



**SHORT COMMUNICATION: FORMULATION AND EVALUATION OF CLEANSING
CREAM FROM NATURAL PRODUCTS**

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ABSTRACT

The aim of the present study is to formulate and evaluate cleansing cream from natural products, prepared by using oil in water method. Cleansing cream is required for removal of makeup, surface grime oil and water and oil soluble soil effectively, predominantly from the face. Cleansing cream overcomes the disadvantage of the soap such that it makes the skin look soft whereas the soap makes the skin look dry. Different types of formulation for cleansing cream from F1 to F4 were formulated from Castile soap, Matcha green tea (*Camellia sinensis*) powder, Vitamin E oil, Mentha oil (*Mentha piperita*), Poppy seeds (*Papaver somniferum*) in varied concentration. The evaluation of all formulations (F1-F4) has been done by the analysis of different parameters like pH, spread ability, microbial test and stability. Among the four formulations (F1-F4); F4 showed good spread ability, good consistency, homogeneity, appearance, pH, there is no proof of separation phase. These formulations can be safely used on the skin. Hence, the study suggests that the composition of F4 is more stable and safer.

KEYWORDS: Cleansing cream, Castile soap, Matcha green tea powder, Vitamin E oil, Mentha oil, Poppy seeds.

INTRODUCTION

The appearance and function of the skin are maintained by a significant balance between the water content of the stratum corneum and the skin surface lipids. The skin represents the most superficial layer of the body, and so it is constantly exposed to various environment factors, in addition to that frequent use of soaps, topical irritant, makeup, hot water can remove the skin surface lipids.^[1] Here the need for cleansing cream arise, it is required for removal of facial makeup, surface grime oil and water and oil soluble soil effectively, predominantly from the face.^[2] Cleansing cream overcomes the disadvantage of the normal soap, even of high quality, may have excess of alkali, and might be too drying to the skin surface, whereas cleansing cream it makes the skin look soft.^[3] The development process for cosmetics have varieties of properties like antioxidant, anti-inflammatory, anti-microbial, emollient and anti-bacterial etc. The natural products claim to have less side effects, commonly observed with products containing synthetic agents.^[4]

Literature survey revealed that Castile soap is a natural cleansing product made with natural olive oil; and with antibacterial properties.^[5] Matcha green tea powder obtained from *Camellia sinensis* contains highest level of epigallocatechin gallate (EGCG) that exhibits significantly anti-oxidant, chemo preventive, anti-

inflammatory and immunomodulatory effects in protecting the skin.^[6] Vitamin E oil, natural mixed tocopherols can help to maintain the freshness and shelf life of product and a highly effective antioxidant that can be formulated in a cream.^[7] Mentha oil obtained from the fresh flowering tops of the plants *Mentha piperita* by stem distillation is considered important essential oil for anti-microbial activity.^[8] Poppy seeds obtained from the opium poppy (*Papaver somniferum*), is a natural product whose seeds are responsible for skin care product, especially for dry, barrier damaged, sensitive skin for soothing process.^[9]

MATERIALS

The proposed study of Castile soap, Matcha green tea powder, Vitamin E oil, Mentha oil, Poppy seeds was collected from the local areas of Mumbai. Cocoa butter, Glycerol monostearate and Sodium benzoate were use of analytical grade. Purified water used in the study.

METHODS

Preparation of Cleansing Cream

Water in oil (W/O) emulsion- based cream (semisolid formulation) was formulated. The oil base Cocoa butter melted at 50°C in a double boiler (Part A). Triturated Matcha green tea powder, Glycerol monostearate, along with water were dissolved in the aqueous phase (Part B). After that triturated mixture, the aqueous phase is poured

in to the melted Cocoa butter, the oil phase and stirred continuously until a homogeneous mixture is formed. To the above obtained homogeneous mixture Castile soap was added. Followed by Poppy seeds, Vitamin E oil and

menthe oil were added. The formulation for the Cleansing cream is given in table 1. Formulation F4 found to be more stable.

