IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Formulation And Evaluation of Facial Cleansing Stick

[1]Mr.Vallimanalan B,[2] Safeera K A, [3]Athira V K, [4]Anika K, [5]Aswathy P N, [6]Fasna mol

[1] Associate Professor, Department of Pharmaceutics, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala,

[2] Student, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala.

[3] Student, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala.

[4] Student, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala.

[5] Student, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala.

[6] Student, Nehru College of Pharmacy, Pampady, Thiruwilvamala, Thrissur, Kerala.

Abstract: Cleansers are designed to remove dirt, sweat, sebum, and other unwanted materials from skin. Normal exfoliation of superficial dead cells is also aided by the cleansing process. The cleanser actives, surfactants, are designed to remove oily materials and drive the cleansing process. The facial cleansing stick is the novel skincare product on the market. It is a solid face cleanser that cleanses the skin by dissolving dirt, oil andmakeup, it also nourishes to leave skin softer. When applying the facial cleansing stick, it gently massages the skin because you need to roll the stick around your skin. Here cleansing stick were prepared and were characterized for ph, physical appearance, spreadability, consistency, washability and antimicrobial test. The result of the formulations shows great washability and cleansing property.

Keywords: Cleanser, surfactant, skincare.

I. INTRODUCTION

The word cosmetics was derived from Greek word “kosmetikos” meaning having the power, arrange, skill in decorating. [1]Cosmeceuticals are topical cosmetic pharmaceutical hybrids intended to enhance the beauty through ingredients that provide additional health related functions or benefits. Among the products included in this definition are skin moisturizers, perfumes, lipsticks, eye and facial makeup preparations, shampoo, permanent waves, deodorants as well as any material for use a component of a cosmetic product. Cleansing sticks are solid and dissolve into creamy suds that help rinse away dirt, oil, impurities and more once paired with water. Due to their compact size, cleansing sticks are extremely portable and can carry without fear of spillage.[2] The normal pH of the skin is between 4.5 and 6.5. When you cleanse your skin, there is an interaction that occurs between the cleanser, the skin’s moisture barrier and the skin’s ph. Most of the environmental impurities and cosmetic products our skin comes in contact with are not water soluble, so washing the skin with water isn’t enough to remove them. Skin cleanser remove dirt, sebum, oil and dead skin cells ideally without damaging or irritating the skin.[3] Cleansing sticks are stored in a twist-up tube and applied directly to the face. Most sticks are meant to be massaged directly onto a damp face in gentle, circular motions.

2.CLEANSING STICK

The facial cleansing stick is a solid face cleanser that cleanses the skin by dissolving dirt, oil and makeup, it also
nourishes to leave skin softer. When applying the facial cleansing stick, it gently massages the skin because you need to roll the stick around your skin. The facial cleansing stick is the novel skincare product on the market. It offers a completely different way of cleansing the skin after a long day out. The market is saturated with various cleansing products such as oils and balms, lighter in texture mousses and of course, the creamy emulsions.[4] Cleansing stick include apricot oil and lavender oil as a main ingredient. Apricot oil is excellent for acne-prone, sensitive or congested skin as well as mature dry skin. It also helps to improve skin tone, maintain softness and radiance of the skin.[5] Lavender oil has antibacterial properties and can prevent acne breakouts.

3.AIM AND OBJECTIVES:

Aim:

The aim of our study is to Formulate and evaluate a Facial Cleansing stick containing Apricot fruit belong to the species Prunus armeniaca L.

Objective:

Preparation of Facial cleansing stick using various composition of Prunus armeniaca, coconut butter, Lawanda. To evaluate the formulated facial cleansing stick for various parameters like Ph, Viscosity, Spreadability, Washability.

4.MATERIALS AND METHOD

Table 1: List of Ingredients

Sl.NO	INGREDIENTS	QUANTITY
1	Apricot oil	3ml
2	Glycerin	11ml
3	Sodium cocoyl isethionate	8g
4	Cocamido propyl betaine	1.5ml
5	Lactic acid	1ml
6	Distilled water	5ml
7	Coconut oil	2ml
8	Lavender oil macerate	1.5ml
9	Stearic acid	2 .5g
10	Bees wax	2.5g
11	Tocopherol	1.5ml
12	Sodium benzoate	0.5%
13	Red manderine essential oil	0.3ml

4.1PREPARATION OF FACIAL CLEANSING STICK

[6]Preparation of facial cleansing stick base various formulation of batches were prepared according to the table. Heat phase a contents such as distilled water, glycerin, sodium cocoylisethionate, cocamido propyl betaine and lactic acid in a beaker to 75-80°c. Phase B contents such as apricot oil, coconut oil, lavender oil macerate, stearic acid, bees wax and tocopherol are heated in a separate beaker at the same temperature. Trickle oil phase into the water phase and stir it. When the temperature of the combined phase is under 70°c, add sodium benzoate and red manderine essential oil. Pour the whole blend into the stick container. Leave the mixture to settle overnight and the preparation were further evaluated.

