladika, M. Jordan, S. Li, X. J. Zhang. J. Cosmet. Sci.58, 375 (2007).
- [10] L. Rhein and M. Schlossman, Surfactants in Personal Care Products and Decorative Cosmetics, Taylor & Francis Group, Boca Raton, FL, USA, 3rd edition, 2006.
- [11] M. S. Showell, Handbook of Detergents. Part D: Formulations, Taylor & Francis Group, Boca Raton, FL, USA, 2006.

- [12] Rhein L., Schlossman M., Surfactants in Personal Care Products and Decorative Cosmetics, Taylor & Francis, 2006.
- [13] T. Polefka. "Surfactants interaction with skin", in Handbook of Detergents. Part A: Properties. Surfactant Science Series, G. Broze (Eds.), p. 82. Marcel Dekker Publications, New York (1999).
- [14] Polefka T., Handbook of Detergents. Marcel Dekker Publications, 1999.
- [15] Dominguez J.G. et al., Amphoteric Surfactants on Skin Irritation, Int J Cosmetic Sci., 1981.