Table 1: Formulation of cleansing cream.

Sr. No.	Ingredients	Formula (%w/w)			
		F1	F2	F3	F4
1.	Castile soap	4	6	6	6
2.	Matcha green tea powder	0.40	0.40	0.40	0.40
3.	Cocoa butter	-	-	-	3
4.	Shea butter	4	4	3	-
5.	Vitamin E oil	2.83	2.83	2.83	2.83
6.	Sodium benzoate	0.2	0.2	0.2	0.2
7.	Glycerol monostearate	2	2	2	2
8.	Mentha oil	0.4	0.4	0.4	0.4
9.	Poppy seeds	qs	qs	qs	qs
10.	Purified water, qs, 100	qs	qs	qs	qs

Table 2: Composition of cleansing cream.

Sr. No.	Ingredients	Obtained form	Biological source	Category
1.	Castile soap	Natural olive oil	-	Cleanser
2.	Matcha green tea powder	Tea leaf	<i>Camellia sinensis</i>	Antioxidant
3.	Cocoa butter	-	-	Oil base
4.	Shea butter	-	-	Oil base
5.	Vitamin E oil	-	-	preservative
6.	Mentha oil	Fresh flowering top	<i>Mentha piperita</i>	Perfume, soothing agent
7.	Glycerol monostearate	-	-	Emulsifier
8.	Poppy seeds	Seeds	<i>Papaver somniferum</i>	Exfoliating agent
9.	Sodium benzoate	-	-	Preservative
10.	Purified water	-	-	Vehicle(aqueous phase)

The evaluation of the preparation includes the type of emulsion, physical characteristics (organoleptic, homogeneity, appearance, spread ability, and removal), chemical characteristics (pH), microbial test and stability.

RESULT AND DISCUSSION

Emulsion type test using dilution method and staining method using methylene blue to ensure that the cream preparation including emulsion type O/W, which is uniformly spread in blue color and cream is easily diluted.

On organoleptic examination, it is found that all the cleansing cream preparations are dark green due to presence of Matcha green tea and have a soft texture with easy spread ability. It is observed to have peppermint distinctive odor.

Based on homogeneity examination cleansing cream were tested by visual appearance of no spot and by touch. The result of pH examination was found to be in the range of 6.8 to 7.22 which is good for skin pH. All the formulation of cream shown pH near to skin required i.e. pH of F1-6.85, F2-7.10, F3-7.15 and F4-7.22. About 0.5g of the cream was weighed and dissolved in 50.0ml of distilled water and its pH was measured.

The formulation subjected to stability study as IP guidelines for the period of minimum one month shows that cream preparation has the good stability, no visible phase separation and no change in color. All the formulations passed the microbial limit test which included some parameters like total aerobic microbial count found to be 28cfu/g, total fungal count: 6cfu/g, pathogens like *S. aureus* observed with absence of yellow colony and *P. aeruginosa* showed absence of green fluorescent colony.

The ease of removal of cleansing cream applied was examined by washing the applied part with tap water. The prepared cleansing cream was O/W type emulsion, hence can be easily washed with plane water that gives better patient compliance. Our study indicated that the formulation F4 found to be more stable for long time than formulation F3 as presence of shea butter showed the discoloration at the top layer of the cream. As oxidation of unsaturated fatty acids causes the rancidity of shea butter and reduce the quality. Exposure of shea butter to factors such as heat, light and trace of metal particularly copper and iron promote rancidity. Microorganisms producing oxidizing enzymes also promote oxidative rancidity. Whereas cocoa butter is composed of a combination of fats that is solid at room temperature, but liquid at human body temperature. All

the formulations are successfully paraben free; as vitamin E (tocopherol) used as natural preservative, while in recent years; there is a considerable interest in the development of preservative free or self-preserving cosmetics.

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