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Formulation and Evaluation of Herbal Shampoo Containing Chamomile, Rose and Orange Peel

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Abstract

Shampoos are based on soap or synthetic detergents used to cleanse, give gloss and to leave the hair lustrous. The present study was aimed to formulate and evaluate herbal shampoo containing natural ingredients like Chamomile powder, Rose petals powder and Orange peel powder and sodium lauryl sulphate as detergent. Four different formulations with varying concentrations of detergent were prepared and evaluated for physical parameters, Foaming studies and stability studies. All four formulations had shown good physical characteristics including color stability. The Formulation F3 shown good physical and foam lasts for 20 min. During stability studies the Formulation F3 shown good physical and foaming properties. Hence the antimicrobial activity of Chamomile has proved already further study is required to know the benefits of rose and orange peel on hairs in the Herbal shampoo formulation.

Key words: Herbal shampoo, Foaming, Stability studies

Introduction

Cosmetics are substances used to enhance or protect the appearance or odor of the human skin [1]. Among the all cosmetics the hair cosmetics has large market today. Shampoos are based on soap or synthetic detergents used to cleanse, gloss if and leave the hair lustrous [2,3]. The present work was aimed to formulate and evaluate herbal shampoo containing natural ingredients like Chamomile, Rose flower and orange peel using sodium lauryl sulphate as detergent.

Materials and Methods

Materials

The Herbal ingredients used in the present study like Chamomile, Rose and Orange peel were collected from local market of Anantapur and dried in shade and powdered. The other ingredients sodium lauryl sulphate, Oleic acid, Tri ethanol amine, Methyl paraben and Propyl parabenwere purchased from SD fine chemicals, Mumbai.

Methods

Preparation of shampoo

With the varying concentrations of ingredients as shown in the table 1 four different shampoo formulations were prepared and named F1, F2, F3 and F4. The procedure of preparing shampoos involves mixing water, oleic acid and sodium lauryl sulphate paste followed by heating to 60°C. Triethanolamine was added slowly with continuous stirring. Then the powdered herbal ingredients i.e.,dried chamomile powder, Dried rose petals powder and Orange peel powder was added and triturated. Then sufficient quantity of perfume was added and mixed [1,5and 6].

Evaluation of shampoo: All formulated shampoos were evaluated for the following parameters:

1. Physical parameters: All formulated shampoos were evaluated for Color, Color stability, Fragrance, pH, Viscosity: Feel on Hands, % of solids contents.

2. Foaming studies:

Cylinder shake method was used for determining foaming ability. In this test a 10% solution of shampoo was prepared with soft water, taken into a 100 ml measuring cylinder, a stopper was placed on to the cylinder and then the measuring cylinder was inverted for a fixed number of times. Then the formed foam was measured [8,9].

Foaming stability:

Cylinder shake method was used for determining foaming ability. The lasting capacity of formed foam was measured for specific period of time. The amount of foam at regular time intervals i.e. 0, 5, 10, 15 and 20 min was recorded.

Dirt dispersion:

Two drops of shampoo were added in a large test tube containing 10 ml of distilled water. 1 drop of India ink was added; the test tube was Stoppard and shaken for ten times. The amount of ink in the foam was estimated as None, Light, Moderate, or Heavy [10].

3. Stability studies:

The formulation F3 was subjected for stability studies at different temperature conditions viz.., RT, 30° C and 40° C for the period of 3 months and at regular time intervals i.e. 0, 30, 60 and 90th days evaluated for its physical parameters.

Results and Discussion

1. Physical parameters: The results of physical parameters had shown in Table 2. From the results of physical parameters it can be noticed that all formulations had good characteristics physically. The pH of all formulations were nearer to neutral (6.5 to 7.0), which is desirable for shampoos. All Formulations showed good viscosity in the range of 1400 cps to 1700 cps and among all the Formulation F3 shown viscosity of 1500 cps which is desirable for the good flow of shampoo. The solids content of the all formulations were in range of 19-24 % which indicated enough pourability of the formulations [11,12].

2. Foaming studies: All formulations were investigated for the foaming ability, foam lasting capacity and the results were showed in Table 3 and Table 4. From these tests it was found that the Formulation F3 shown good lasting capacity i.e. 108 ml after 20 min [10,13]. All formulations except F2 showed no dirt dispersion in the foam whereas the formulation F2 has shown moderate dirt dispersion in the foam. Shampoo that causes the ink to concentrate in the foam is considered poor quality; the dirt should stay in water [9].

3. Stability studies: From the results of Physical parameters and Foaming studiesstudies the Formulation F3 has chosen as best and used for stability studies for 3 months at different storage conditions i.e. Room temperature, 35°C and 40°C and stability of this selected formulation F3 during the storage period indicated complete physical stability and good foaming characteristics. The results were showed in Table 5 and Table 6.

Conclusion

Based on the evaluation tests performed on all four formulations we conclude that the formulation F3 has good properties in all aspects i.e., physical evaluation, Tests of Foaming ability & Foaming stability and Stability studies. Hence the antimicrobial activity of Chamomile has proved already further study is required to know the benefits of rose and orange peel on hairs in the Herbal shampoo formulation.