4.2FORMULATION TABLE

Table 2: Formulation types

Ingredients	F1	F2	F3	F4
Phase A				
Sodium cocoyl isethionate	8g	8g	8g	8g
Glycerine	11 ml	11ml	11ml	11 ml
Distilled water	5ml	5ml	5ml	5ml
Cocamido propyl betaine	1.5g	1.5g	1.5g	1.5g
Lactic acid	1ml	1ml	1ml	1ml
Phase B				
Apricot oil	3ml	3ml	3ml	3ml
Coconut oil	2ml	2ml	2ml	2ml
Lavender oil	1.5 ml	1.5 ml	1.5 ml	1.5 ml
stearic acid	2.5g	3.5g	3g	2.5g
Bees wax	2.5g	3g	4g	3.5g
Tocopherol	1.5 ml	1.5 ml	1.5 ml	1.5 ml
Phase C				
Sodium benzoate	0.5%	0.5%	0.5%	0.5%
Red mandarin essential oil	0.4 ml	0.4 ml	0.4 ml	0.4 ml

5.EVALUATION OF FACIAL CLEANSING STICK

5.1Physical Appearance: The four samples were prepared and their physical appearance was evaluated.

5.2Determination of Ph: The pH of 7.0standard buffers before use and average of triplicates were determined.

5.3Determination of spreadability: The spreadability of test samples was determined using 0.5g test formulation was placed within a circle of 1cm diameter premarked on a glass plate over which a second glass plate was placed. A weight of 500g was allowed to rest on the upper glass plate for 5 minutes. Spreadability refers to the area covered by a fixed amount of sample after the uniform spread of sample on the glass slide. The increase in the diameter due to spreading of the test formulation was noted. Average of four determinations was noted.

5.4Study of stability testing: Samples of cleansing stick was kept in stability chamber at a temperature of 28ºC±2ºC and relative humidity 60±65 RH for one month and the changes obtained if any noted.

5.5Determination of antimicrobial activity: The antimicrobial activity of F1, F2, F3, and F4was evaluated using spread plate method and F4sample has larger zone of inhibition.

5.6Viscosity: Viscosities of different formulations were determined using Brookfield viscometer, spindle 64at 50 rpm and 25degree Celsius. The corresponding viscometer reading was noted accordingly.

5.7Consistency: It was evaluated by applying on the skin or by visual inspection.

5.8Greasiness: It was assessed by directly onto the skin.

5.9Washability: The prepared formulations were applied to the skin and then ease and extend of washing with water were checked manually.

6.RESULT AND DISCUSSION

6.1PHYSICAL PARAMETERS

The prepared facial cleansing stick was evaluated for its colour, and odour it produces characteristic pleasant odour. It is given in table no: 3.

Table 3: Shows result of Physical Parameters

FORMULATION CODE	ODOUR	COLOUR
F1	pleasant	white
F2	pleasant	white
F3	pleasant	white
F4	pleasant	white

6.2DETERMINATION OH PH

The ph of formulation was found to be satisfactory, and in the range of 4.5 to 6.5. Here comparing other formulations F4formulation found to have better ph.

Table 4: Shows results of PH for different formulations.

FORMULATION CODE	PH
F1	6.8
F2	7.01
F3	6.2
F4	6.03

6.3DETERMINATION OF SPREADABILITY

Spreadability can be expressed as, S = m*l/tWhere, m = weight applied to upper slide
L = length moved on the glass slide T = time taken
Here, m = 500gm L = 0.2cm
T = 5min
So spreadability of F4is 20gcm/sec

6.4STABILITY TEST

F4& F3 sample maintains its physical appearance and pH better than F2, F1 for a study period ofone month.

Table 5: Result of Stability test

PARAMETERS	F1	F2	F3	F4
Change in color	Week 2-no change	Week 2-no change	Week 2-no change	Week 2-no change
	Week 4-slight change	Week 4-slight change	Week 4-no change	Week 4-no change
Change in ph.	Week 2-slight change Week 4-slight change	Week 2-no change Week 4-slight change	Week 2-no change Week 4-no change	Week 2-no change Week 4-no change

6.5DETERMINATION OF ANTIMICROBIAL ACTIVITY

The antimicrobial activity has been determined and the activity is shown in table no:6.

Table 6: Shows result of Antimicrobial activity

Test organism	Diameter of the zone of inhibition (mm)			
	F1	F2	F3	F4
p. aeruginosa	9mm	6.2mm	11mm	22mm

6.6VISCOSITY TEST

The viscosity of different formulation was determined using Brookfield viscometer at 50rpm using spindle number 64. The viscosity of F1, F2, F3 and F4 formulation was found to be 21.4cp, 32.8cp, 24.0 and 36.5cps.

6.7CONSISTENCY

The prepared formulation produces solid consistency. This was confirmed by visual observation or by direct application onto the skin.

Table 7: Consistency of different formulations.