S.No	Ingredients	Quantity taken (g)				
		F1	F2	F3	F4	
1	Chamomile powder	1	1	1	1	
2	Rose petals powder	1	1	1	1	
3	Orange peel powder	1	1	1	1	
4	Sodium lauryl sulphate	44	43	42	41	
5	Oleic acid	19	20	21	22	
6	Tri ethanol amine	10	11	12	13	
7	Methyl paraben	0.25	0.25	0.25	0.25	
8	Propyl paraben	0.25	0.25	0.25	0.25	
9	Water	23.5	22.5	21.5	20.5	
	Total	100	100	100	100	

Table 1: Concentration of ingredients of Formulations F1 to F4

Table 2: Results of Physical parameters of Shampoo formulations

S.No	Parameter	F1	F2	F3	F4
1	Color	Light yellow	Light Green	Light Green	Light Brown
2	Fragrance	Acceptable	Acceptable	Acceptable	Acceptable
3	pН	6.5	7	6.9	6.5
4	Viscosity (cps)	1700	1400	1500	1700
5	Feel On Hands	Slight gritty	Smooth	Smooth	Smooth
6	% of Solids	24	20	22	19

Table 3: Results of foaming ability of Shampoo formulations

S No	Formulation	Amount of Foam (ml)				
3.110		Soft Water	Hard Water	Soil Water		
1	F1	135 ±2.03	123 ± 2.86	68 ± 1.79		
2	F2	142 ± 1.97	136 ± 3.02	71 ± 2.09		
3	F3	160 ± 2.45	143 ± 2.97	90 ± 2.24		
4	F4	138 ± 2.36	130 ± 2.34	75 ± 2.54		

All values mentioned as mean \pm S.D; Number of trials (n)=3

S.No	Time in Min	Amount of Foam (ml)			
		F1	F2	F3	F4
1	0	135 ± 2.03	142 ± 1.97	160 ± 2.45	138 ± 2.36
2	5	122 ± 2.56	129 ± 2.24	154 ± 3.21	117 ± 1.83
3	10	94 ± 2.19	102 ± 2.02	139 ± 2.76	98 ± 2.97
4	15	81 ± 1.98	84 ± 2.94	121 ± 3.12	80 ± 3.89
5	20	70 ± 2.06	71 ± 2.35	108 ± 2.76	73 ± 2.23

All values mentioned as mean \pm S.D; Number of trials (n)=3

Cable 5: Results of Physica	l parameters of Formulation	F3 during stability	studies (40°C)
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S No	Parameter	Time in Days				
5.110		0 Days	30 Days	60 Days	90 Days	
1	Color	Light Green	Light Green	Light Green	Light Green	
2	Fragrance	Acceptable	Acceptable	Acceptable	Acceptable	
3	pH	6.9	6.9	6.8	6.7	
4	Viscosity	1500	1450	1450	1400	
5	Feel On Hands	Smooth	Smooth	Smooth	Smooth	
6	% Of Solids	22	22	23	23	

Table 6: Results of Foaming studies of Formulation F3 during stability studies (40°C)

S.No	Time in Min	Amount of Foam (ml)				
		0 Days	30 Days	60 Days	90 Days	
1	0	160 ± 2.45	154 ± 3.04	156 ± 2.57	152 ± 2.15	
2	5	154 ± 2.18	142 ± 2.86	145 ± 3.05	141 ± 1.65	
3	10	139 ± 1.87	133 ± 2.39	130 ± 2.23	128 ± 3.14	
4	15	121 ± 2.09	118 ± 2.97	116 ± 3.25	112 ± 2.67	
5	20	108 ± 2.15	103 ± 2.88	102 ± 2.67	103 ± 2.36	









Fig.2. Foaming stability of formulations F1 to F7



Fig.3. Foaming stability of Formulation F3 after stability studies

References

- 1. Mithal BM; Saha RN. A Hand book of cosmetics: MK jain, 2ndEdition.
- 2. Breuer: classification of shampoos, Soc. cosmet. chem., 1981, 32, 437-456.
- 3. Butler H. Introduction of shampoo, poucher's perfumes, cosmetics and soaps, 10thedn. 289-306.
- 4. Ralph M trueb, shampoos: ingredients, efficacy and adverse effects; 2007: jddg; 5: 356-365.
- 5. Shoaibarif. Hair shampoos, the science & art of formulation; **2010**: technical bulletin; pilot chemical company.
- 6. Prabhamanju M; GokulShankar S; BabuK; Ranjith MS. Herbal vs. chemical substances as antidandruff ingredients: which are more effective in the management of dandruff an overview; *egyptian dermatology online journal*, December **2009**;Vol5; 28-34.
- 7. Bryce and smart; the preservation of shampoos; j. soc.cosmeti chemists; 2006; 1:6; 187-201
- Noudeh GD, Sharififar P, Khazaeli P, Mohajeri E, jahanbakhsh J; formulation of herbal conditioner shampoo by using extract of fenugreek seeds and evaluation of its physicochemical parameters; African journal of pharmacy and pharmacology; African Journal of Pharmacy and Pharmacology, 2011; Vol. 5(22), pp. 2420-2427

- 9. Richamadhusharma, kinjal shah, jankipatel; Evaluation of prepared herbal shampoo formulations and to compare formulated shampoo with marketed shampoos; international journal of pharmacy and pharmaceutical sciences, 2010; vol 3, issue 4, 402-405
- 10. Marshall Sorkin, M.S., Bertram Shapiro, B.S., and Gus S. Kass: Evaluation of shampoos; J. Soc. Cosmetic Chemists ,1966; 17, 539-551
- 11. Shoba rani R Hiremanth; Text book of Industrial pharmacy, Drug delivery systems & Cosmetics & Herbal drug technology: Universities press (India) Ltd; 2nd Edition
- 12. SwarnalathaSaraf, ShailendraSaraf, Cosmetics: A Practical Manual, Second Edition.
- 13. RichaMadhu Sharma, Kinjal Shah, Janki Patel: Evaluation Of Prepared Herbal Shampoo Formulations and to Compare Formulated Shampoo With Marketed Shampoos; International Journal Of Pharmacy And Pharmaceutical Sciences,2011: Vol 3,