FORMULATION CODE	CONSISTENCY
F1	solid
F2	solid
F3	solid
F4	solid

6.8GREASINESS

The prepared formulation F1and F4does not have greasiness upon application on the skin.

Table 8: Result of Greasiness

FORMULATION CODE	GREASINESS
F1	no
F2	yes
F3	yes
F4	no

6.9WASHABILITY

Prepared formulation was easily washed with water.

Table 9: Result of Washability

FORMULATION CODE	WASHABILITY
F1	good
F2	good
F3	good
F4	good

7.SUMMARY AND CONCLUSION

In the present work, it was decided to formulate and evaluate the facial cleansing stick.[13] The cleansing stick was made with apricot oil, lavender oil, sodium cocoyl isethionate, cocamido propyl betaine, glycerin, red manderine oil, lactic acid, stearic acid, beeswax, tocopherol and sodium benzoate. The cleansing stick prepared hasn't produced any sensitive reaction or promote the growth of any microorganisms during the study period. Stability parameters likephysical appearance, texture, nature and odor, pH of the formulation showed that therewere no significant variations during the study period. The prepared formulation of facial cleansing stick showed a proper pH range approximately 6.03 and produced cleansing effect and smoothness to the skin. Hence, this study showed that F4 was the best formulation for cleansing. Thus, the facial cleansing stick purifies pores, scrubs away dullness and effectively cleanses skin. While you're mentally

going through your busy schedule for the day, you can slough away dry, dead skin, remove dirt, oil and other impurities all at once. It's a cleanser and a makeup remover. Just like oil cleansers, cleansing sticks are made with dermatologist-tested oils that melt away daily grime. The 100% natural coconut oil we use inour cleansing sticks not only gently cleanses skin by dissolving dirt, oil, and makeup; it also nourishes to leave skin softer. They won't strip skin. Cleansing sticks are oil based, meaning they nourish as they cleanse. Since like dissolves like, the oils in a cleansing stick only latch on to face oil {sebum}, removing it –along with any dirt and make attached to it-as it's rinsed off. By moving the cleansing stick all over the face, the mini facial massage will help boost blood circulation for brighter skin.

8.ACKNOWLEDGEMENTS

We would like to thank Mr. Vallimanalan B, Nehru College of Pharmacy for giving us excellent support in carrying out this research work.

9.REFERENCE

1. A Textbook of cosmetic science by DR. Aijaz. A. Sheikh, Dr. Subash. Deshmane,Dr. Kailash. Biyala, Dr.Md. Rageebmd.Usman, pg. no. 8-16

2. Zoe Diana Draelos MD. The science behind skin care: Cleansers. 2017Wiley Periodicals,Inc. wileyonlinelibrary.com/journal/ jocd J Cosmet Dermatol; 2018. Pg. no. 1-11

3. KP Ananathapadmanabhan PhD. Recent Advances in Mild and Moisturizing Cleansers,Volume 18; January
2019. Pg. no. 1-8

4. Krantidip R. Pawar, Prabhat K, Nema. Apricot kernel characterization, oil extraction, andits utilization; 2023. Pg. no.5-10
5. Review Article of Cleansers to use or not. Mukherjee, Samipa S; Chandrashekar, Gaikwad,Rohini P.
6. Russel M. Walters, Guangru Mao, Euen T. Gunn, Sidney Hornby. Cleansing FormulationsThat Respect Skin
Barrier Integrity; 2012

7. Zana R. Dynamics of Surfactnt Self-Assemblies. CRC Press; 2005.

8. Downing DT, Abraham W, Wegner BK, Willman KW, Marshall JL. Partition of sodium dodecyl sulfate into stratum corneum lipid liposomes. Archives of Dermatological Research.1993; 285(3):151–157.

9. Dnyaneshwar Solanki, Prof. Suraj Dattatray Sagrule, Shrikrushna Subhash Unhale, QuaziBilal formulation, development and evaluation of whitening face wash;2020. Pg.no.2541-2546

10. P. K. Chattopadhyay. Surfactants, Disinfectants, Cleaners, Toiletries, Personal CareProducts Manufacturing and Formulations (3rd Revised Edition); 2021.Pg.no.101-123.

11. Partha Mukhopadhyay.Cleansers and their role in various dermatological disorders; 2011Jan-Feb; 56(1): 2–6

12. Zoe Diana Draelos, Lauren A. Thaman.Cosmetic Formulation of Skin Care Products.1st edition: CRC Press Inc; 19June 2005

13. Sharma P. P.; Cosmetic Formulation, Manufacturing & Quality Control; VandanPublication Pvt. Ltd. Delhi; 4th edition; 319.

14. Wanjari N., Waghmare J. A research article on: latest trend of cosmetics cosmaceuticalsInternational Journal of pharma research & review, May 2015; 4(5): 45-51.

15. Ortonne JP. Skin cleansing: An important problem in occupational dermatology. WienMed Wochenschr Suppl. 1990; 108:19–21.